Third Arctic Science ministerial Webinar Series

Co-hosted by Iceland and Japan

This webinar series is a cooperation between the ASM3 Organizers in Iceland and Japan and the European Polar Board.

Third Arctic Science Ministerial Webinar Series

ASM3 Closing Webinar

Post-Ministerial Review:
Joint Statement and Actions

Introduction

Hiroyuki Enomoto

National Institute of Polar Research

ASM3 Science Advisory Board Co-Chair

ASM3 Final Webinar Agenda

Review of the ASM3 Science process

- *Embla Eir Oddsdóttir, Icelandic Arctic Cooperation Network, ASM3 Science Advisory Board Co-Chair*

Ministerial Highlights from Tokyo

- *Hajime Kimura, Ministry of Education, Culture, Sports, Science and Technology, Japan*

Looking Forward: ASM4

- *Anton Vasiliev, Deputy Director of the Representative Office of the Russian State Hydrometeorological University, Russia*

ASM3 Final Outcomes:

Report

- *Ásgerður Kjartansdóttir, Ministry of Education, Science and Culture, Iceland*
- *Jenny Baeseman, ASM2 and ASM3 Science Consultant, Baeseman Consulting & Services LLC*

Joint Statement

- *Lindsay Arthur, Ministry of Education, Science and Culture, Iceland*

ASM3 Database and Online Resources

- *Tetsuo Sueyoshi, National Institute of Polar Research, Japan*

Webinar Series

- *Renuka Badhe, European Polar Board*

Question and Answer Session

Review of the ASM3 Science Process

Embla Eir Oddsdóttir

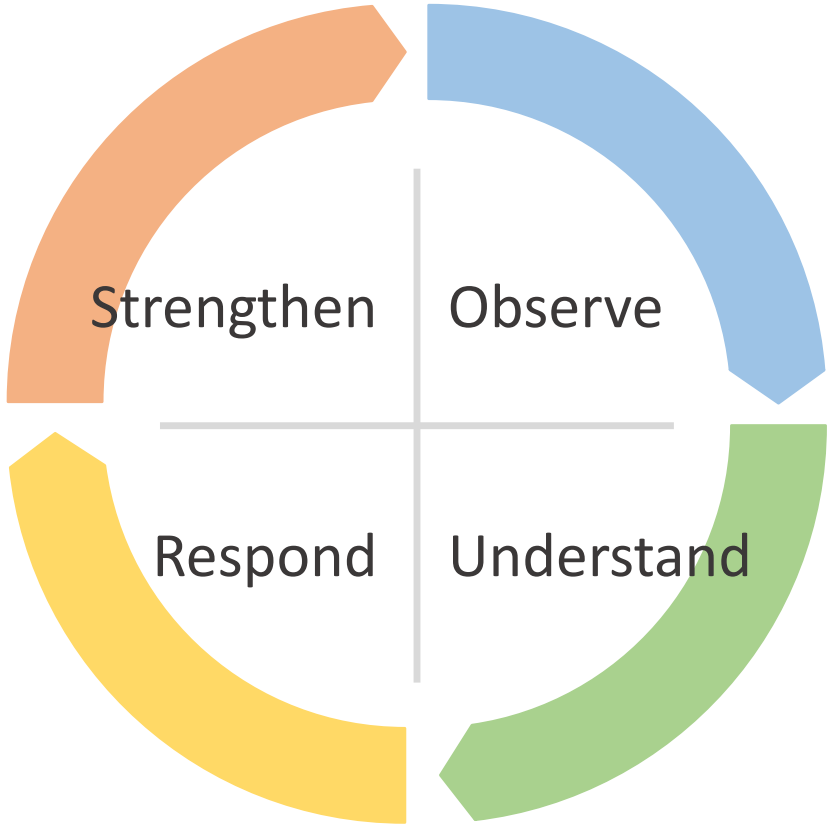
Icelandic Arctic Cooperation Network

ASM3 Science Advisory Board Co-Chair

ASM3 Themes

"Knowledge for a sustainable Arctic"

Observe, Understand, Respond, and Strengthen: 4-step iterative cycle



1. **Observe**
   implementing observing networks; data-sharing
2. **Understand**
   enhancing understanding and prediction capability for Arctic environmental and social systems, for the global impact of these changes
3. **Respond**
   operationalizing sustainable development, evaluating vulnerability and resilience, and applying Knowledge
4. **Strengthen**
   preparing the next generation through capacity building, education, networking; and resilience

ASM3 Science Advisory Board

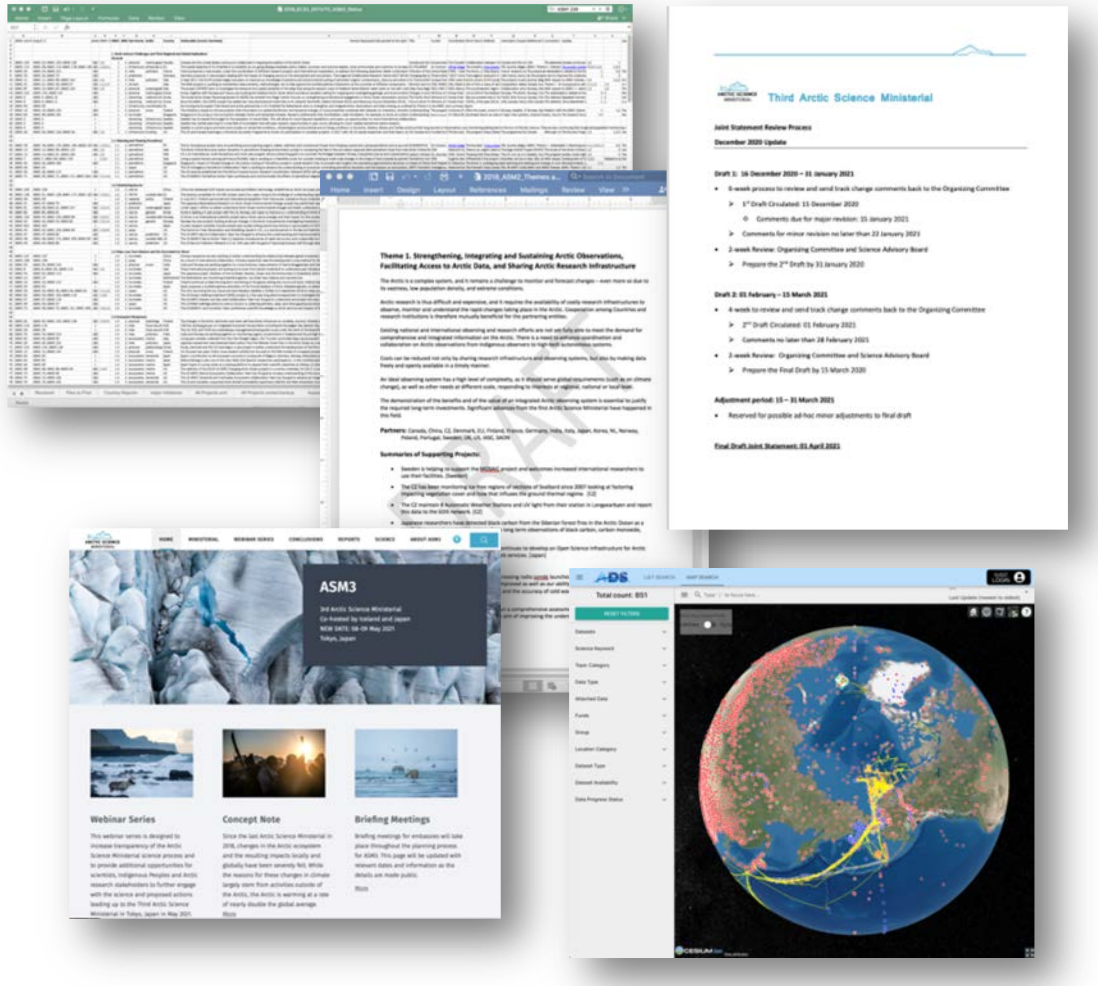
1. Icelandic Representative: Embla Eir Oddsdóttir
2. Japanese Representative: Hiroyuki Enomoto
3. AOS Representative: Hajo Eicken
4. APECS Representative: Mia Bennett
5. ASM1 Representative: Fran Ulmer
6. ASM2 Representative: Karin Lochte
7. IASC Representative: Henry Burgess
8. IASSA Representative: Andrey Petrov
9. Indigenous Arctic Knowledge Holder Representative: Liza Mack
10. Indigenous Science Representative: Eva Kruemmel
11. SAON Representative: Sandy Starkweather
12. UArctic Representative: Arja Rautio

Ex Officio

- Jenny Baeseman (Science Consultant)
- Hajime Kimura (MEXT)
- Lindsay Elizabeth Arthur (MRN)
- Þorsteinn Gunnarsson (RANNÍS)
- Yuji Kodama (NIPR)
- Tetsuo Sueyoshi (NIPR)

ASM3 Science Process

- Country / Organization Participants
  - Arctic Research Overviews
  - ASM2 Project Updates
  - New Projects in Support of ASM3
  - Collaboration and Cooperation Survey
- Statements of the Research Communities
  - Research Community Workshop (IASC/IASSA/APECS)
  - ISAR-6
  - AOS 2020
- Online Feedback Forms on asm3.org



ASM3 Science Process

Governments + European Union;
Indigenous Peoples Organizations

Project Information
(Survey Form)

International Organizations for
Arctic Science and Educations

Project Information
(Survey Form)

International Arctic Research Community

Research Community Workshop
(IASC/IASSA/APECS)
ISAR-6 Online Meeting
Arctic Observing Summit

Meeting
Statements

ASM3 Science Summary
ASM3 Project Database

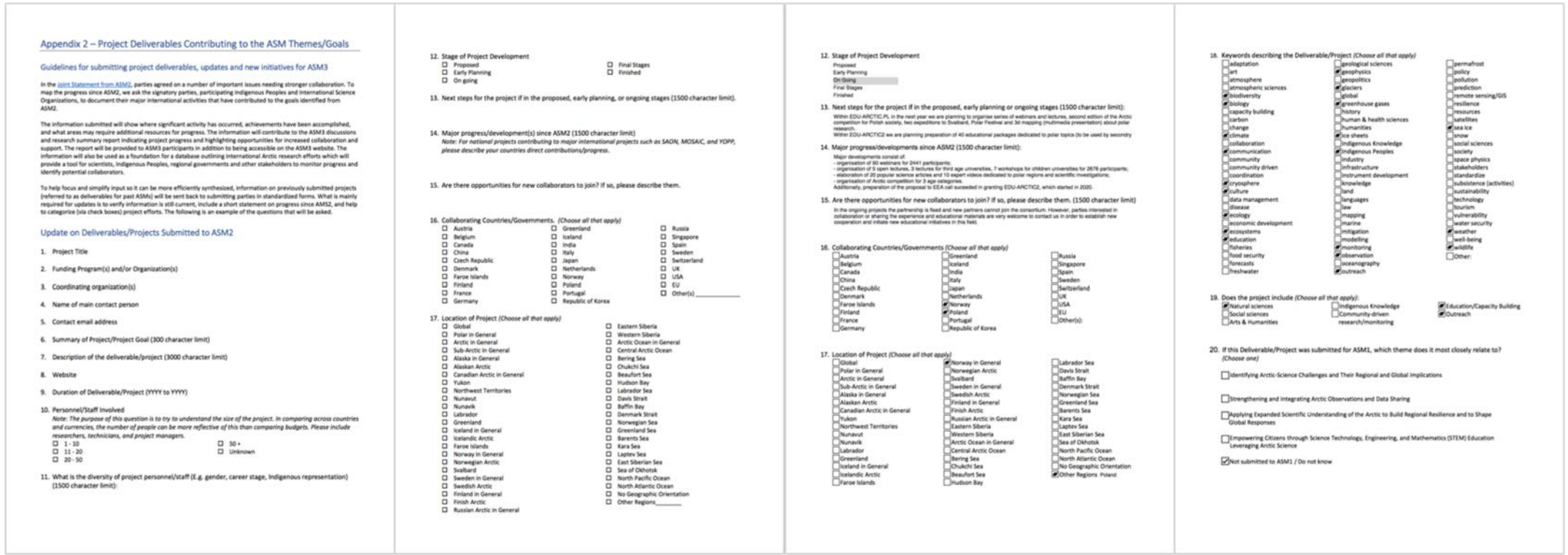
ASM3 Joint Statement

All Included in the ASM3 Report!

Project information

Each submission includes detailed Project information

- Duration, Staff involved, Keywords, …
- Location, Collaborators, ASM Themes, …



Appendix 2 – Project Deliverables Contributing to the ASM Themes/Goals

Guidelines for submitting project deliverables, updates and new initiatives for ASM3

In the joint Statement from ASM2, parties agreed on a number of important issues needing stronger collaboration. To map the progress since ASM2, we ask the signatory parties, participating Indigenous Peoples and International Science Organizations, to document their major international activities that have contributed to the goals identified from ASM2.

The information submitted will show where significant activity has occurred, achievements have been accomplished, and what areas may require additional resources for progress. The information will contribute to the ASM3 discussions and research summary report indicating project progress and highlighting opportunities for increased collaboration and support. The report will be provided to ASM3 participants in addition to being accessible on the ASM3 website. The information will also be used as a foundation for a database outlining international Arctic research efforts which will provide a tool for scientists, Indigenous Peoples, regional governments and other stakeholders to monitor progress and identify potential collaborators.

To help focus and simplify input so it can be more efficiently synthesized, information on previously submitted projects (referred to as deliverables for past ASMs) will be sent back to submitting parties in standardized forms. What is mainly required for updates is to verify information is still current, include a short statement on progress since AMS2, and help to categorize (via check boxes) project efforts. The following is an example of the questions that will be asked.

