



# International Arctic Science Committee

## Report to the Polar Research Board

5 June 2024

**Matthew Druckenmiller**

U.S. Delegate to IASC

IASC Vice President

National Snow and Ice Data Center, CIRES, Univ. of Colorado Boulder

*Photo: USFSW/Brad Benter*

[www.iasc.info](http://www.iasc.info)



# International Arctic Science Committee (IASC)

- non-governmental, international scientific organization, founded in 1990
- Promotes and facilitates cooperation in all aspects of Arctic research, in all countries engaged in Arctic research, and in all areas of the Arctic region
- supports science development and advice through workshops, long-term programs, assessments, and science planning activities



# U.S. Delegation to IASC

NATIONAL  
ACADEMIES

Sciences  
Engineering  
Medicine

**15 members** appointed by the  
Polar Research Board

## IASC Council Delegates

- Matthew Druckenmiller (*lead*) – Univ. of Colorado Boulder
- Andrey Petrov (*alternate*) – University of Northern Iowa

### Standing Committees

#### Standing Committee on Indigenous Involvement

- Nagruk Harcharek – The Voice of the Arctic Iñupiat
- Laura Zimin – University of Alaska Fairbanks

#### International Science Initiative in the Russian Arctic (ISIRA)

- Vladimir Romanovsky – University of Alaska Fairbanks

### Working Groups

#### Atmosphere Working Group

- Gijs de Boer – Univ. of Colorado Boulder (*Chair*)
- Muyin Wang – University of Washington

#### Cryosphere Working Group

- Robert Hawley – Dartmouth College
- Melinda Webster – Univ. of Washington (*Co-Chair*)

#### Marine Working Group

- Karen Frey – Clark University
- Laurie Juranek – Oregon State

#### Social and Human Working Group

- Lawrence Hamilton – University of New Hampshire
- Victoria Herrmann – The Arctic Institute

#### Terrestrial Working Group

- Michelle Mack – Northern Arizona University
- Craig Tweedie – Univ. of Texas El Paso



# 2024 IASC Bulletin

## Contents

- IASC Internal Development
- IASC Working Groups
- ICARP IV Process
- IPY 2032-33
- Arctic Science Summit Week
- Data and Observations
- Capacity Building — *After 10 years, 78 ECRs have participated in the IASC Fellows Programs*

Download at:

<https://iasc.info/news/iasc-news/1289-iasc-2024-bulletin>





# 2023 State of Arctic Science Report

## Contents

- ICARP IV Process
- IPY 2032-33
- Current Arctic Research Priorities
- Major Ongoing and Upcoming Projects
- New & Novel Arctic Research
- Emerging Arctic Research Issues
- Current Gaps in Research, Observation & Data
- Emerging Issues Concerning International Science Cooperation

The International Arctic Science Committee's

# 2023 STATE OF ARCTIC SCIENCE REPORT

Download at:

<https://iasc.info/about/publications-documents/state-of-arctic-science>

# ARCTIC SCIENCE SUMMIT WEEK

21 - 29 March 2024  
Edinburgh, Scotland, UK

#ASSW2024



## Arctic Science Summit Week 2024

Edinburgh, Scotland, UK | 21 - 29 March 2024 |  
#ASSW2024



# International Conference for Arctic Research Planning (ICARP)

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- Decadal Arctic research planning process organised by IASC every 10 years
  - 1995: Hanover, New Hampshire, USA
  - 2005: Copenhagen, Denmark
  - 2015: Toyama Japan
  - 2025: Boulder, Colorado, USA
- Discusses the state of Arctic science and the place the Arctic occupies in global affairs and systems
- Engages Arctic researchers, policy makers, Indigenous Peoples, residents, and interested parties from around the world



# ICARP IV

INTERNATIONAL CONFERENCE ON  
ARCTIC RESEARCH PLANNING



- Multi-year **process** (2022-2026) of engagement, planning, & consultation
- **Goals:**
  - Identify the most urgent knowledge gaps and Arctic research priorities and needs for the next decade
  - Develop an implementation vision with internationally collaborative science plans
- Primary tool for the **Fifth International Polar Year (2032-33)**





