



Forum of Arctic Research Operators

FARO Annual Meeting 2024

21 March, Edinburgh, Scotland, UK hosted at the University of Edinburgh

Minutes

Open Meeting

1. Opening Session: led by Jennifer Mercer, FARO Chair

Welcome by Jennifer to the FARO 26th annual meeting, with participants both online and in Edinburgh. Jennifer can celebrate her 6th and final year as FARO chair.

2. The meeting minutes from 2023 were approved.

3. Jennifer went through the agenda for the day, and the agenda was approved.

4. Report from the Chair: This is the 26th annual meeting. Piotr from Poland is probably the only one who has been here the whole time! The ExCom met monthly in 2023 and achieved several milestones, including publishing the FARO Strategy, drafting Key Actions, and signing a new 10-year MOU with IASC covering IPY. Additionally, FARO was represented on the Science Advisory Board for the One Planet Polar Summit, and regular posts were made on the FARO social media accounts. Furthermore, Spain has requested membership.

5. Updates from Countries

5 minutes allowed for each country

The focus of the updates this year was on:

1. General updates
2. Information on ICARP activities/contributions
3. Overview of planned vessels/icebreaker capacity, with updates on status and date of availability of the vessels/icebreakers.
4. Update on modernizing infrastructures in terms of green transitions

All the country presentations can be found online via this link: [Annual meeting 2024 \(faro-arctic.org\)](https://faro-arctic.org/annual-meeting-2024)

Canada, Jim Drummond: Canada's Northern National Research Organization (CNNRO) is facing organizational challenges currently. Research trends in Nunavut. Coming soon: the Polar Continental Shelf Program and the rapid rise of northern research. Sustainability: Internet connection is going fast

now for communities. Airship is now started up as new idea for green transport: Flying whales. ArcticNet has been renewed. Churchill marine observatory opens in 2024. CHARS in the middle of renewal. PEARL facility is closing 30 June 2024. A reminder was emphasized regarding the requirement for obtaining licenses for conducting activities within specific territories.

China, Jiangfen He: presentation of the Xuelon 2 icebreaker. Chinare II arctic cruises. Presentation of new research vessel Jidi. Overview of international programs: JASMIInE, RecCAO. Activities 2024: testing cruise with Jidi and an Arctic cruise with Xuelong 2.

Denmark and Greenland, Elmer Topp-Jørgensen: presentation of all the activities in Greenland in 2024. Cruise plans for research vessels Tarajoq and Sanna. Ships are open for chartering. At ISAAFFIK website you can search for projects, fieldwork, infrastructure, education, and much more. Solar power on more and more stations in Greenland.

Finland: no representative

Germany, Dirk Mengedoht: Next year, there will hopefully be more details about the future Polarstern 2 – no news this year. In 2023, there were 3 travels to the Arctic Ocean, crossing the North Pole. In 2024, there will be two cruises to the Arctic Ocean, going to the northern Greenland part. The new research vessel RV Uthörn runs on methanol. For the upcoming season 2024, AWIPEV will have full-year occupation. The 20-year celebration of AWIPEV was held in May 2023, acknowledged at a ministerial visit (Norway, France, Germany) in April 2024.

France, Yan Ropert-Coudert. Presented together with Germany – see Dirks presentation. Corbel station burned down completely last year. Now clearance of the area in cooperation with Norwegian authorities. France will build a new station.

Iceland, Anna Olafsdottir: Arctic Strategic Plan work began 2021, incomplete and no deadline. The research vessels are not rented out. Click on links in the presentation to see infrastructure in Iceland (eurofleets, POLARIN etc). ICARRP coordinated by IASC coordinated by the secretariat in Iceland. ICARP Retreat planned in Iceland in Autumn 2024. New research vessel delivered in November 2024 named after a female marine biologist Þórunn Þórðardóttir.

Italy, Mauro Mazzola: No arctic activities for the vessels in 2024. ICARP activities: 12 Italian experts in 5 topic areas. From 2023 the station has an electric car for moving people and goods in and around Ny-Ålesund.

Japan, Hiryoki Enomoto: Japan will soon have its first research icebreaker for Arctic science (ARV Mirai II). First Arctic cruise planned for 2027. Several Arctic projects going on, the largest is Arctic Challenge for Sustainability II. Contribution to EISCAT, operating three incoherent scatter radar systems.