Update on Deliverables/Projects Submitted to ASM2

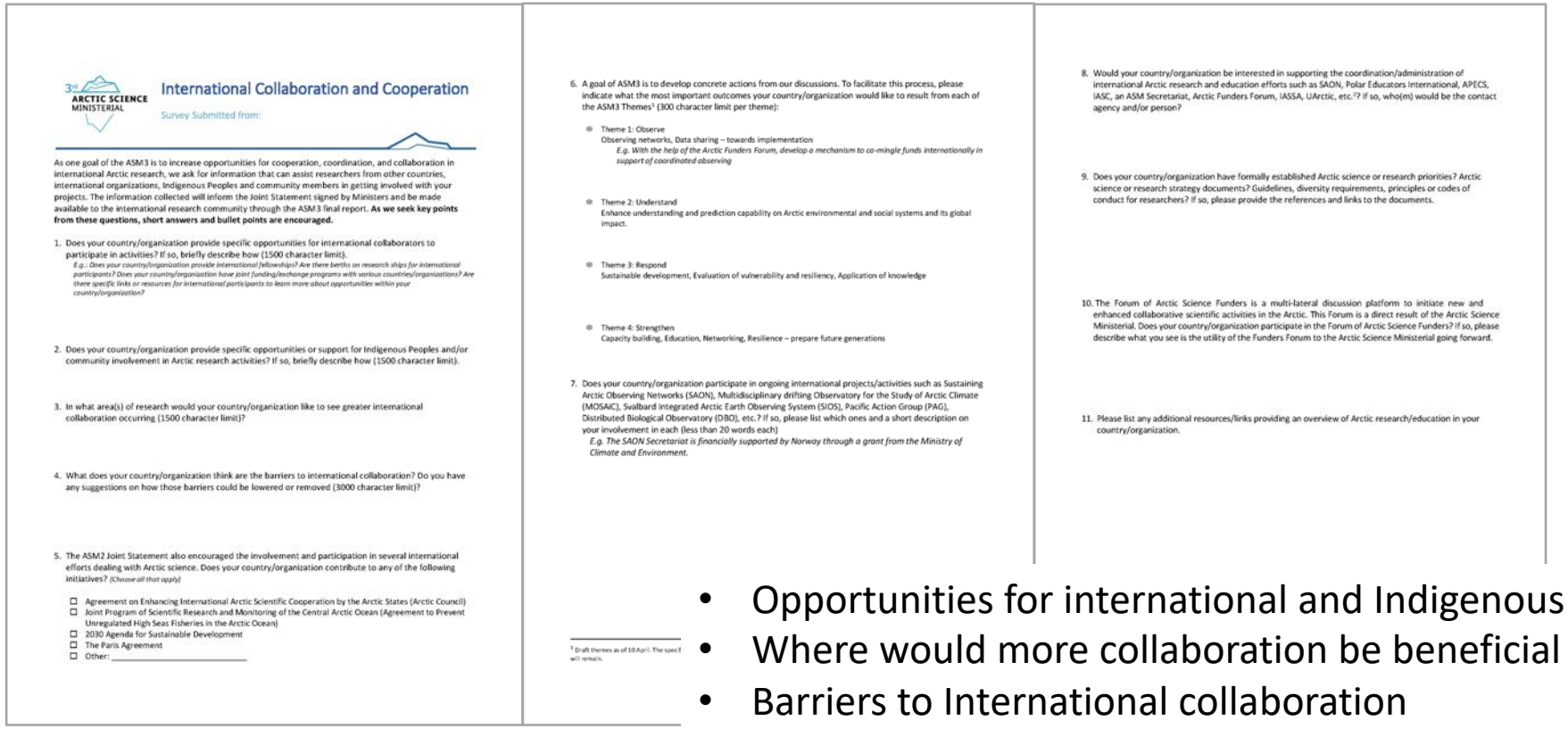
1. Project Title
2. Funding Program(s) and/or Organization(s)
3. Coordinating organization(s)
4. Name of main contact person
5. Contact email address
6. Summary of Project/Project Goal (300 character limit)
7. Description of the deliverable/project (3000 character limit)
8. Website
9. Duration of Deliverable/Project (YYYY to YYYY)
10. Personnel/Staff Involved
    Note: The purpose of this question is to try to understand the size of the project. In comparing across countries and currencies, the number of people can be more reflective of this than comparing budgets. Please include researchers, technicians, and project managers.
    ☐ 1 - 10 ☐ 11 - 20 ☐ 20 - 50 ☐ 50 + ☐ Unknown
11. What is the diversity of project personnel/staff (E.g. gender, career stage, Indigenous representation) (1500 character limit):

12. Stage of Project Development
    ☐ Proposed ☐ Early Planning ☐ On going ☐ Final Stages ☐ Finished
13. Next steps for the project if in the proposed, early planning, or ongoing stages (1500 character limit).
14. Major progress/development(s) since ASM2 (1500 character limit)
    Note: For national projects contributing to major international projects such as SAON, MOSAiC, and YOPP, please describe your countries direct contributions/progress.
15. Are there opportunities for new collaborators to join? If so, please describe them.
16. Collaborating Countries/Governments. *(Choose all that apply)*
    ☐ Austria ☐ Belgium ☐ Canada ☐ China ☐ Czech Republic ☐ Denmark ☐ Faroe Islands ☐ Finland ☐ France ☐ Germany ☐ Greenland ☐ Iceland ☐ India ☐ Italy ☐ Japan ☐ Netherlands ☐ Norway ☐ Poland ☐ Portugal ☐ Republic of Korea ☐ Russia ☐ Singapore ☐ Spain ☐ Sweden ☐ Switzerland ☐ UK ☐ USA ☐ EU ☐ Other(s) _____
17. Location of Project *(Choose all that apply)*
    ☐ Global ☐ Polar in General ☐ Arctic in General ☐ Sub-Arctic in General ☐ Alaska in General ☐ Alaskan Arctic ☐ Canadian Arctic in General ☐ Yukon ☐ Northwest Territories ☐ Nunavut ☐ Nunavik ☐ Labrador ☐ Greenland ☐ Iceland in General ☐ Icelandic Arctic ☐ Faroe Islands ☐ Norway in General ☐ Norwegian Arctic ☐ Svalbard ☐ Sweden in General ☐ Swedish Arctic ☐ Finland in General ☐ Finish Arctic ☐ Russian Arctic in General ☐ Eastern Siberia ☐ Western Siberia ☐ Arctic Ocean in General ☐ Central Arctic Ocean ☐ Bering Sea ☐ Chukchi Sea ☐ Beaufort Sea ☐ Hudson Bay ☐ Labrador Sea ☐ Davis Strait ☐ Baffin Bay ☐ Denmark Strait ☐ Norwegian Sea ☐ Greenland Sea ☐ Barents Sea ☐ Kara Sea ☐ Laptev Sea ☐ East Siberian Sea ☐ Sea of Okhotsk ☐ North Pacific Ocean ☐ North Atlantic Ocean ☐ No Geographic Orientation ☐ Other Regions_____

12. Stage of Project Development
    Proposed / Early Planning / On Going / Final Stages / Finished
13. Next steps for the project if in the proposed, early planning or ongoing stages (1500 character limit):
    Within EDU-ARCTIC.PL in the next year we are planning to organise series of webinars and lectures, second edition of the Arctic competition for Polish society, two expeditions to Svalbard, Polar Festival and 3d mapping (multimedia presentation) about polar research.
    Within EDU-ARCTIC2 we are planning preparation of 40 educational packages dedicated to polar topics (to be used by secondry
14. Major progress/developments since ASM2 (1500 character limit):
    Major developments consist of:
    - organisation of 90 webinars for 2441 participants;
    - organisation of 5 open lectures, 3 lectures for third age universities, 7 workshops for children universities for 2676 participants;
    - elaboration of 20 popular science articles and 10 expert videos dedicated to polar regions and scientific investigations;
    - organisation of Arctic competition for 3 age categories.
    Additionally, preperation of the proposal to EEA call suceeded in granting EDU-ARCTIC2, which started in 2020.
15. Are there opportunities for new collaborators to join? If so, please describe them. (1500 character limit)
    In the ongoing projects the partnership is fixed and new partners cannot join the consortium. However, parties interested in collaboration or sharing the experience and educational materials are very welcome to contact us in order to establish new cooperation and initiate new educational initiatives in this field.
16. Collaborating Countries/Governments *(Choose all that apply)*
    ☐ Austria ☐ Belgium ☐ Canada ☐ China ☐ Czech Republic ☐ Denmark ☐ Faroe Islands ☑ Finland ☐ France ☐ Germany ☐ Greenland ☐ Iceland ☐ India ☐ Italy ☐ Japan ☐ Netherlands ☑ Norway ☑ Poland ☐ Portugal ☐ Republic of Korea ☐ Russia ☐ Singapore ☐ Spain ☐ Sweden ☐ Switzerland ☐ UK ☐ USA ☐ EU ☐ Other(s):
17. Location of Project *(Choose all that apply)*
    ☐ Global ☐ Polar in General ☐ Arctic in General ☐ Sub-Arctic in General ☐ Alaska in General ☐ Alaskan Arctic ☐ Canadian Arctic in General ☐ Yukon ☐ Northwest Territories ☐ Nunavut ☐ Nunavik ☐ Labrador ☐ Greenland ☐ Iceland in General ☐ Icelandic Arctic ☐ Faroe Islands ☑ Norway in General ☐ Norwegian Arctic ☐ Svalbard ☐ Sweden in General ☐ Swedish Arctic ☐ Finland in General ☐ Finish Arctic ☐ Russian Arctic in General ☐ Eastern Siberia ☐ Western Siberia ☐ Arctic Ocean in General ☐ Central Arctic Ocean ☐ Bering Sea ☐ Chukchi Sea ☐ Beaufort Sea ☐ Hudson Bay ☐ Labrador Sea ☐ Davis Strait ☐ Baffin Bay ☐ Denmark Strait ☐ Norwegian Sea ☐ Greenland Sea ☐ Barents Sea ☐ Kara Sea ☐ Laptev Sea ☐ East Siberian Sea ☐ Sea of Okhotsk ☐ North Pacific Ocean ☐ North Atlantic Ocean ☐ No Geographic Orientation ☑ Other Regions Poland

18. Keywords describing the Deliverable/Project *(Choose all that apply)*
    ☐ adaptation ☐ art ☐ atmosphere ☐ atmospheric sciences ☑ biodiversity ☑ biology ☐ capacity building ☐ carbon ☐ change ☑ climate ☐ collaboration ☑ communication ☐ community ☐ community driven ☐ coordination ☑ cryosphere ☑ culture ☐ data management ☐ disease ☑ ecology ☐ economic development ☑ ecosystems ☑ education ☐ fisheries ☐ food security ☐ forecasts ☐ freshwater ☐ geological sciences ☑ geophysics ☐ geopolitics ☐ glaciers ☐ global ☑ greenhouse gases ☐ history ☐ human & health sciences ☐ humanities ☑ ice sheets ☐ indigenous Knowledge ☑ indigenous Peoples ☐ industry ☐ infrastructure ☐ instrument development ☐ knowledge ☐ land ☐ languages ☐ law ☐ mapping ☐ marine ☐ mitigation ☐ modelling ☑ monitoring ☑ observation ☐ oceanography ☑ outreach ☐ permafrost ☐ policy ☐ pollution ☐ prediction ☐ remote sensing/GIS ☐ resilience ☐ resources ☐ satellites ☑ sea ice ☐ snow ☐ social sciences ☐ society ☐ space physics ☐ stakeholders ☐ standardize ☐ subsistence (activities) ☐ sustainability ☐ technology ☐ tourism ☐ vulnerability ☐ water security ☑ weather ☐ well-being ☑ wildlife ☐ Other:
19. Does the project include *(Choose all that apply)*:
    ☑ Natural sciences ☐ Social sciences ☐ Arts & Humanities ☐ Indigenous Knowledge ☐ Community-driven research/monitoring ☑ Education/Capacity Building ☑ Outreach
20. If this Deliverable/Project was submitted for ASM1, which theme does it most closely relate to? *(Choose one)*
    ☐ Identifying Arctic-Science Challenges and Their Regional and Global Implications
    ☐ Strengthening and Integrating Arctic Observations and Data Sharing
    ☐ Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and to Shape Global Responses
    ☐ Empowering Citizens through Science Technology, Engineering, and Mathematics (STEM) Education Leveraging Arctic Science
    ☑ Not submitted to ASM1 / Do not know

ASM3 Collaboration Survey



International Collaboration and Cooperation

Survey Submitted from:

As one goal of the ASM3 is to increase opportunities for cooperation, coordination, and collaboration in international Arctic research, we ask for information that can assist researchers from other countries, international organizations, Indigenous Peoples and community members in getting involved with your projects. The information collected will inform the Joint Statement signed by Ministers and be made available to the international research community through the ASM3 final report. **As we seek key points from these questions, short answers and bullet points are encouraged.**

1. Does your country/organization provide specific opportunities for international collaborators to participate in activities? If so, briefly describe how (1500 character limit).
   E.g.: Does your country/organization provide international fellowships? Are there berths on research ships for international participants? Does your country/organization have joint funding/exchange programs with various countries/organizations? Are there specific links or resources for international participants to learn more about opportunities within your country/organization?
2. Does your country/organization provide specific opportunities or support for Indigenous Peoples and/or community involvement in Arctic research activities? If so, briefly describe how (1500 character limit).
3. In what area(s) of research would your country/organization like to see greater international collaboration occurring (1500 character limit)?
4. What does your country/organization think are the barriers to international collaboration? Do you have any suggestions on how those barriers could be lowered or removed (3000 character limit)?
5. The ASM2 Joint Statement also encouraged the involvement and participation in several international efforts dealing with Arctic science. Does your country/organization contribute to any of the following initiatives? *(Choose all that apply)*
   - ☐ Agreement on Enhancing International Arctic Scientific Cooperation by the Arctic States (Arctic Council)
   - ☐ Joint Program of Scientific Research and Monitoring of the Central Arctic Ocean (Agreement to Prevent Unregulated High Seas Fisheries in the Arctic Ocean)
   - ☐ 2030 Agenda for Sustainable Development
   - ☐ The Paris Agreement
   - ☐ Other: _____
6. A goal of ASM3 is to develop concrete actions from our discussions. To facilitate this process, please indicate what the most important outcomes your country/organization would like to result from each of the ASM3 Themes[1] (300 character limit per theme):
   - ❄ Theme 1: Observe
     Observing networks, Data sharing – towards implementation
     E.g. With the help of the Arctic Funders Forum, develop a mechanism to co-mingle funds internationally in support of coordinated observing
   - ❄ Theme 2: Understand
     Enhance understanding and prediction capability on Arctic environmental and social systems and its global impact.
   - ❄ Theme 3: Respond
     Sustainable development, Evaluation of vulnerability and resiliency, Application of knowledge
   - ❄ Theme 4: Strengthen
     Capacity building, Education, Networking, Resilience – prepare future generations
7. Does your country/organization participate in ongoing international projects/activities such as Sustaining Arctic Observing Networks (SAON), Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC), Svalbard Integrated Arctic Earth Observing System (SIOS), Pacific Action Group (PAG), Distributed Biological Observatory (DBO), etc.? If so, please list which ones and a short description on your involvement in each (less than 20 words each)
   E.g. The SAON Secretariat is financially supported by Norway through a grant from the Ministry of Climate and Environment.