## International Steering Committee

- Oversees and coordinates the multi-year ICARP IV process (2022-2026)
- Guides the work of the ICARP IV Research Priority Teams

## Local Organizing Committee

- Develops agendas and meeting structure for ICARP IV Summit, side meetings, public events, etc.
- Guides logistical planning & fundraising
- Hosting responsibilities

## National Steering Group

- Provides input on meeting plans and agendas
- Advise on products & outcomes
- Promote and engage U.S. partner organizations



# ICARP IV

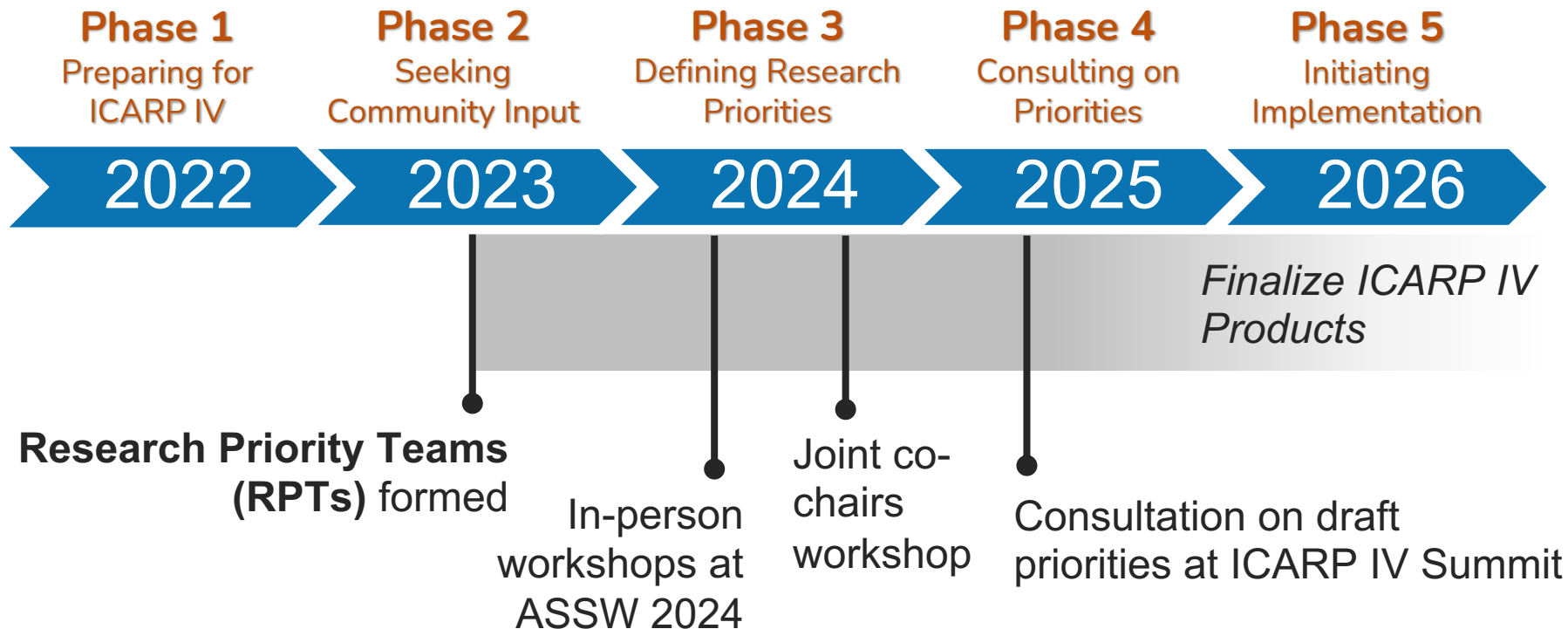
INTERNATIONAL CONFERENCE ON  
ARCTIC RESEARCH PLANNING