Korea, Dongmin Jin: Next Generation Icebreaking Research Vessel is being built and the completion of the ship has been delayed from 2026 to 2029. Arctic cruises 2024: 1st Leg :Bering, Chukchi, and East Siberian Sea (31 Jul –25Aug) Bering. 2nd Leg: East Siberian, Central Arctic Ocean and Chukchi Sea (27 Aug –17 Sep).

The Netherlands, Daan Blok: new research vessel, ice strengthened, named after female scientist RV Anna Weber-van Bosse will be ready by 2025. New 10-mio euro Calls running for a-polar programme. The arctic calls will be in collaboration with AWI and includes Greenland and Svalbard region. Opens in 1st half 2024, with 4 Million € budget. NL polar day on April 23, 2024. New outreach initiative: The Arctic explorer - step into the arctic. Through the eyes of the scientist explore the state of the ice, glaciers and bird life.

Norway, Nalan Koc: cruises in 2022 and 2023 transect lines. Early career researchers joining this cruise. Similar cruise this year. Ny Ålesund is back to normal after the covid years. International

Kongsfjorden Year: Year-round sampling during the International KongsfjordenYear (summer 2024 to summer 2025).

Poland, Piotr Glowacki: Infrastructure in the polar region remains stable, with the Hornsund station operating year-round and seasonal stations owned by universities. Research vessel operations in the Svalbard region are scheduled for June to September 2023, with expeditions to Greenland and Newfoundland planned. Activity is on the rise, with an increase in researchers and international collaboration, hosting over 1500 scientists last year, with 30% from other countries. Cooperation with international partners has resulted in over 5000 person-days of research. Funding from Polish ministries has supported these efforts, including a new team at the Polish Academy of Sciences focused on polar research. However, funding for a new ocean-going vessel remains pending, with only 20 million euros received so far, necessitating potential government support for polar region work.

Portugal, Teresa Cabrita: Portugal has no infrastructure in the Arctic. Presentation included an overview of Portuguese projects taking place in the Arctic.

Sweden, Åsa Lindgren: GEOEO, arctic project with Icebreaker Oden – planning to start in Aug to Victoria fjord and continue to Morris Jessup. End expedition in Longyear byen. Join expedition with Canada for 25-27. Sweden will be the new host for EPB from 2025. ICARP: no updates. Abisko Science Station has implemented several environmentally friendly initiatives, including geothermal heating, air-heat exchange systems, solar panels, electric and plug-in hybrid vehicles etc. Steps are being taken to get a new modern climate-neutral research vessel to replace Oden.

Switzerland, Daniele Rod: GreenFjord Flagship programme: 955 field days and collaborations with Greenland, USA, France, Germany, Japan, Australia, South Africa. Expedition 2024 in Greenland, Greenfjord + Ulaval (Qc, Canada). Green transition: From 2025 to 2028, SPI's main focus is enhancing environmental sustainability. Measures include broadening impact assessments, redefining costs, evaluating tech projects, and integrating sustainability into collaborations and culture. ICARP is in the hands of the Swiss academy of sciences, so no updates.

UK, James Wake: Several spring projects ongoing and many projects for the summer in Ny Ålesund, Svalbard. The David Attenborough vessel will be going to the Arctic this year for the first time with a project focusing on Kangerlussuaq fjord and shelf. Trying biofuel on vessels – but having issues, question where to bunker biofuels in, for example Antarctica.

USA, Jennifer Mercer: Summit Recapitalization: Updating infrastructure to be more efficient, flexible, and scalable. Elevating the station above accumulating and drifting snow in a location about 1 km from the current station. Plan to increase the use of renewables in future operating model to reduce reliance on fossil fuels. 2024 Planned Vessel/Icebreaker Projects overview.

6. Updates from other organizations and projects (5 minutes)

IASC (ICARP IV status) – Gerlis Fugmann

The International Conference on Arctic Research Planning Process (ICARP) is a decadal international Arctic research planning process organized by IASC in cooperation with international partners every 10 years since 1995. This marks the 4th international conference on research planning. It's a 4-year process until 2026, engaging Arctic researchers etc., to consider the most urgent knowledge gaps and Arctic research priorities and needs for the next decade. The focus is on long-term planning, as the 5th International Polar Year will take place in 2032-33. Currently, we are in the engagement phase: everyone can contribute input from 2023-2024. You can organize your own activity. The 3rd phase in

2024 will be to define the research priorities – Teams (RPTs) should work to define knowledge gaps, research priorities, and opportunities.