[1] Draft themes as of 10 April. The specif
will remain.

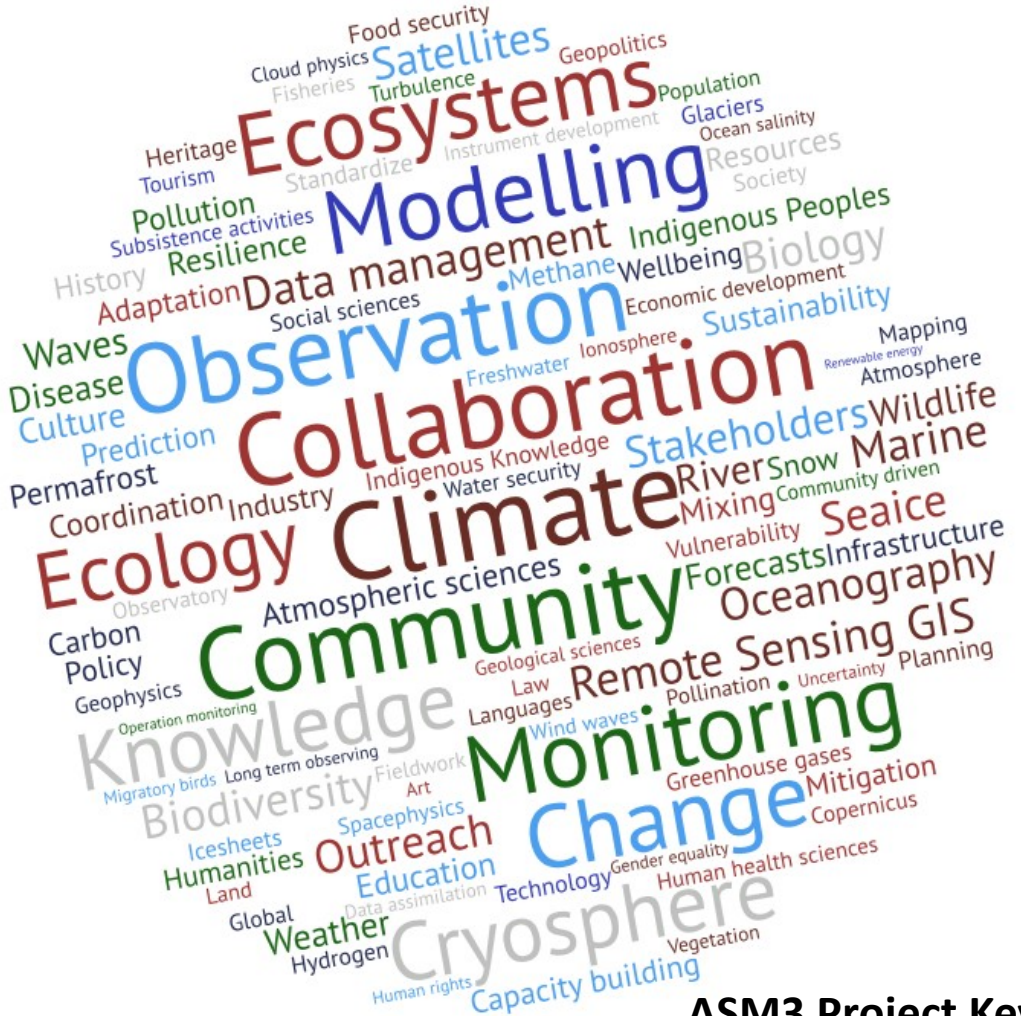
8. Would your country/organization be interested in supporting the coordination/administration of international Arctic research and education efforts such as SAON, Polar Educators International, APECS, IASC, an ASM Secretariat, Arctic Funders Forum, IASSA, UArctic, etc.[2]? If so, who(m) would be the contact agency and/or person?
9. Does your country/organization have formally established Arctic science or research priorities? Arctic science or research strategy documents? Guidelines, diversity requirements, principles or codes of conduct for researchers? If so, please provide the references and links to the documents.
10. The Forum of Arctic Science Funders is a multi-lateral discussion platform to initiate new and enhanced collaborative scientific activities in the Arctic. This Forum is a direct result of the Arctic Science Ministerial. Does your country/organization participate in the Forum of Arctic Science Funders? If so, please describe what you see is the utility of the Funders Forum to the Arctic Science Ministerial going forward.
11. Please list any additional resources/links providing an overview of Arctic research/education in your country/organization.

- Opportunities for international and Indigenous participation
- Where would more collaboration be beneficial
- Barriers to International collaboration
- National Arctic Research Priorities
- Additional resources / sources of information

Project information

- ASM1: 229 Projects
- ASM2: 221 Projects
- ASM3: 177 Updates, 257 New Projects

434 Projects submitted for ASM3



ASM3 Project Key Words

Project information (statistics)

Compiled all information submitted:

- Project Updates from ASM2
- New Project for ASM3

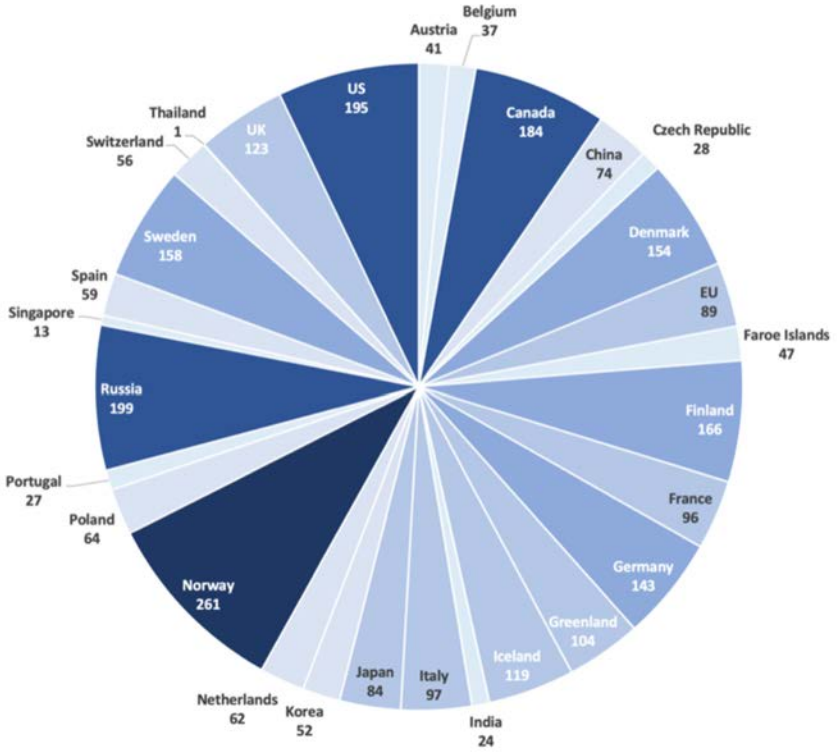
Country	Project Updates	New Projects	Total Submitted
Canada	10	4	14
China	13	1	14
Czech Republic	0	13	13
Denmark	7	12	19
Finland	8	2	10
France	3	1	4
Germany	5	4	9
Iceland	0	19	19
India	5	0	5
Italy	14	10	24
Japan	12	19	31
The Netherlands	2	2	4
Norway	18	28	46
Poland	3	0	3
Portugal	3	1	4
Republic of Korea	7	0	7
Russia	0	64	64
Singapore	7	2	9
Spain	5	7	12
Switzerland	0	1	1
Thailand	-	1	1
UK	4	10	14
USA	18	18	36
EU	16	9	25

Indigenous Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
ICC	4	0	4
Saami Council	4	0	4

International Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
AMAP	-	2	2
APECS	0	2	2
CAFF	-	4	4
GEO	0	1	1
IASC	1	5	6
IASSA	2	3	5
ICES-PICES	2	0	2
INTERACT	1	0	1
PEI	-	3	3
SAON	0	1	1
SDWG	0	6	6
UArctic	1	0	1
UNEP	1	1	2
WMO	0	1	1
Total Submitted	177	257	434

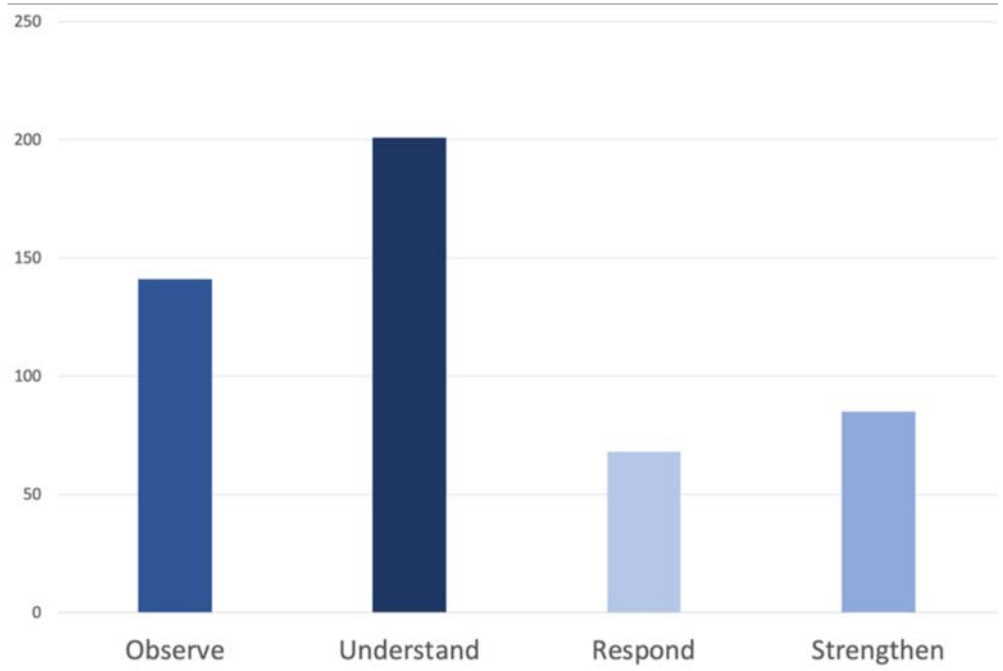
Project information (statistics)

Project Collaborations by country



Number of Times a Country was Listed as a Collaborator on Projects Submitted by Countries/EU to ASM3.

Project Submitted to the ASM3 Themes



Number of ASM3 Projects Submitted by all Participants to Each Theme

Ministerial Highlights from Tokyo

Hajime Kimura

Ministry of Education, Culture, Sports, Science and Technology, Japan

ASM3 Organizing Committee

Ministerial Highlights from Tokyo

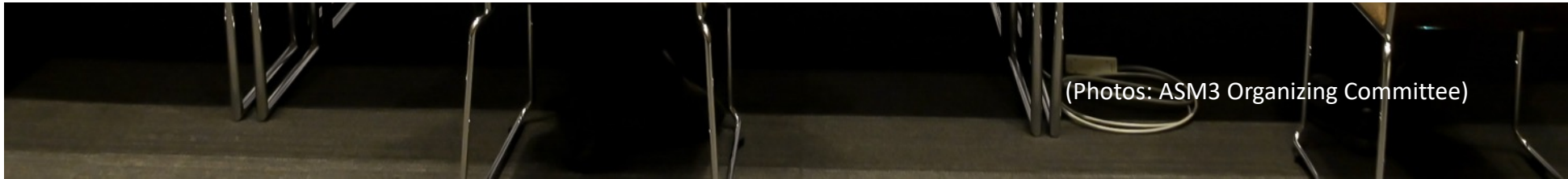
Hajime Kimura

Ministry of Education, Culture, Sports, Science and Technology, Japan

ASM3 Organizing Committee

3rd ARCTIC SCIENCE MINISTERIAL

8 - 9 May 2021
Toranomon Hills Forum
Tokyo, Japan



(Photos: ASM3 Organizing Committee)

ASM3 Ministerial Welcome Video

3rd ARCTIC SCIENCE MINISTERIAL

Program

8 May 2021

19:00-22:00 JST
10:00-13:00 UTC

DAY 1

19:00	**Opening**
	Welcoming address • HAGIUDA Koichi, Minister of Education, Culture, Sports, Science and Technology, Japan • Lilja Alfreðsdóttir, Minister of Education, Science and Culture, Iceland Reporting from Science Advisory Board
19:40	**Theme 1: Observe**
	Introduction by Science Advisory Board Countries/ Indigenous Peoples' Organizations statements General discussion
20:50	**Theme 2: Understand**
	Introduction by Science Advisory Board Countries/ Indigenous Peoples' Organizations statements General discussion
21:50	**Closing of Day 1**
	Group Photo

3rd ARCTIC SCIENCE MINISTERIAL

Program

9 May 2021

19:00-22:00 JST
10:00-13:00 UTC

DAY 2

19:00	**Opening of Day 2**
	Keynote speech
19:25	**Theme 3: Respond**
	Introduction by Science Advisory Board
	Countries/ Indigenous Peoples' Organizations statements
	General discussion
20:30	**Theme 4: Strengthen**
	Introduction by Science Advisory Board
	Countries/ Indigenous Peoples' Organizations statements
	General discussion
21:35	**Closing**
	Joint Statement presentation
	Signing of the Joint Statement
	Closing remarks
22:00	**End of the Ministerial**

Role of the Science Advisory Board

Reporting from Science Advisory Board co-chairs
Icelandic Representative: Embla Eir Oddsdóttir (Icelandic Arctic Cooperation Network)
Japanese Representative: Dr. ENOMOTO Hiroyuki (National Institute of Polar Research, Japan)

Introduction by Science Advisory Board
Observe Arctic Observing Summit (AOS) Representative: Dr. Hajo Eicken (International Arctic Research Center, University of Alaska Fairbanks)
Understand Association of Polar Early Career Scientists (APECS) Representative: Dr. Mia Bennett (The University of Hong Kong)
Respond Icelandic Representative: Embla Eir Oddsdóttir (Icelandic Arctic Cooperation Network)
Strengthen IASSA Representative: Dr. Andrey Petrov (The University of Northern Iowa)