## How to Contribute

<https://icarp.iasc.info/engagement>

1. **Endorsement for current and future activities:** Groups and organizations can seek endorsement and participate in an input & reporting process
2. **Submit resources to inform the process and Research Priority Teams:** Existing reports and relevant documents can be uploaded.
3. **Online Survey:** ICARP IV survey launched in Oct 2023
4. **Participate in ICARP IV events:** Workshops, townhalls, and information sessions; Arctic Circle Assembly; **ASSW 2025 & ICARP IV Summit**

## Research Priority Teams (RPTs)



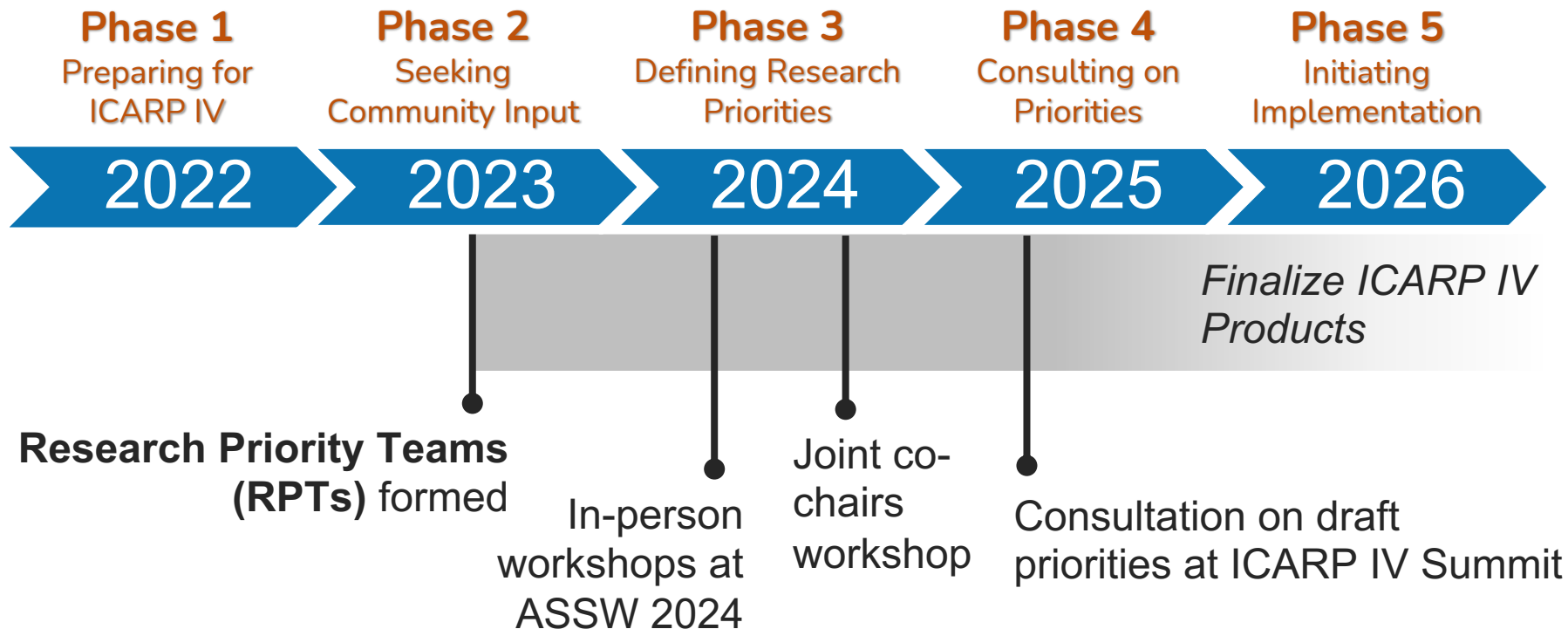
## Research Priority Teams (RPTs)