IASC has had a longstanding partnership with FARO.

Discussions Input from FARO to ICARP

FARO should identify the challenges for the coming years and present the current activities in the field of technology/Infrastructure/Logistics/Services.

Main inputs from the FARO discussion were:

- Budget is a challenge for all infrastructures
- Several new vessels are coming out the next couple of years.
- Hard to predict the future – in 10 years' time, will we maybe have enough automatization - so we don't need as many people onsite all the time?! How will things be different in 10 years' time?
- Power storage from renewables is improving, electric vehicles are coming to the Arctic.
- Automatization to reduce C footprint – more efficient.
- Operational scenarios – how will we operate and deliver science if everything is changed? (due to above mentioned).
- How to prepare for the future – how to resolve a situation where we cannot go to Arctic like covid, or the seclusion of Russia? Better coordination? How to prepare scientists for the future? Have a local network to maintain data, maintenance of instruments, if we cannot go. We learned a lot during covid, having local community members continuing projects, fix instruments. Collaboration, and local partnerships or researchers are valuable to continue the onsite work.
- Upgrading in the context of climate change. Large wildfires, affecting infrastructures (using helicopters etc) out of play – cancelled plans for research. Innovative partnerships. Changes have an impact of the operational part. Reservations needed or industry uses the resources – platforms are being used up earlier, as they are not only used for research.
- Our infrastructures are not enough environmentally friendly, especially vessels. This becomes more and more important – we should consider how to make research and infrastructure more green.
- Open the infrastructures to other countries – especially those countries who have no icebreakers.
- Better connections between the stations in the Arctic. What are our experiences, provide input so we know the future of satellites/internet. Depending on local regulations of course.
- Infrastructure should align with the outcomes of the other topic areas. We should liaise with the science groups – coordination needed between the topic groups.

7. Thematic discussions (60 minutes)

a. Decreasing vessel interference with subsistence hunting

USA, Frank Rack: The US, including NSF, operating under the framework of the National Strategy for the Arctic Region (NSAR), implements plans via executive orders and documents coordinated through IARPC, with each agency developing its own plans following the SHARE principles for local engagement. In spring, plans for the field season are shared with locals for feedback, adjusting based on input.

Environmental checklists are conducted for potential conflicts, such as impacts on whale hunting, with communication plans including daily contact with local observers and seeking community input through notices and broad outreach.

David, Geological survey of Canada: Canada's major focus is reconciliation, necessitating fair and consensual engagement with Indigenous peoples, with an emphasis on building trusting relationships. With increased industry activity, conflicts have arisen, particularly regarding caribou migratory routes and breeding grounds, overwhelming smaller organizations and leading to program cancellations despite previous good relations. Long-term relationships are crucial. Underscoring the importance of hiring local individuals for operational success.

Key points from discussion include the importance of outreach and communication to mitigate interference with hunting activities, emphasizing the need for early engagement and responsiveness to feedback.

The Arctic hub in Greenland serves as a resource for research coordination in Greenland.

Expectations of increased ship traffic prompting consideration of regulations.

It is hoped that these discussions, led by FARO, will continue to address concerns around conflicts, not only for vessels but also terrestrial research.

b. Field safety and Polar bear training – training materials and resources

We all have different rules and regulations in different countries. In Canada, they have scare tactics, such as sound and electric fences at camps, with the main approach being to scare bears away. In Alaska, bear guards are hired with rifles to accompany groups and keep an eye on bears. In Greenland, bears are hunted by locals, and authorities there require rifles in the national park. Wildlife encounters are common, so it's important to train and be prepared for such incidents. The US collaborated with AWI and aligned training provided to the MOSAIC expedition. Several groups are setting standards, such as INTERACT and the Arctic Science Partnership, which are relevant for the entire Arctic. SIOS also focuses on polar bear safety. Suggestion to create common course descriptions and recognizing the same courses, which would also be accepted by Svalbard. Canada does not allow AWI to purchase weapons, so it would be beneficial to discuss how to borrow weapons. In Svalbard, polar bears are protected, and UNIS offers training to everyone coming to Longyearbyen.