Countries / Indigenous Peoples' Organizations Statements

Observe

India, Inuit Circumpolar Council (ICC), Italy, Japan, Republic of Korea, Portugal, Russian Federation, Sweden, United Kingdom

Understand

Austria, Belgium, China, Denmark, France, Germany, Gwich'in Council International (GCI), Switzerland, United States

Respond

Arctic Athabaskan Council (AAC), Faroe Islands, Finland, Greenland, Poland, Russian Association of Indigenous Peoples of the North (RAIPON), Spain

Strengthen

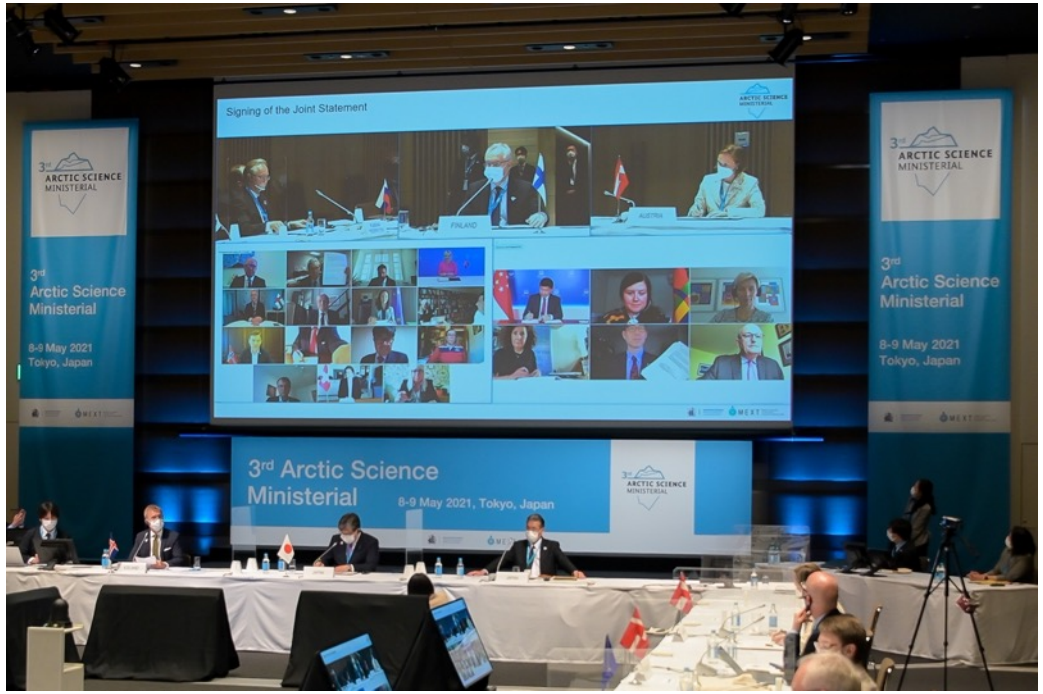
Aleut International Association (AIA), Canada, Czech Republic, European Union, Iceland, Netherlands, Norway, Saami Council, Singapore

Keynote Speech from co-hosting countries

Japan: Dr. SUGIYAMA Shin (Hokkaido University)

Iceland: Dr. Joan Nymand Larsen (Stefánsson Arctic Institute)

Signing of the Joint Statement




3rd
ARCTIC SCIENCE
MINISTERIAL
3rd
Arctic Science
Ministerial
8-9 May 2021
Tokyo, Japan
MEXT

Looking Forward: ASM 4

Anton Vasiliev

Deputy Director of the Representative Office of the Russian State Hydrometeorological University,

ASM4 Russia Committee

ASM3 Final Outcomes

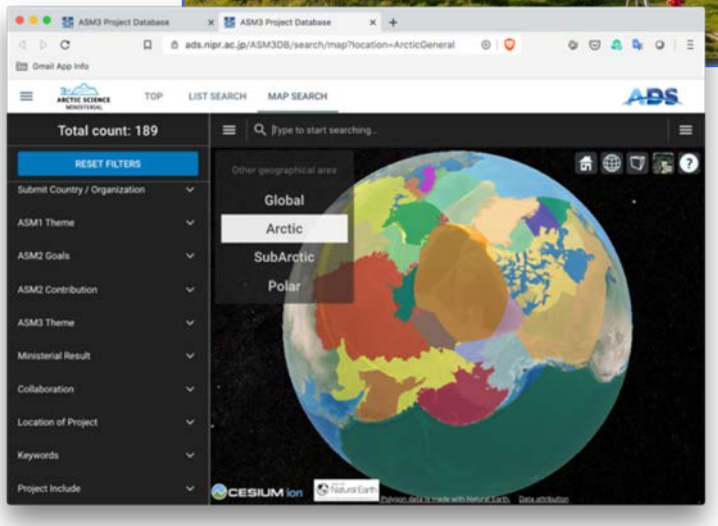
Ásgerður Kjartansdóttir

Ministry of Education, Science and Culture, Iceland

ASM3 Organizing Committee

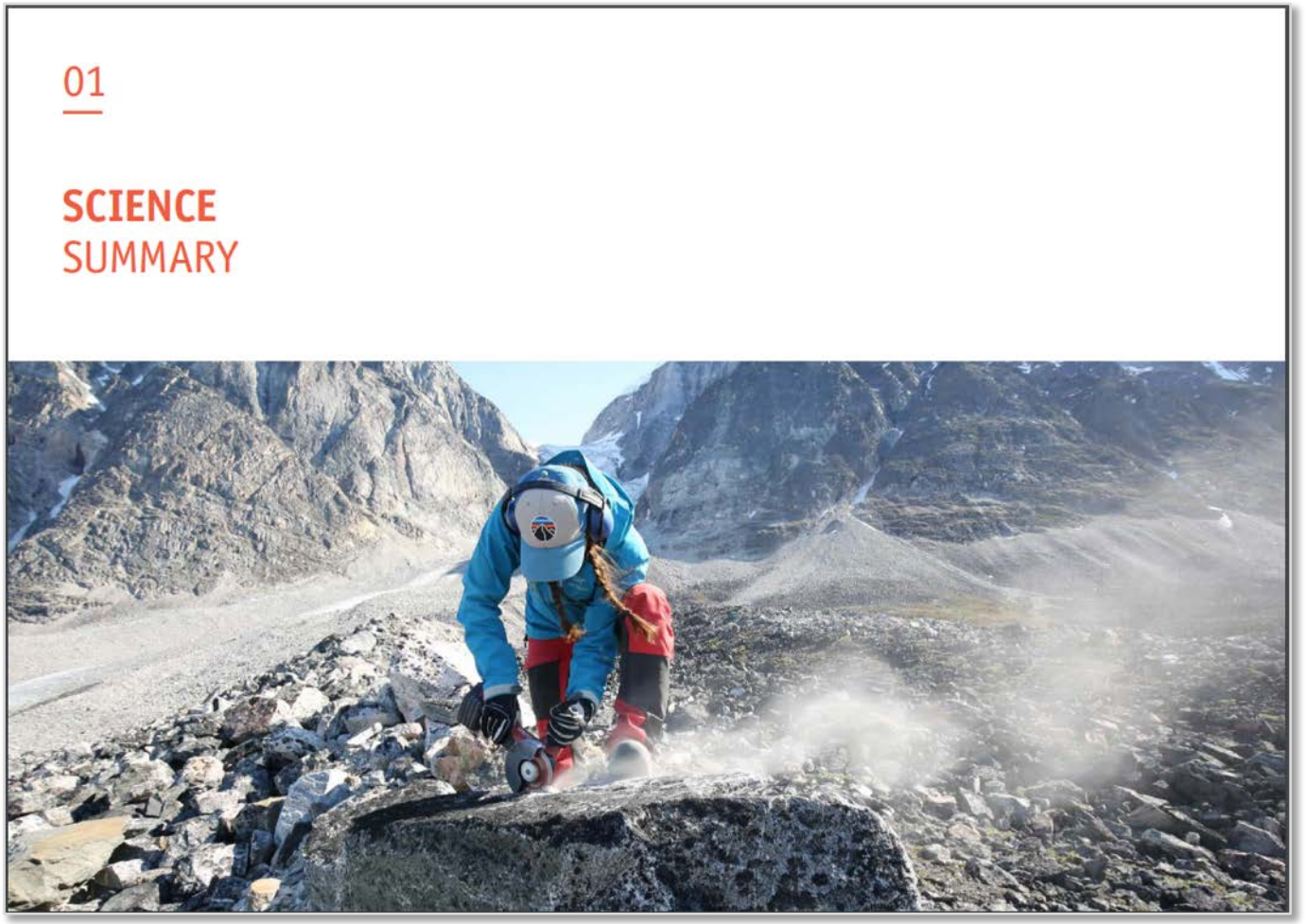
ASM3 Final Outcomes

- ASM3 Final **Report**
- **Joint Statement** of Ministers
- ASM3 **Online** Resources
  - ASM3 Project **Database**
  - International **Opportunities** Resources
  - Recordings of the all of **webinar series**



ASM3 Final Report

ASM3 Final Report



ASM3 Final Report

ASM3 Final Report

ASM3 Final Report

ASM3 Final Report

05

MOVING
FORWARD

ASM3 Science Summary

Jenny Baeseman

Baeseman Consulting & Services LLC

ASM2 and ASM3 Science Consultant

ASM3 Science Summary

Science Summary: 434 submitted projects by Themes


SCIENCE SUMMARY

KNOWLEDGE FOR A SUSTAINABLE ARCTIC
OBSERVE, UNDERSTAND, RESPOND, AND STRENGTHEN

ABOUT THIS DOCUMENT


SCIENCE SUMMARY

THEME 1: OBSERVE

IMPLEMENTING OBSERVING NETWORKS; DATA-SHARING


SCIENCE SUMMARY

OBSERVING SATELLITES AND NEW TECHNOLOGIES

All submitted projects were reviewed by SAB members:

- Evaluate the progress since ASM2, and
- Highlight some projects under each theme

ASM3 in Numbers

Figure 1. Keywords describing initiatives contributing to the ASM3 Themes

Country	Project Updates	New Projects	Total Submitted
Canada	10	4	14
China	13	1	14
Czech Republic	0	13	13
Denmark	7	12	19
Finland	8	2	10
France	3	1	4
Germany	5	4	9
Iceland	0	19	19
India	5	0	5
Italy	14	10	24
Japan	12	19	31
The Netherlands	2	2	4
Norway	18	28	46
Poland	3	0	3
Portugal	3	1	4
Republic of Korea	7	0	7
Russia	0	65	65
Singapore	7	2	9
Spain	5	7	12
Switzerland	0	1	1
Thailand	-	1	1
UK	4	10	14
USA	18	18	36
EU	17	8	25

Table 1. Projects Submitted per ASM3 Participating Country

Indigenous Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
ICC	4	0	4
Saami Council	4	0	4

International Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
AMAP	-	2	2
APECS	0	2	2
CAFF	-	4	4
GEO	0	1	1
IASC	1	5	6
IASSA	2	3	5
ICES/PICES	2	0	2
INTERACT	1	0	1
PEI	-	3	3
SAON	0	1	1
SDWG	0	6	6
UArctic	1	0	1
UNEP	1	1	2
WMO	0	1	1
Total Submitted	177	257	434

Table 2. Projects Submitted per ASM3 Participating Organizations.

ASM3 in Numbers

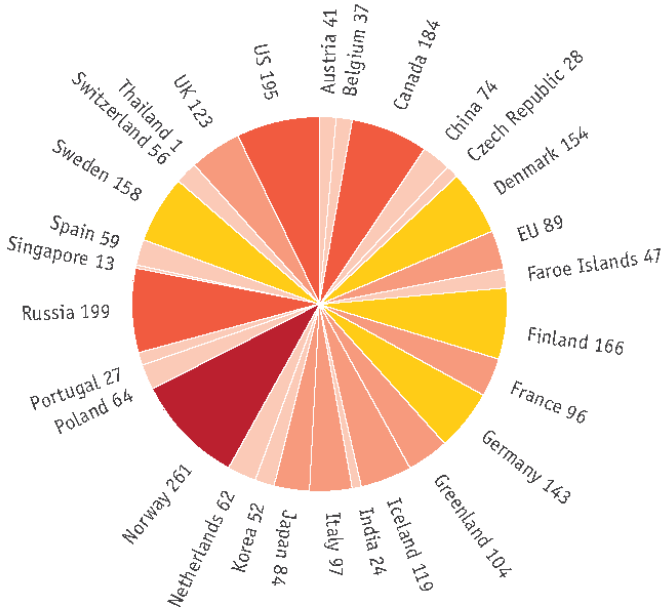


Figure 2. Number of Times a Country was Listed as a Collaborator on Projects Submitted by Countries/EU to ASM3

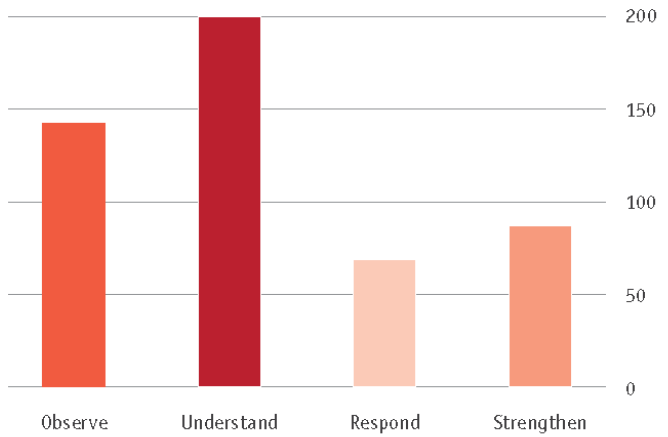


Figure 3. Number of SM3 Projects Submitted by all Participants to Each Theme

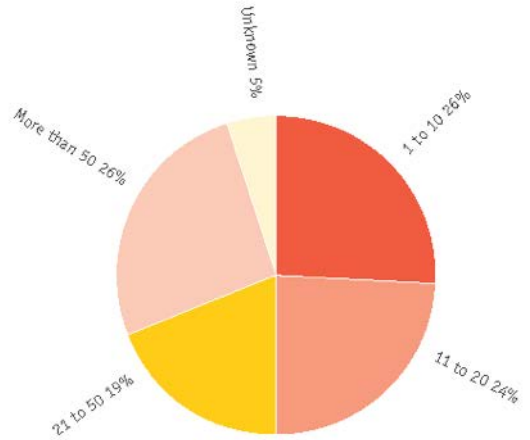


Figure 4. Number of Personnel involved in Projects Submitted by all Participants to ASM3

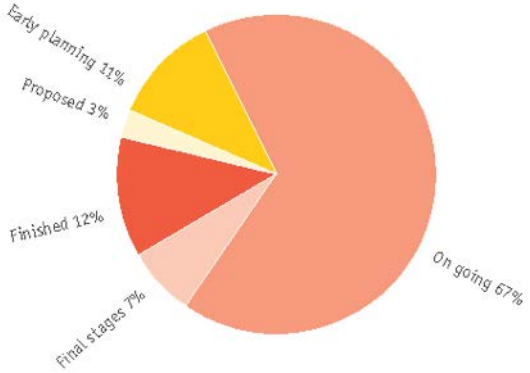


Figure 5. Stage of Projects Submitted to ASM3

ASM3 Research Overviews

ICELAND

POINTS OF CONTACT

THE MINISTRY OF EDUCATION, SCIENCE AND CULTURE
THE ICELANDIC CENTRE FOR RESEARCH
THE ICELANDIC ARCTIC COOPERATION NETWORK

ARCTIC RESEARCH POLICY AND GOALS

Iceland places great emphasis on international collaboration in science, innovation and education, and increased mobility of researchers. Iceland supports strengthened research cooperation with other nations in the Arctic region, protection of flora and fauna, observation capabilities and pollution prevention, as well as the rights and well-being of Arctic Indigenous peoples.