ICARP III

- 1 The Role of the Arctic in the Global System
- 2 Observing, Reconstructing, and Predicting Future Climate Dynamics and Ecosystem Responses
- 3 Understanding the Vulnerability and Resilience of Arctic Environments and Societies and Supporting Sustainable Development
- 4 Arctic Research Cooperation and Diplomacy
- 5 Co-Production and Indigenous-led methodologies
- 6 Preparing present and future generations through Education, Outreach, Communication, Capacity Building, and Networking
- 7 Technology, Infrastructure, Logistics, and Services



## Research Priority Teams (RPTs)





**ICARP IV**  
INTERNATIONAL CONFERENCE ON  
ARCTIC RESEARCH PLANNING



Photo Courtesy of University of Colorado Boulder

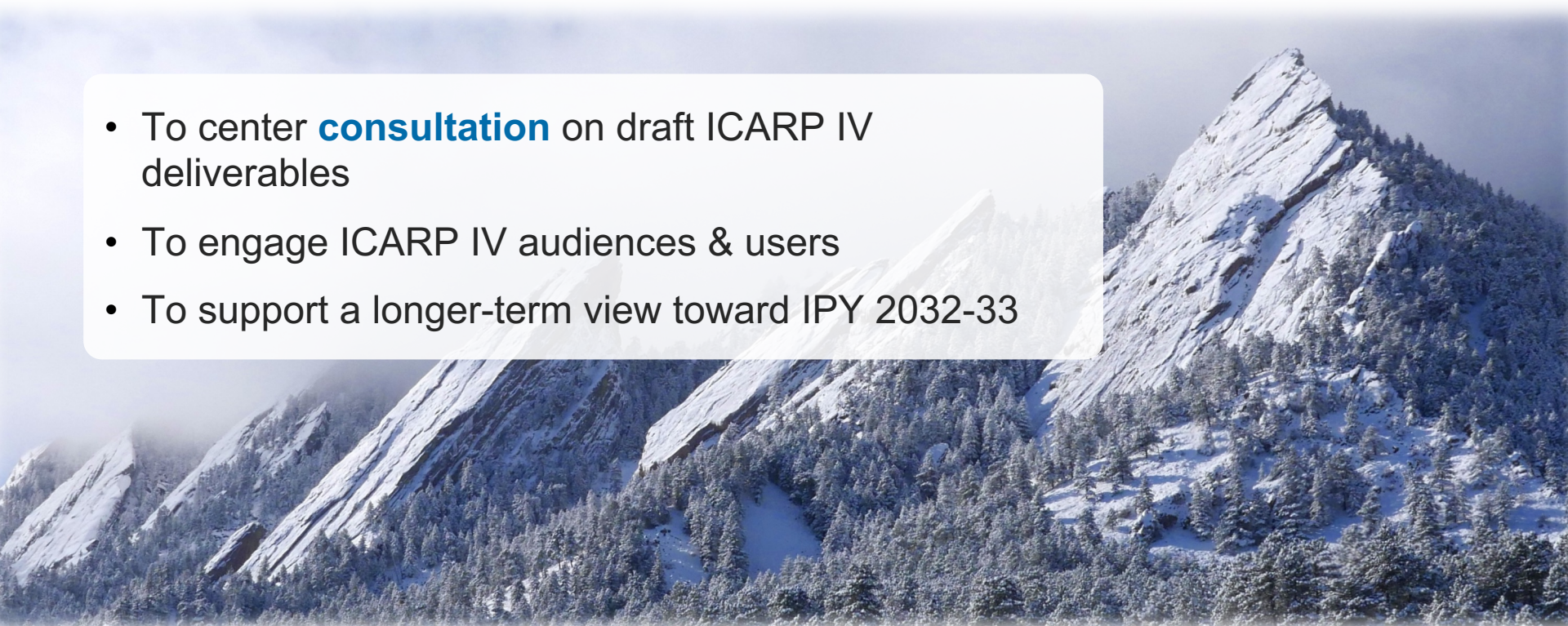
## ASSW Science Symposium will center on the **Fourth International Conference for Arctic Research Planning (ICARP IV)**