Hiring local help is crucial, and better access to courses, even if not free, is important. Bears are showing up in new places and are changing behavior due to climate change.

NSF can offer training if people are willing to pay, and the US could facilitate this.

Action items:

- FARO should collect guidelines and regulations in relation to safety.
- FARO should collect policies on connectivity (like Starlink) in different countries.

c. Follow up discussion on sexual harassment and bullying prevention

Updates on implementation from various countries

Teresa presented a new report on polar research equity. Portugal lacks infrastructure, so they rely on international cooperation to address this issue. Suggesting that COMNAP could serve as a support platform. Survey results focused on the polar community revealed challenges for females in organizing family life during long fieldwork periods, leading to men spending more time in the field. However, women tend to be more productive during their time in the field, producing more papers when considering mission duration. Family issues disproportionately restrict women, and incidents may go unreported, especially by women, due to potential consequences. Establishing structures and trust is crucial for creating a safe reporting environment.

Managing diverse nationalities in one place can be challenging; the US utilizes anonymous reporting and third-party investigation approaches. Training is provided before going to places like Toolik, but dealing with multiple entities (e.g., military, academics, contractors) poses challenges. It's important to address issues like bullying, racial discrimination, and gender identification sensitively, ensuring compliance with local laws and reporting incidents to authorities. Bystander training should also be taken seriously.

8. Updates from other organizations and projects, 5 minutes each (45 minutes)

- COMNAP – Dirk Mengedoht

Overview to Annual activities and cooperations

Additional Projects:

1. COMNAP RINGS Collaboration

2. Improving Equity, Diversity & Inclusivity (EDI) & Preventions of Harassment in Antarctica

- The Asian Forum for Polar Sciences -AFoPS – Siti Aisah Binti.

Overview of AFoPS member countries (China, India, Japan, Korea, Malaysia, and Thailand) and their activities in 2024. Information on this year's cruises can be found in the slides.

Several outreach initiatives have been undertaken in many countries. Malaysia is organizing the 10th Malaysian International Seminar on Antarctica on May 14-15, 2024, with the theme 'Polar Research for Sustainability and Planetary Health'.

- The Pacific Arctic Group (PAG)– Jacqueline Grebmeier

PAG will have its Spring meeting on Sunday (24th of March during ASSW). Jacqueline is co-chair with Christina. The Pacific Arctic Group (PAG) comprises institutions and individuals with a Pacific focus on Arctic science, operating under the International Arctic Science Committee (IASC). Its mission is to function as a regional partnership in the Pacific Arctic, coordinating and collaborating on mutual science activities. Info on the cruises this year can be found in the slides.

- European Polar Board, EPB – Renuka Badhe.

EPB acts as a platform for sharing knowledge among members and the broader European polar research community, fostering scientific cooperation and information exchange in research, logistics, and infrastructure in polar regions. It aims to coordinate European polar research by: serving as an information hub, coordinating large-scale science projects, and offering scientific policy guidance. European Polar Infrastructure - Polardex is providing comprehensive information about infrastructure, logistics, and research from both polar regions. Polarcluster (www.polarcluster.eu) is European funded projects with Arctic, Antarctic or Polar focus. The EU Polar Cluster aims to centralize EU-funded Polar research

expertise, offering policy support for the Arctic while maximizing impact and visibility with less stakeholder fatigue.

- POLARIN – Nicole Biebow.

POLAR Research Infrastructure Network, POLARIN, is a new EU funded project. It is a network of 50 partner institutes that will provide access to polar research infrastructures. Over the next five years, the European Union will provide 14.6 million euros in funding for this project. Access integration to 64 research infrastructures in both poles, of which there will be transnational access to 38 Research stations.

- INTERACT – Elmer Topp-Jørgensen.

INTERACT III is extended to end of 2024. The INTERACT GIS has information on +70 stations and a search function. Overview of national permit systems in all Arctic countries. INTERACT publications of relevance to station managers and researchers are available on the website. INPA, INTERACT Non-Profit Association, is an initiative under INTERACT. Access is offered to 24 research stations located in the Arctic and northern alpine and forest areas in Europe, and North-America. The main objectives of INPA are to improve international cooperation, to coordinate resources and research initiatives, to provide access to members' infrastructures, and to financially support research and monitoring focusing on the Arctic, sub-Arctic, boreal and alpine areas and its global implications.