ARCTIC RESEARCH FUNDERS/INSTITUTIONS

The Icelandic government provides national competitive funds that support Icelandic research on physical, biological, geological, chemical, climate processes in and around Iceland, as well as research on cultural heritage, society, economy, public health and societal challenges.

The Icelandic Centre for Research (Rannís) administers these national funds, as well as Iceland's participation in international and EU funded education, research and innovation programmes such as the EU Framework Programme for Research and Innovation (Horizon 2020). For more information please refer to the newly published report: Mapping Arctic Research in Iceland.

Icelandic Science and Technology Policy Council provides strategic direction for both national and international collaboration in research and innovation

International Arctic Science Committee (IASC) in Akureyri, hosted by Rannís.

MAJOR ARCTIC RESEARCH AND EDUCATION/ CAPACITY BUILDING INITIATIVES

The Icelandic Meteorological Office, the University of Iceland and the National Power Company in Iceland and other agencies participate in research on the ongoing and future changes of glaciers in Iceland. The program involves monitoring of annual mass balance and changes of glacier terminus positions, mapping of glacier surfaces based on remote sensing from aircraft and satellites and projecting future changes with physical models. A large group of local people are involved in a long-standing community science initiative on the monitoring of the glaciers. This project utilizes the international GCW/CryoNet global cryosphere monitoring surface station network on the icecap Hofsjökull.

Iceland's Arctic Council Chairmanship (2019-2021) initiated collaboration between international research institutes, universities and the Arctic SDI to study surface elevation changes of glaciers in the Arctic based on the ArcticDEM. Additionally, the Icelandic Meteorological Office in cooperation with the national and international research community, will host the Cryosphere 2021 symposium. The symposium focuses on ongoing changes in all components of the Earth's cryosphere affecting the developed world, developing nations and Indigenous people.

The Marine and Freshwater Research Institute, with national and international universities and research institutes, researches the marine environment ecosystem including long-term monitoring of oceanographic conditions, primary and secondary production, and diversity and abundance of invertebrates, fish and marine mammals. Emphasis is on understanding how climate change impacts oceanographic condition and the marine biota.

The Stefansson Arctic Institute collaborates with the University of Iceland and other research institutes, nationally and internationally, on projects that address adaptation, resilience and impacts of climate change on Arctic societies.

Polar Law at the University of Akureyri is in interdisciplinary postgraduate program (LLM/MA/Diploma) drawing international law students from around the world

The Centre for Arctic Studies at the University of Iceland coordinates the university's Arctic research and education through its Arctic Initiative.

Audna, Technology Transfer Office, is a part of a Pan-Nordic collaboration network to bring scientific solutions and technology to respond to climate change in the Arctic.

5th International Polar Educators International Conference in Iceland in 2021, will promote the importance of natural science to Icelandic society through support from Icelandic educators.

The Arctic Circle Assembly in Iceland is the largest annual international gathering on the Arctic.

Carbfix Hellisheiði
Credit: Carbfix

Raising awareness and building capacity for science-based policy-making workshop (Rannís, APECS and AWI in October 2019). Credit: Álfrún G. Guðrúnardóttir, Rannís

The Icelandic Arctic Cooperation Network (IACN) facilitates cooperation amongst Icelandic public and private organizations, institutions, business and bodies involved in Arctic research, education, and innovation.

The Northern Research Forum (NRF) at the University of Akureyri provides an international platform for an effective dialogue on Arctic issues between members of the research community and a wide range of stakeholders.

The UArctic Congress will take place in Reykjavík in 2021 in conjunction with the Arctic Council Ministerial.

The SDWG Arctic Human Health Expert Group (AHHEG) and the **Social, Economic, and Cultural Expert Group (SECEG)** currently chaired by Iceland are leading research to identify the spread of COVID-19 and its impacts in the Arctic.

ARCTIC RESEARCH INFRASTRUCTURE

VESSELS

Iceland runs three ice-strengthened multi-purpose ocean vessels suitable for marine biological and oceanographic research as well as marine geophysical surveying.

- **R/V Árni Friðriksson** and **R/V Bjarni Sæmundsson** are operated by the Marine and Freshwater Research Institute and used for inshore and offshore research surveys.
- **Þór** is a multi-purpose vessel of the Icelandic Coast Guard equipped for a wide range of duties including hydrographic surveying and serves as a platform for a variety of research activities.

AIRCRAFT

Iceland operates two airplanes that are partly used for marine and glacier monitoring.

- **TF-SIF**, a Dash 8 aircraft of the Icelandic Coast Guard equipped with a wide range of surveillance sensors and a SAR radar, used for pack ice mapping, marine monitoring and glacier surface monitoring.
- **TF-FMS**, a Beechcraft 200 aircraft operated by the Icelandic Aviation Services, equipped with surface profiling C-band radar.

FIELD STATIONS

Grímsfjall field station of the Iceland Glaciological Society (www.jorfi.is) is in the centre of the 7700 km2 Vatnajökull glacier It hosts a variety of geophysical equipment that monitors the active volcanoes beneath the glacier as well as isostatic rebound due to glacier thinning. It also serves as a base for mass balance and other glaciological research on Vatnajökull.

The Rif Research Station (RRS) provides access to a research area in Melrakkaslétta, including Iceland's northernmost point. The area allows research and monitoring within the field of natural science (e.g. vegetation, bird life, freshwater biology, coastal ecosystems, geology and geomorphology). RRS is an INTERACT station and is being developed as one of three monitoring stations for the Circumpolar Biodiversity Monitoring Program (CBMP) under the Arctic Council Working Group, Conservation of Arctic Flora and Fauna (CAFF).

China-Iceland Arctic Observatory (CIAO) Is the result of collaboration between the Polar Research Institute of China and the Icelandic Research Centre and is in northern Iceland.

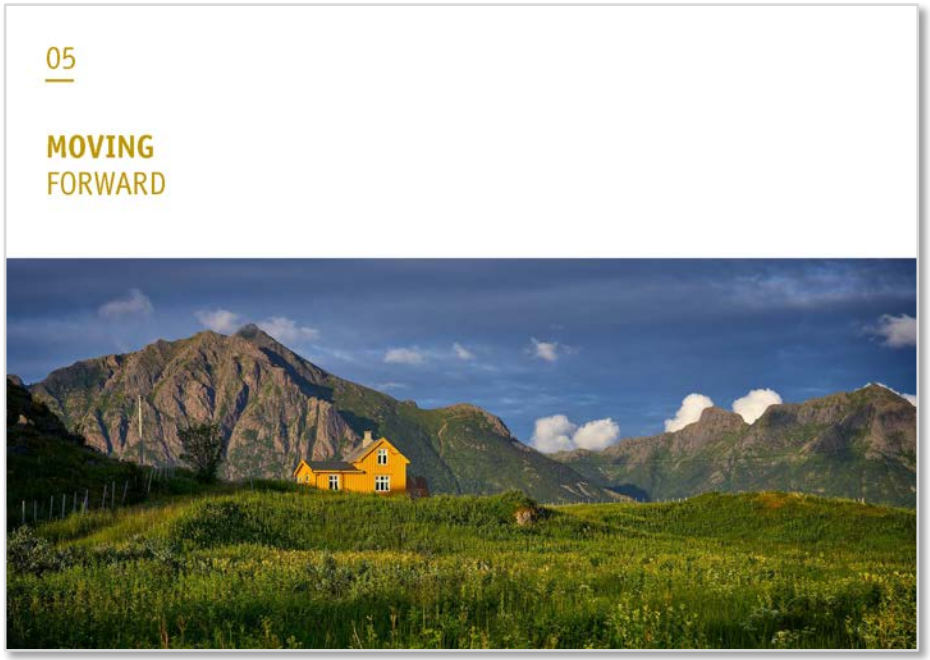
SUPERCOMPUTING

The Icelandic and Danish Met Offices operate a supercomputer in Iceland running numerical weather prediction models. This cooperation provides a basis for expanded weather and climate services in the Arctic on which integrated research on past and future climate change can build upon. This collaboration will be expanded in 2023 when the Netherlands and Ireland join the cooperation under the name of United Weather Center – West.

ICELAND

- Research Policy and Goals
- Funders/Institutions
- Research and Education/Capacity Building Initiatives
- Research Infrastructure

ASM3 Moving Forward



- Observing
- Research Planning
- Education and Outreach
- Indigenous Capacity Building
- International Efforts
- Next Steps

ASM3 Joint Statement

Lindsay Arthur

Ministry of Education, Science and Culture, Iceland

ASM3 Organizing Committee

ASM3 Joint Statement

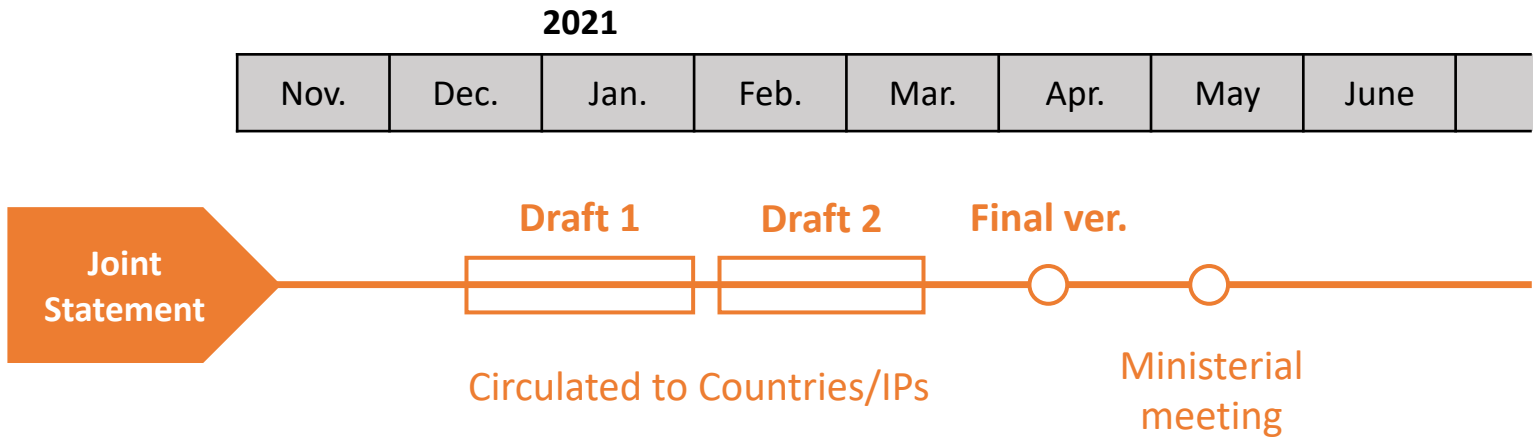
ASM3 Joint Statement

Draft 1: 15 December 2020 – 31 January 2021

Draft 2: 05 February – 15 March 2021

Adjustment period: 18 – 22 March 2021

Final version: 9 April 2021



ASM3 Joint Statement

Recommended Actions under each Themes, based on Submitted Project and Meeting Statements


JOINT STATEMENT

THIRD ARCTIC SCIENCE MINISTERIAL

Joint Statement of Ministers


2

UNDERSTAND: ENHANCING UNDERSTANDING AND PREDICTION CAPABILITY FOR ARCTIC ENVIRONMENTAL AND SOCIAL SYSTEMS, FOR THE GLOBAL IMPACT OF THESE CHANGES


4

STRENGTHEN: PREPARING THE NEXT GENERATION THROUGH CAPACITY BUILDING, EDUCATION, NETWORKING; AND RESILIENCE

You can download the Joint Statement from:
https://asm3.org/library/Files/ASM3_Joint_Statement.pdf