### Timeline

- **Now - June 14:** Call for ICARP IV sessions
- **Now - Sep 30:** Call for community & business meetings
- **Aug 2024:** Call for abstracts
- **Oct 2024:** First public agenda released
- **Nov 2024:** Registration opens

<https://www.assw.info>

- To center **consultation** on draft ICARP IV deliverables
- To engage ICARP IV audiences & users
- To support a longer-term view toward IPY 2032-33



# Indigenizing Arctic Research Initiative

Informal dialogues led by and with Arctic Indigenous Peoples on how they wish to participate in ICARP IV and other in Arctic initiatives, including IPY 2032-33.

Engagement and discussions led by:

- **Dr. Dalee Sambo Dorough**  
(Iñupiaq; Univ. of Alaska Anchorage)
- **Varvara Korkina Williams**  
(Kumandin; Dartmouth College)
- **Dr. Tatiana Degai**  
(Itelmen; University of Victoria)



*Dalee Sambo Dorough speaking at  
Arctic Circle Assembly 2023*

Supported by an NNA Incubator Grant from the National Science Foundation

<https://dickey.dartmouth.edu/news/2023/07/indigenizing-arctic-research>



# What types of ICARP IV Outcomes and Products are needed?

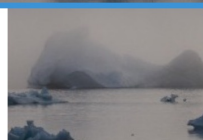
The types, formats, and specific audiences for ICARP IV outcomes have not yet been identified, but engagements have addressed the need to:

- Identify **critical research priorities, data gaps, and new research areas** amid rapid change and uncertainty
- Drive research needed to **support decision-making**
- Shape **specific and shared funding priorities**
- Formalize & institutionalize **Indigenous Peoples' involvement and leadership** within international Arctic research planning and implementation
- Set **coordinated research plans for international cooperation**

# The 4th International Conference on Arctic Research Planning (ICARP IV) Process 2022 - 2026

## ICARP IV Process

The 4th International Conference on Arctic  
Research Planning (ICARP IV) Process 2022 -  
2026



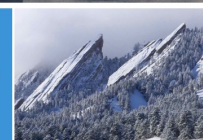
## Community-wide Engagement

Find out how you can contribute!



## ICARP IV Summit

ICARP IV Summit in Boulder, CO (USA) from 20  
- 28 March 2025



## News



Reminder: Call for Sessions for the Fourth International  
Conference on Arctic Research Planning (ICARP IV)



From ICARP IV to IPY 5: IASC at the Arctic Circle Berlin  
Forum 2024



ASSW 2025 – First Circular : Invitation to Boulder,  
Colorado (USA) for ASSW 2025

<https://icarp.iasc.info>



[www.iasc.info](http://www.iasc.info)



Thanks to NSF for support of the  
U.S. Delegation to IASC



## International Steering Committee

Oversees and coordinates the ICARP IV process

Co-Chaired by:

- Henry Burgess (IASC President)
- Dalee Sambo Dorough (Indigenous Co-Chair)
- Gerlis Fugmann (IASC Secretariat)

## 26 Participating Organizations

Aleut International Association (AIA)  
Arctic Data Committee (ADC)  
Arctic Monitoring and Assessment Programme (AMAP)  
Asian Forum for Polar Science (AFOPS)  
Association of Polar Early Career Scientists (APECS)  
Association of World Reindeer Herders (AWRH)  
Climate and Cryosphere (CliC)  
Conservation of Arctic Flora and Fauna (CAFF)  
European Polar Board (EPB)  
Forum of Arctic Research Operators (FARO)  
International Arctic Social Sciences Association (IASSA)  
International Association of Cryospheric Sciences (IACS)  
International Council for the Exploration of the Sea (ICES)  
International Permafrost Association (IPA)  
International Science Council (ISC)  
International Study of Arctic Change (ISAC)  
Inuit Circumpolar Council Canada (ICC Canada)  
Ny-Ålesund Science Managers Committee (NySMAC)  
Polar Educators International (PEI)  
Saami Council  
Scientific Committee on Antarctic Research (SCAR)  
Sustainable Development Working Group (SDWG)  
Sustaining Arctic Observing Network (SAON)  
Svalbard Integrated Arctic Earth Observing System (SIOS)  
The Arctic Five  
University of the Arctic (UArctic)