- Arctic Science Funders Forum - Egill Thor Nielsson.

ASFF was established in 2018 after the Arctic Science Ministerial 2 (ASM2) in Berlin, and has 26 member countries, the EU, and six Indigenous peoples' organizations involved. Working Procedures were adopted in October 2021, defining IASC's advisory and consultative role and providing logistical support. ASFF is facilitating multilateral discussions among funders to initiate collaborative scientific activities in the Arctic, developing funding programs, considering "big ideas," and communicating priorities, activities, and opportunities. Has been struggling with covid and political aspects. ASFF does not directly fund research projects or organize research calls.

- **FARO 5-Year Strategic Plan FARO strategy prioritization and implementation of Key actions**

Key actions will be finalized and implemented by the ExCom, as there were no comments from NPOC's.

FARO should incorporate the examples of action items discussed today, particularly regarding safety measures (include in the key actions).

9. End of Open Meeting

Internal business

10. Administrative business: Jennifer Mercer, FARO Chair

- i. The FARO Secretariat - 2023 finance report.

Our income in 2023 was €26981 with 18 member countries having paid the annual fee (Czech Republic is no longer member of FARO). The expenditure was €17,817. Almost all the budgeted salary for 2023 was used by the FARO secretariat.

It was agreed by all NPOCs in the 2023 Annual Meeting that the Secretariat could hold €8000 for discretionary spending; however, no spending occurred. The balance of the year is €9,164, with €56,914 carried over to 2024.

ii. 2024 budget.

The travel budget is set at the same level as in previous years (before the pandemic).

The total budgeted expenses are a bit higher (€30830) than the expected income in 2023 (€26,981).

Suggestion: the Secretariat can hold €8000 for discretionary spending in 2024, as agreed in 2023.

The budget was adopted.

iii. Refining 'FARO Chair and ExCom terms and election procedures' (agreed 1 April 2017) – specifying need for diversity and time elected ExCom members serve.

It was decided to change the text as suggested below:

Elections should aim for diversity, also in geography and operational capacity. ExCom members are elected for three years.

iv. Election of FARO Chair and ExCom members for the period 2024.

Members with terms expiring:

- USA, Jennifer Mercer. Elected 2021-2024 (chair)
- Iceland, Anna Olafsdottir. Elected 2021-2024 (ExCom)
- Japan, Takuji Nakamura. Elected 2021-2024 (ExCom)

To ensure continuity and prevent too many members from rotating out simultaneously, Japan will extend its term for one more year.

Regarding the appointment of a new ExCom member, Nalan Koc was nominated by the ExCom and has accepted the nomination, subsequently being elected.

For the position of the new Chair of FARO, Jennifer nominated Dirk Mengedoht, who accepted and was elected as the new chair.

v. Next FARO Annual meeting during ASSW 2025 in Boulder, Colorado, United States from 21 - 28 March 2025

vi. Any other business

11. Wrap up: Jennifer Mercer

FARO should have a toast to welcome new members. Jennifer expressed gratitude for the support received during her two terms as chair, which is the maximum according to the Terms of Reference

(ToR). Additionally, she will no longer serve as the NPOC for the US, with Frank Rack taking over this role. Jennifer will continue to support the new chair and ExCom in the coming year.

Dirk is appreciative of the opportunity to assume this role. As he was not previously the NPOC, he couldn't nominate himself. This marks his first year serving as NPOC.

Participants:

FARO members: Jennifer Mercer, Dirk Mendedoht, Daan Blok, Yan Ropert-Coudert, Piotr Głowacki, Daniele Rod, Anna Oalbsdottir, Mauro Mazola, Nalan Koc, Takuji Nakamura, Åsa Lindgren, Teresa Cabrita, Jim Drummond, Jiangfe He, James Wake, Dongmin Jin.

FARO secretariat: Elmer Topp-Jørgensen, Marie Frost Arndal

Others: Nancy Sung, David Mate, Tim Ryan, Carol, Frank Rack, Kathy Smith, Leslie Anderson, Daniel Lyberth Hauptman, Yulia Zaika, Ramesh, Nicole Biebow, Laurie Juranek, Daruis Jurasnid, Hiriyoki Enomoto.