ASM3 Database and Online Resources

Tetsuo Sueyoshi

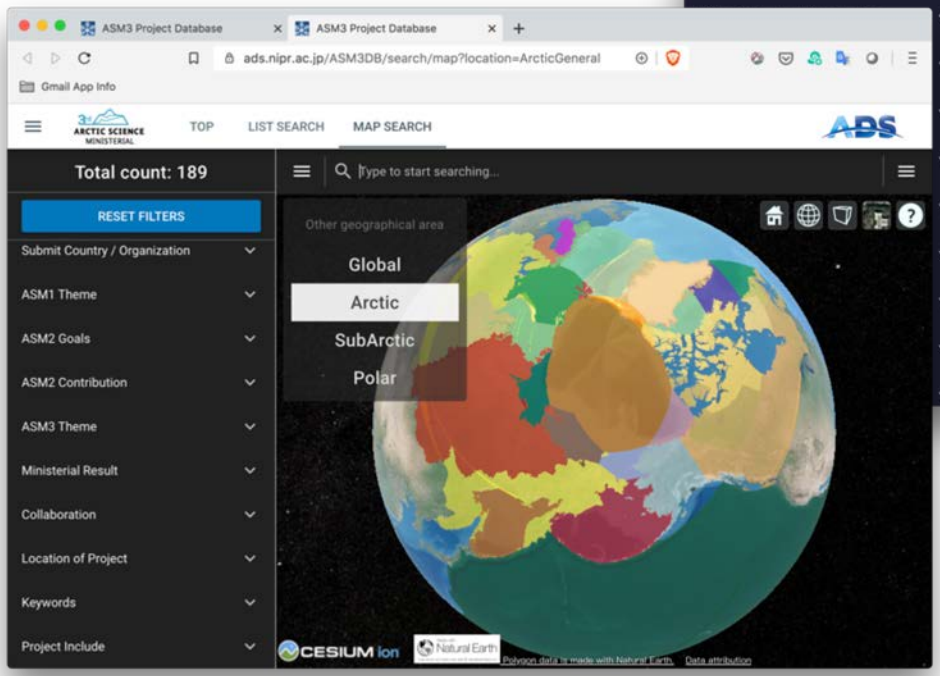
National Institute of Polar Research

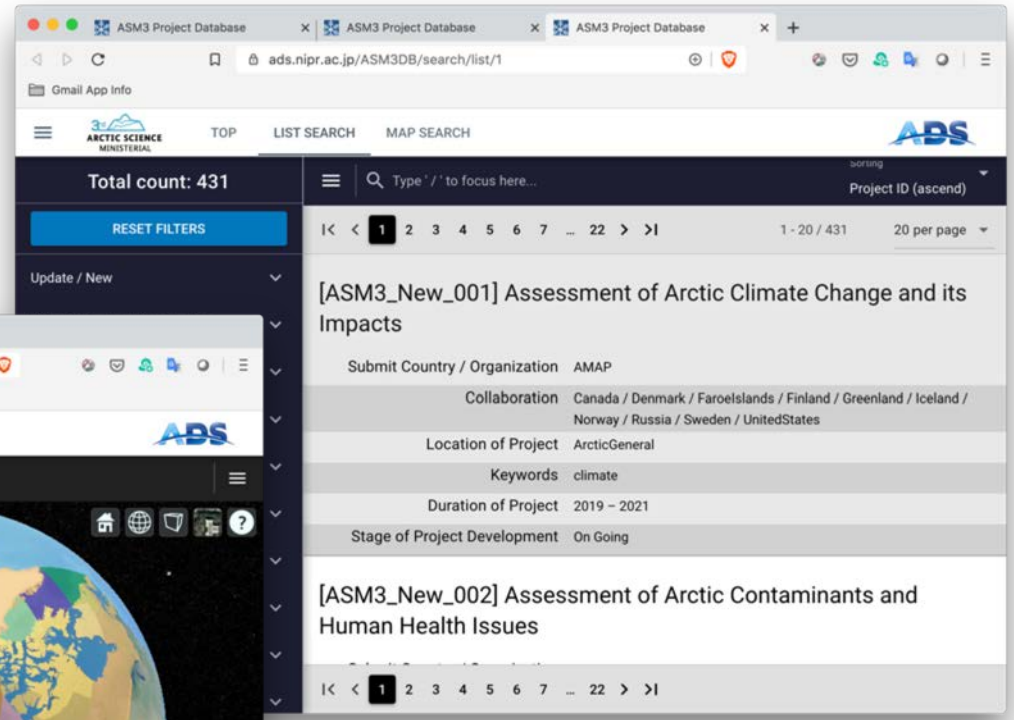
ASM3 Organizing Committee

ASM3 Project Database

- All projects can be searched from keywords, location, countries, etc.

  … using List/Map view search.





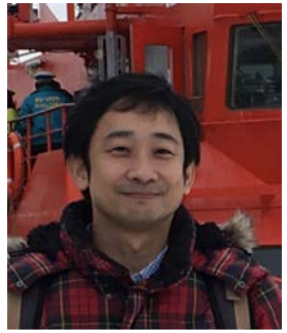
ASM3 Project Database

Original idea
Survey form

Jenny Baeseman

Hironori Yabuki

Database Construction
Checking data



Takeshi Sugimura

Keiko Iino

Yuji Kodama

User Manual
Webpage contents

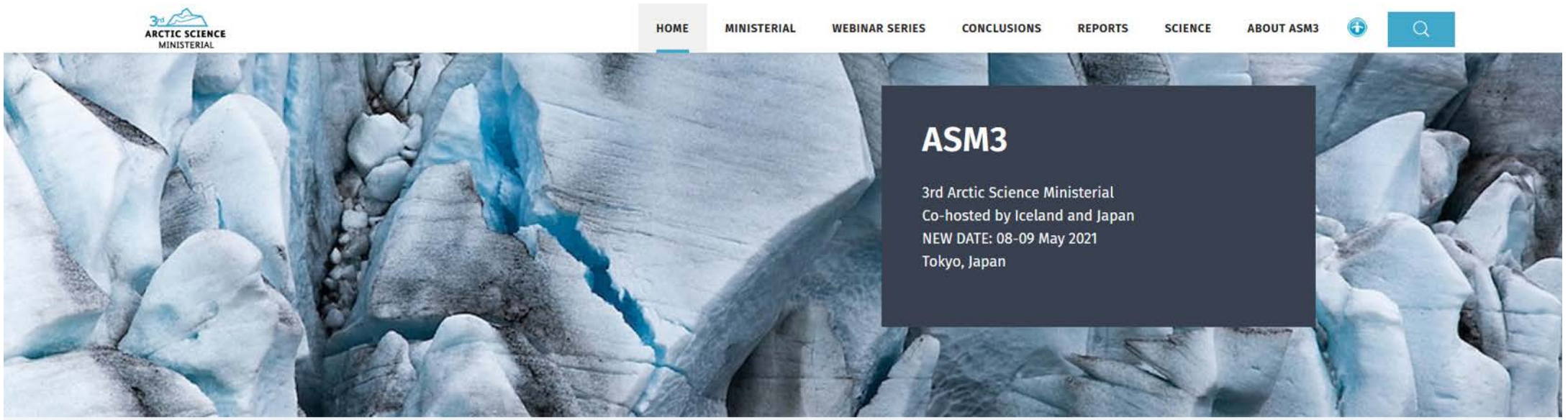
... and myself.

Science consultant
for ASM2 & ASM3

Arctic Data archive System (ADS)
In National Institute of Polar Research (NIPR)

ASM3 OC members

Updating asm3.org



Webinar Series

This webinar series is designed to increase transparency of the Arctic Science Ministerial

Concept Note

Since the last Arctic Science Ministerial in 2018, changes in the Arctic ecosystem and the

Briefing Meetings

Briefing meetings for embassies will take place throughout the planning process for

Updating asm3.org

- From “Preparation” to “Documentation”
  - Key Documents
  - Photo Gallery
  - Video Recordings:
    - Science Advisory Board presentations (Science Process, Theme Overviews)
    - Keynote Presentations
    - Ministerial Highlights
  - Webinar Series Archive
  - Online resources
  - ASM1 & ASM2 Documents

https://asm3.org

ASM3 Online Resources

International Collaboration and Cooperation Opportunities

Opportunities for Indigenous Peoples and Community Involvement in Arctic Research

National Arctic Policies

Including Additional Resources and Links

To assist in understand the Arctic Research Landscape, below is a list of various Arctic Research related policies from participating ASM3 countries and organizations, as well as links to additional information that may be useful in developing collaborations.

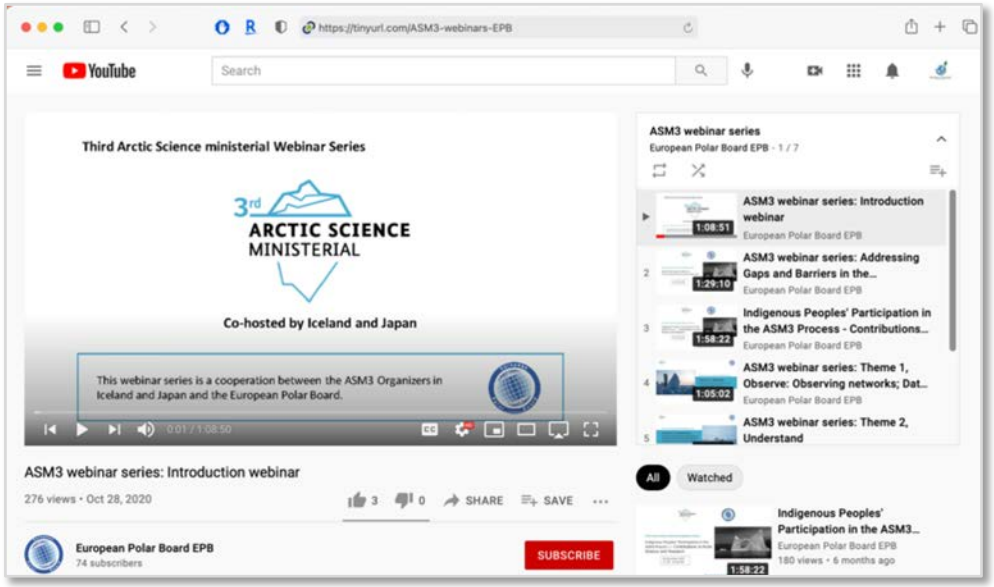
Austria

- In Austria, the Austrian Polar Research Institute (APRI) has been set up (with support of the Federal Ministry of Science and Research). The APRI is a research consortium that promotes and coordinates research and education in the area of polar sciences at the participating organizations. APRI currently comprises researchers from the University of Vienna, the University of Innsbruck, the University of Graz, the Central Institute of Meteorology and Geodynamics, and b.geos. The APRI involves 17 research groups, including about 50 scientists in one of the three research areas: Polar Ecology, Cryosphere & Climate, Social & Cultural Systems.
- https://www.polarresearch.at/

Canada

- Canada's Arctic and Northern research community is highly diverse and decentralized. A single, pan-Canadian research agenda for the region does not exist. However, key strategic and guiding

- Researchers looking for international funding
- Indigenous people looking for meaningful opportunities and funding sources
- National Arctic Policies
- Webinar Recordings, Slides and Transcripts



https://tinyurl.com/ASM3-webinars-EPB

ASM3 Webinar Series

Renuka Badhe

European Polar Board

ASM3 Webinar Series Organizing Committee

ASM3 Webinar Series

- Planned in response to disruption from the COVID-19 crisis as part of Community Engagement process
- 8 webinars over 9 months, starting Oct 2020
- Organised as a cooperation between the ASM3 Organizers in Iceland and Japan and the European Polar Board
- Webinar platform, technical and organisational support provided by the EPB

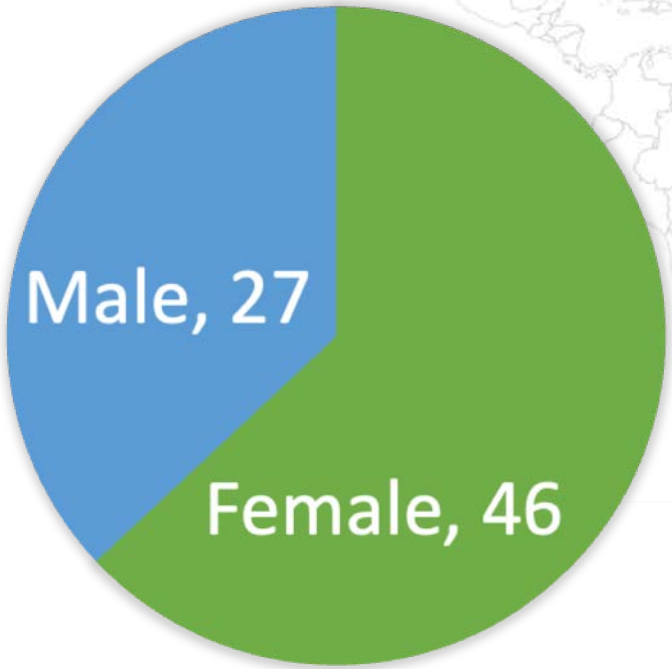
Webinar Themes

- Introductory webinar
- Gaps and Barriers
- Indigenous Perspectives
- Wrap-up webinar

ASM3 Themes

- Strengthen
- Respond
- Understand
- Observe

Webinar Speakers



500+ minutes
70+ Speakers
17 countries

1 ASM3 webinar series: Introduction webinar 1:08:51 European Polar Board EPB

2 ASM3 webinar series: Addressing Gaps and Barriers i... 1:29:10 European Polar Board EPB

3 Indigenous Peoples' Participation in the ASM3... 1:58:22 European Polar Board EPB

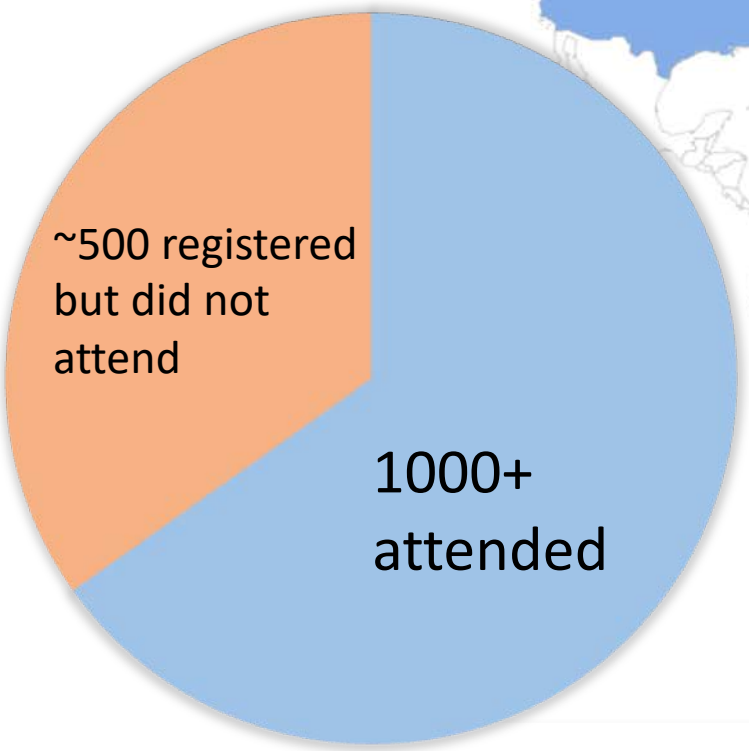
4 ASM3 webinar series: Theme 1, Observe: Observing networks;... 1:05:02 European Polar Board EPB