## Local Organizing Committee

**Matthew  
Druckenmiller (Chair)**

National Snow and Ice Data Center (NSIDC), Univ. of Colorado Boulder

**Gijs de Boer**

Cooperative Institute for Research in Environmental Sciences (CIRES),  
University of Colorado Boulder

**Mariama Dryák-Vallies**

Polar Science Early Career Community Office (PSECCO), University of  
Colorado Boulder

**Katie Ellis**

National Snow and Ice Data Center (NSIDC), Univ. of Colorado Boulder

**Gerlis Fugmann**

International Arctic Science Committee (IASC)

**James Rattling Leaf**

University of Colorado Boulder

**Linda Pendergrass**

Cooperative Institute for Research in Environmental Sciences (CIRES),  
University of Colorado Boulder

**Andrey Petrov**

ARCTICenter, University of Northern Iowa

**Sandy Starkweather**

Cooperative Institute for Research in Environmental Sciences (CIRES),  
University of Colorado Boulder

**Mistia Zuckerman**

National Snow and Ice Data Center (NSIDC), Univ. of Colorado Boulder

**James Temte**

Alaska Pacific University

**Varvara Korkina Williams**

Dartmouth University



# ARCTIC SCIENCE SUMMIT WEEK

Boulder, Colorado, USA  
20-28 March 2025



# ICARP IV

INTERNATIONAL CONFERENCE ON  
ARCTIC RESEARCH PLANNING

## National Steering Group

**Matthew Druckenmiller**, U.S. Lead Delegate to International Arctic Science Committee, National Snow and Ice Data Center and University of Colorado Boulder

**Andrey Petrov**, Alternate U.S. Delegate to International Arctic Science Committee, University of Northern Iowa

**April Melvin**, National Academies Polar Research Board

**Melody Burkins**, Dartmouth College

**Lee Cooper**, University of Maryland

**Dalee Dorough**, University of Alaska Anchorage

**Bruno Grunau**, National Renewable Energy Laboratory

**Nagruk Harcharek**, Voice of the Arctic Iñupiat

**Adelheid Hermann**, University of Alaska Fairbanks

**Diane Hirshberg**, University of Alaska Anchorage

**Martin Jeffries**, Retired and Polar Research Board Chair

**Brendan Kelly**, University of Alaska Fairbanks

**Terri Mitchell**, Ukpeaġvik Iñupiat Corporation Science

**Lynn Palensky**, North Pacific Research Board

**Julie Raymond-Yakoubian**, Kawerak, Inc.

**Christina Schaedel**, Woodwell Climate Research Center

**Jackie Qataliña Schaeffer**, Alaska Native Tribal Health Consortium

**Sorina Stalla**, Interagency Arctic Research Policy Committee

**James Temte**, Alaska Pacific University

**Merritt Turetsky**, University of Colorado Boulder

**Craig Tweedie**, University of Texas at El Paso

**Ross Virginia**, Dartmouth College

**Helen Wiggins**, Arctic Research Consortium of the United States

**Gabriel Wolken**, University of Alaska Fairbanks and Alaska Division of Geological & Geophysical Surveys

# Request for Community Input: ICARP Initial Impact Assessment

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- An initial assessment on the impact and outcomes of the past three ICARPs (1995, 2005 and 2015)
- Asking all who participated to fill out a short survey on the process, outcomes, and suggestions for the future
- Led by IASC consultant, Jenny Baeseman (jbaeseman@gmail.com)

<http://tinyurl.com/icarp-assessment>

*Deadline extended past ASSW 2024;*

*To remain open until adequate responses are received*