5 ASM3 webinar series: Theme 2, Understand 1:02:24 European Polar Board EPB

6 ASM3 webinar series: Theme 4, Strengthen 1:03:43 European Polar Board EPB

7 ASM3 webinar series: Theme 3, Respond 1:03:34 European Polar Board EPB

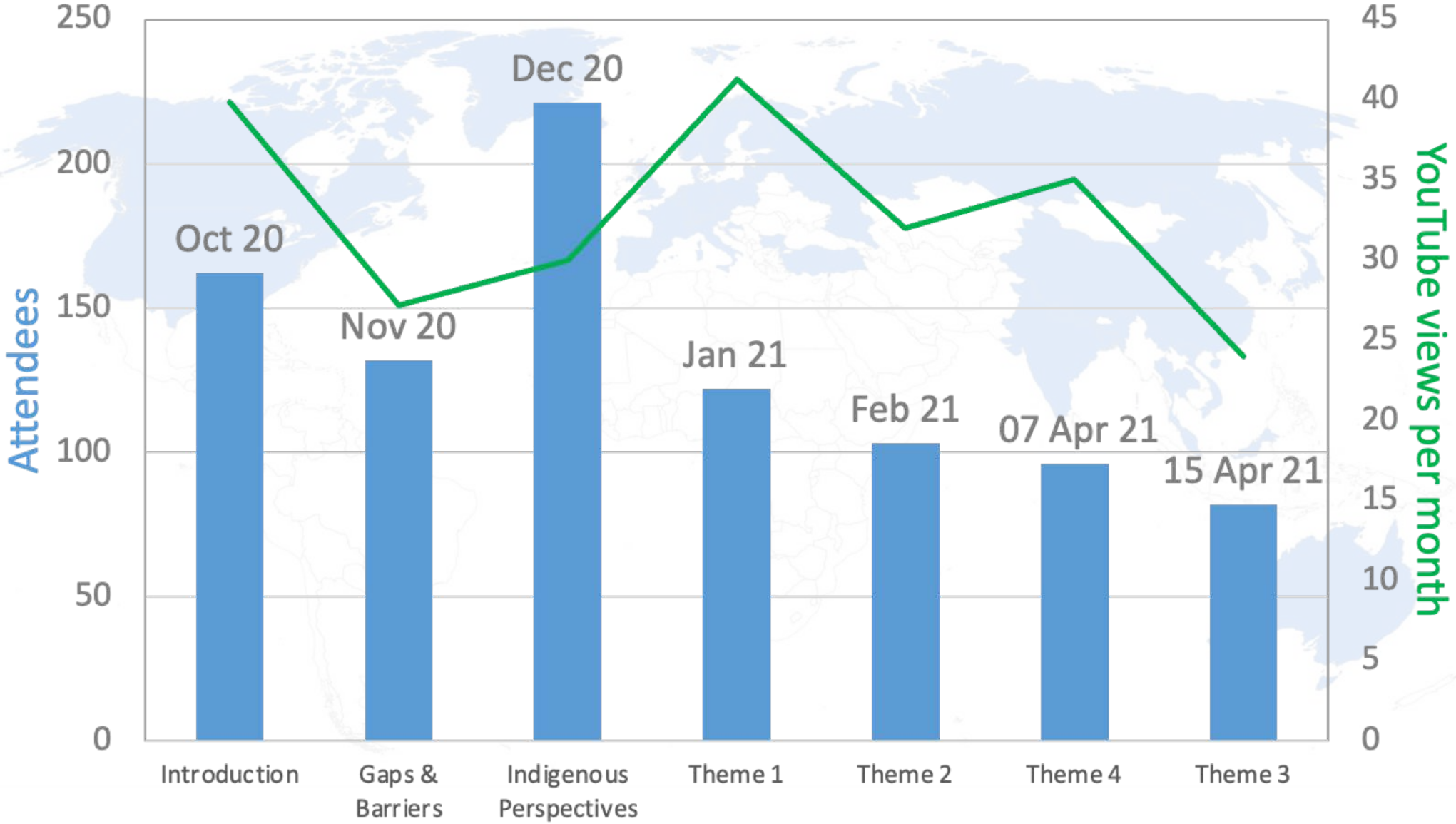
Webinar Attendees

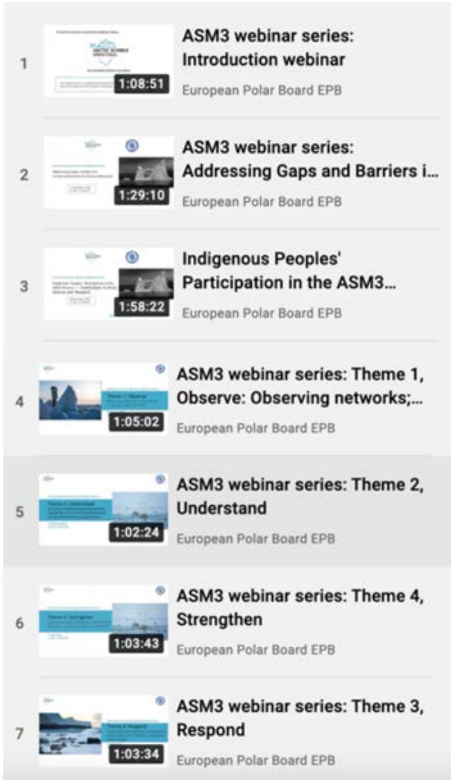


1500+ registrations

46 countries

Webinar and YouTube views





EPB team supporting the Webinars

Renuka Badhe

Joseph Nolan

Pjotr Elshout

Recommendations and lessons learnt

Webinars were very well received overall – lots of positive feedback

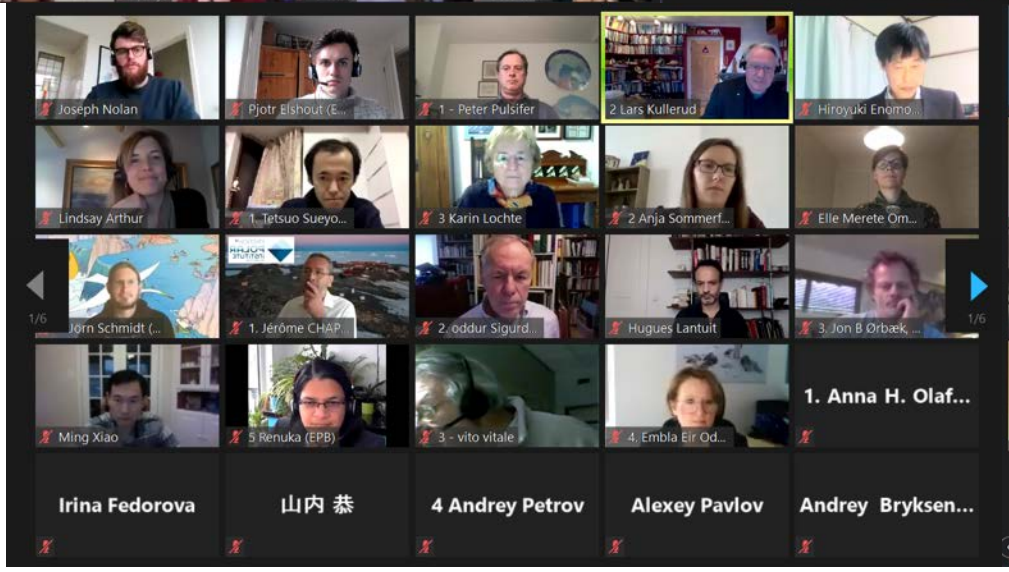
- Interactive format keeps audience involved better
- Accessibility measures – translations, time zones, internet/mobile connections, recording of webinar, transcripts
- Diversity of speakers – needs to be planned well in advance
  - Disciplines
  - Geographies – Arctic and non-Arctic
  - Career stages
  - Gender
- Expect the unexpected! Have some backup plans, and people ready to go.

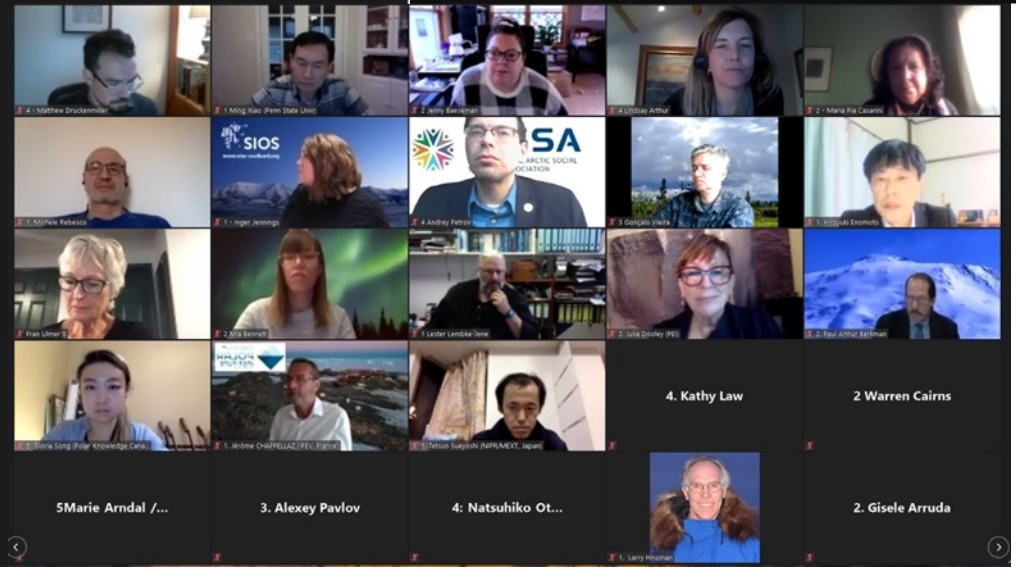
EPB would be happy to work with next ASM Organisers

3rd ARCTIC SCIENCE MINISTERIAL

Thank you!

European Polar Board





Questions & Answers

Third Arctic Science Ministerial Webinar Series

ASM3 Closing Webinar

Post-Ministerial Review:
Joint Statement and Actions

Please type any questions related to the webinar series in the Q&A box.

Any remaining questions may be sent to
ml-asm3@mext.go.jp

https://asm3.org

3rd ARCTIC SCIENCE MINISTERIAL

HOME | MINISTERIAL | WEBINAR SERIES | CONCLUSIONS | REPORTS | SCIENCE | ABOUT ASM3

ASM3

3rd Arctic Science Ministerial
Co-hosted by Iceland and Japan
NEW DATE: 08-09 May 2021
Tokyo, Japan

Webinar Series

This webinar series is designed to increase transparency of the Arctic Science Ministerial

Concept Note

Since the last Arctic Science Ministerial in 2018, changes in the Arctic ecosystem and the

Briefing Meetings

Briefing meetings for embassies will take place throughout the planning process for

3rd ARCTIC SCIENCE MINISTERIAL

European Polar Board

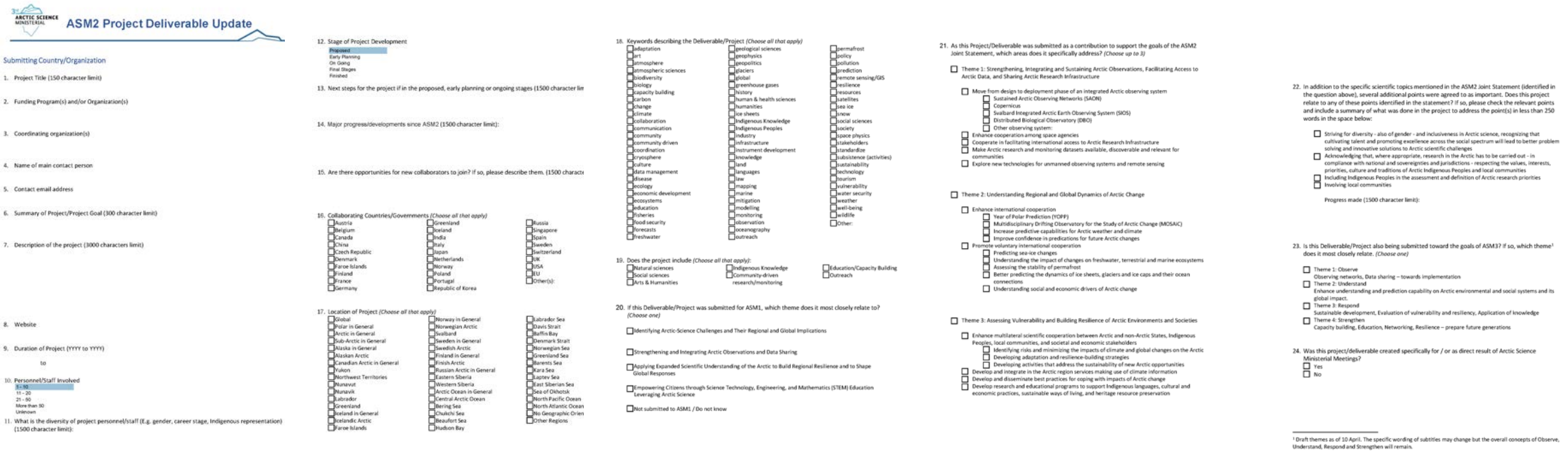
Thank You

ASM3 Email: ml-asm3@mext.go.jp

Government of Iceland
Ministry of Education, Science and Culture

MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

ASM3 Project Update Info



ASM2 Project Deliverable Update

Submitting Country/Organization

1. Project Title (150 character limit)
2. Funding Program(s) and/or Organization(s)
3. Coordinating organization(s)
4. Name of main contact person
5. Contact email address
6. Summary of Project/Project Goal (300 character limit)
7. Description of the project (3000 characters limit)
8. Website
9. Duration of Project (YYYY to YYYY)

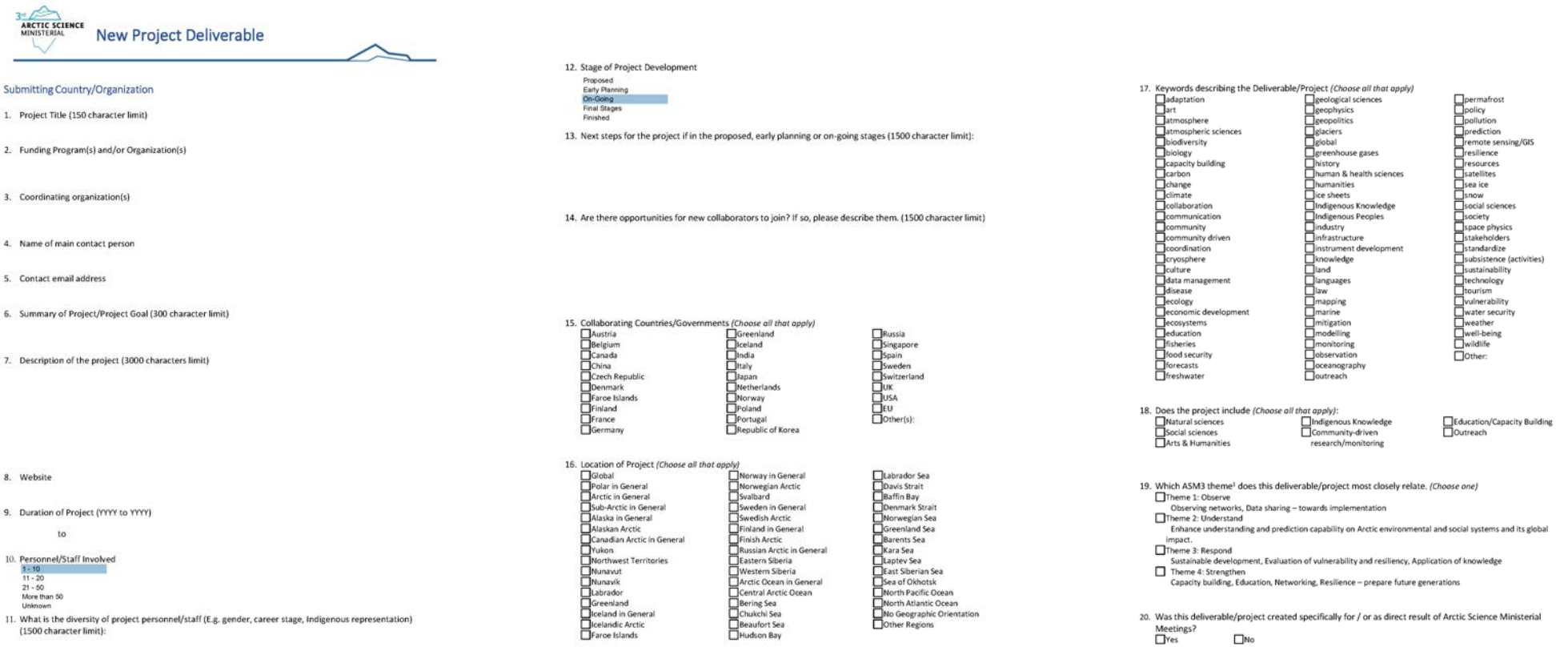
   to
10. Personnel/Staff Involved
    1 - 10
    11 - 20
    21 - 50
    More than 50
    Unknown
11. What is the diversity of project personnel/staff (E.g. gender, career stage, Indigenous representation) (1500 character limit):
12. Stage of Project Development
    Proposed
    Early Planning
    On Going
    Final Stages
    Finished
13. Next steps for the project if in the proposed, early planning or ongoing stages (1500 character lir
14. Major progress/developments since ASM2 (1500 character limit):
15. Are there opportunities for new collaborators to join? If so, please describe them. (1500 charact
16. Collaborating Countries/Governments *(Choose all that apply)*
    Austria, Belgium, Canada, China, Czech Republic, Denmark, Faroe Islands, Finland, France, Germany, Greenland, Iceland, India, Italy, Japan, Netherlands, Norway, Poland, Portugal, Republic of Korea, Russia, Singapore, Spain, Sweden, Switzerland, UK, USA, EU, Other(s):
17. Location of Project *(Choose all that apply)*
    Global, Polar in General, Arctic in General, Sub-Arctic in General, Alaska in General, Alaskan Arctic, Canadian Arctic in General, Yukon, Northwest Territories, Nunavut, Nunavik, Labrador, Greenland, Iceland in General, Icelandic Arctic, Faroe Islands, Norway in General, Norwegian Arctic, Svalbard, Sweden in General, Swedish Arctic, Finland in General, Finish Arctic, Russian Arctic in General, Eastern Siberia, Western Siberia, Arctic Ocean in General, Central Arctic Ocean, Bering Sea, Chukchi Sea, Beaufort Sea, Hudson Bay, Labrador Sea, Davis Strait, Baffin Bay, Denmark Strait, Norwegian Sea, Greenland Sea, Barents Sea, Kara Sea, Laptev Sea, East Siberian Sea, Sea of Okhotsk, North Pacific Ocean, North Atlantic Ocean, No Geographic Orien, Other Regions
18. Keywords describing the Deliverable/Project *(Choose all that apply)*
    adaptation, art, atmosphere, atmospheric sciences, biodiversity, biology, capacity building, carbon, change, climate, collaboration, communication, community, community driven, coordination, cryosphere, culture, data management, disease, ecology, economic development, ecosystems, education, fisheries, food security, forecasts, freshwater, geological sciences, geophysics, geopolitics, glaciers, global, greenhouse gases, history, human & health sciences, humanities, ice sheets, Indigenous Knowledge, Indigenous Peoples, industry, infrastructure, instrument development, knowledge, land, languages, law, mapping, marine, mitigation, modelling, monitoring, observation, oceanography, outreach, permafrost, policy, pollution, prediction, remote sensing/GIS, resilience, resources, satellites, sea ice, snow, social sciences, society, space physics, stakeholders, standardize, subsistence (activities), sustainability, technology, tourism, vulnerability, water security, weather, well-being, wildlife, Other:
19. Does the project include *(Choose all that apply)*:
    Natural sciences, Social sciences, Arts & Humanities, Indigenous Knowledge, Community-driven research/monitoring, Education/Capacity Building, Outreach
20. If this Deliverable/Project was submitted for ASM1, which theme does it most closely relate to? *(Choose one)*
    - Identifying Arctic-Science Challenges and Their Regional and Global Implications
    - Strengthening and Integrating Arctic Observations and Data Sharing
    - Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and to Shape Global Responses
    - Empowering Citizens through Science Technology, Engineering, and Mathematics (STEM) Education Leveraging Arctic Science
    - Not submitted to ASM1 / Do not know
21. As this Project/Deliverable was submitted as a contribution to support the goals of the ASM2 Joint Statement, which areas does it specifically address? *(Choose up to 3)*
    - Theme 1: Strengthening, Integrating and Sustaining Arctic Observations, Facilitating Access to Arctic Data, and Sharing Arctic Research Infrastructure
      - Move from design to deployment phase of an integrated Arctic observing system
        - Sustained Arctic Observing Networks (SAON)
        - Copernicus
        - Svalbard Integrated Arctic Earth Observing System (SIOS)
        - Distributed Biological Observatory (DBO)
        - Other observing system:
      - Enhance cooperation among space agencies
      - Cooperate in facilitating international access to Arctic Research Infrastructure
      - Make Arctic research and monitoring datasets available, discoverable and relevant for communities
      - Explore new technologies for unmanned observing systems and remote sensing
    - Theme 2: Understanding Regional and Global Dynamics of Arctic Change
      - Enhance international cooperation
        - Year of Polar Prediction (YOPP)
        - Multidisciplinary Drifting Observatory for the Study of Arctic Change (MOSAiC)
        - Increase predictive capabilities for Arctic weather and climate
        - Improve confidence in predications for future Arctic changes
      - Promote voluntary international cooperation
        - Predicting sea-ice changes
        - Understanding the impact of changes on freshwater, terrestrial and marine ecosystems
        - Assessing the stability of permafrost
        - Better predicting the dynamics of ice sheets, glaciers and ice caps and their ocean connections
        - Understanding social and economic drivers of Arctic change
    - Theme 3: Assessing Vulnerability and Building Resilience of Arctic Environments and Societies
      - Enhance multilateral scientific cooperation between Arctic and non-Arctic States, Indigenous Peoples, local communities, and societal and economic stakeholders
        - Identifying risks and minimizing the impacts of climate and global changes on the Arctic
        - Developing adaptation and resilience-building strategies
        - Developing activities that address the sustainability of new Arctic opportunities
      - Develop and integrate in the Arctic region services making use of climate information
      - Develop and disseminate best practices for coping with impacts of Arctic change
      - Develop research and educational programs to support Indigenous languages, cultural and economic practices, sustainable ways of living, and heritage resource preservation
22. In addition to the specific scientific topics mentioned in the ASM2 Joint Statement (identified in the question above), several additional points were agreed to as important. Does this project relate to any of these points identified in the statement? If so, please check the relevant points and include a summary of what was done in the project to address the point(s) in less than 250 words in the space below:
    - Striving for diversity - also of gender - and inclusiveness in Arctic science, recognizing that cultivating talent and promoting excellence across the social spectrum will lead to better problem solving and innovative solutions to Arctic scientific challenges
    - Acknowledging that, where appropriate, research in the Arctic has to be carried out - in compliance with national and sovereignties and jurisdictions - respecting the values, interests, priorities, culture and traditions of Arctic Indigenous Peoples and local communities
    - Including Indigenous Peoples in the assessment and definition of Arctic research priorities
    - Involving local communities

    Progress made (1500 character limit):
23. Is this Deliverable/Project also being submitted toward the goals of ASM3? If so, which theme[1] does it most closely relate. *(Choose one)*
    - Theme 1: Observe
      Observing networks, Data sharing – towards implementation
    - Theme 2: Understand
      Enhance understanding and prediction capability on Arctic environmental and social systems and its global impact.
    - Theme 3: Respond
      Sustainable development, Evaluation of vulnerability and resiliency, Application of knowledge
    - Theme 4: Strengthen
      Capacity building, Education, Networking, Resilience – prepare future generations
24. Was this project/deliverable created specifically for / or as direct result of Arctic Science Ministerial Meetings?
    - Yes
    - No

[1] Draft themes as of 10 April. The specific wording of subtitles may change but the overall concepts of Observe, Understand, Respond and Strengthen will remain.

Project Background
Status of the project
What has been accomplished and what's next
What countries collaborate
Location, Keywords, Themes of ASM1, ASM2, ASM3

ASM3 New Project Info



3rd ARCTIC SCIENCE MINISTERIAL

New Project Deliverable

Submitting Country/Organization

1. Project Title (150 character limit)
2. Funding Program(s) and/or Organization(s)
3. Coordinating organization(s)
4. Name of main contact person
5. Contact email address
6. Summary of Project/Project Goal (300 character limit)
7. Description of the project (3000 characters limit)
8. Website
9. Duration of Project (YYYY to YYYY)

   to

10. Personnel/Staff Involved
    1 - 10
    11 - 20
    21 - 50
    More than 50
    Unknown
11. What is the diversity of project personnel/staff (E.g. gender, career stage, Indigenous representation) (1500 character limit):
12. Stage of Project Development
    Proposed
    Early Planning
    On-Going
    Final Stages
    Finished
13. Next steps for the project if in the proposed, early planning or on-going stages (1500 character limit):
14. Are there opportunities for new collaborators to join? If so, please describe them. (1500 character limit)
15. Collaborating Countries/Governments *(Choose all that apply)*
    - Austria, Belgium, Canada, China, Czech Republic, Denmark, Faroe Islands, Finland, France, Germany
    - Greenland, Iceland, India, Italy, Japan, Netherlands, Norway, Poland, Portugal, Republic of Korea
    - Russia, Singapore, Spain, Sweden, Switzerland, UK, USA, EU, Other(s):
16. Location of Project *(Choose all that apply)*
    - Global, Polar in General, Arctic in General, Sub-Arctic in General, Alaska in General, Alaskan Arctic, Canadian Arctic in General, Yukon, Northwest Territories, Nunavut, Nunavik, Labrador, Greenland, Iceland in General, Icelandic Arctic, Faroe Islands
    - Norway in General, Norwegian Arctic, Svalbard, Sweden in General, Swedish Arctic, Finland in General, Finish Arctic, Russian Arctic in General, Eastern Siberia, Western Siberia, Arctic Ocean in General, Central Arctic Ocean, Bering Sea, Chukchi Sea, Beaufort Sea, Hudson Bay
    - Labrador Sea, Davis Strait, Baffin Bay, Denmark Strait, Norwegian Sea, Greenland Sea, Barents Sea, Kara Sea, Laptev Sea, East Siberian Sea, Sea of Okhotsk, North Pacific Ocean, North Atlantic Ocean, No Geographic Orientation, Other Regions
17. Keywords describing the Deliverable/Project *(Choose all that apply)*
    - adaptation, art, atmosphere, atmospheric sciences, biodiversity, biology, capacity building, carbon, change, climate, collaboration, communication, community, community driven, coordination, cryosphere, culture, data management, disease, ecology, economic development, ecosystems, education, fisheries, food security, forecasts, freshwater
    - geological sciences, geophysics, geopolitics, glaciers, global, greenhouse gases, history, human & health sciences, humanities, ice sheets, Indigenous Knowledge, Indigenous Peoples, industry, infrastructure, instrument development, knowledge, land, languages, law, mapping, marine, mitigation, modelling, monitoring, observation, oceanography, outreach
    - permafrost, policy, pollution, prediction, remote sensing/GIS, resilience, resources, satellites, sea ice, snow, social sciences, society, space physics, stakeholders, standardize, subsistence (activities), sustainability, technology, tourism, vulnerability, water security, weather, well-being, wildlife, Other:
18. Does the project include *(Choose all that apply)*:
    - Natural sciences, Social sciences, Arts & Humanities
    - Indigenous Knowledge, Community-driven research/monitoring
    - Education/Capacity Building, Outreach
19. Which ASM3 theme[1] does this deliverable/project most closely relate. *(Choose one)*
    - Theme 1: Observe
      Observing networks, Data sharing – towards implementation
    - Theme 2: Understand
      Enhance understanding and prediction capability on Arctic environmental and social systems and its global impact.
    - Theme 3: Respond
      Sustainable development, Evaluation of vulnerability and resiliency, Application of knowledge
    - Theme 4: Strengthen
      Capacity building, Education, Networking, Resilience – prepare future generations
20. Was this deliverable/project created specifically for / or as direct result of Arctic Science Ministerial Meetings?
    Yes No

[1] Please note that ASM3 Theme subtitles are in draft format as of 10 April 2020

Project Background
What is planned
Collaborators, Location, Keywords, Themes of ASM3