

## NSF Arctic Sciences Report to the AICC

Frank R. Rack, Ph.D., Program Manager, Arctic Research Support and Logistics Program
NSF Office of Polar Programs, Arctic Sciences Section



# Programmatic Directorates and Offices Supporting the NSF Mission







### **NSF Structure**

The Director, Office of Budget, Office of International Science & Engineering, Finance, & Award Management, etc.

Directorate for Biological Sciences (BIO) Directorate for Geosciences (GEO)

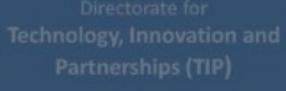
Directorate for Engineering (ENG) Directorate for Social, Behavioral & Economic Sciences (SBE)



Earth Sciences (EAR)



Ocean Sciences (OCE)





Atmospheric and Geospace Sciences (AGS)



Polar Programs (OPP)



Research, Innovation, Synergies, and Education (RISE)

### **Arctic Sciences Section Programs and Staff**



#### Arctic Natural Sciences (ANS)

"...supports projects focused on hypotheses-driven and process-based science that informs an understanding of the larger Arctic region."

Rainer Amon, Marc Stieglitz, Kelly Brunt

#### Arctic System Science (ARCSS)

"...proposals that advance our understanding of the Arctic as a coupled system, and how the Arctic system interacts with the Earth System...often interdisciplinary...with emphasis on the interactions among system components."

Greg Anderson (dt), Colleen Strawhacker

#### Arctic Observing Network (AON)

"...supports proposals to make field observations to detect and understand Arctic system change occurring on time scales longer than the duration of a typical NSF research grant."

Roberto Delgado (dt)

#### Arctic Social Sciences (ASSP)

"...supports research on Arctic social and cultural systems, present and past, and research relevant to understanding these systems."

Liam Frink, Erica Hill

### **Arctic Sciences Section Programs and Staff**



Arctic Sciences Section Head: Jennifer Mercer

AAAS Science and Technology Policy

Fellow:

Science Assistant: Kayla Hubbard

**Program Specialist** 

#### Arctic Policy Program (ARPS)

"...supports short- and long-term efforts to enhance communication, coordination, and collaboration across the research enterprise."

Colleen Strawhacker

#### Arctic Research Support and Logistics (RSL)

The RSL Program supports the fieldwork of research projects funded through ARC, as well as on a cost reimbursable basis for other projects. Created to make Arctic fieldwork safer, more efficient, and cost-effective.

Renee Crain, Frank Rack, Kate Ruck, Katy Smith (c) Linda Izzard (dt)

#### **Crosscutting Programs**

<u>Polar Education:</u> education research to promote an informed citizenry and the next generation of scientists. *Lisa Rom* 

Polar Cyberinfrastructure: collaboration between Polar and cyberinfrastructure researchers. Allen Pope





https://battellearcticgateway.org/

### NSF/OPP's Arctic Sciences Section and the Arctic Research Support and Logistics (RSL) Program



#### Vessel Support

The NSF Arctic Research Support and Logistics (RSL) Program works with NSF OCE and OPP Program Officers, the USCG, national and international vessel operators, and our Arctic logistics contractor (Battelle-ARO) to identify vessel requirements for **funded projects** and then negotiate terms and conditions to acquire ship time on domestic and international icebreakers, vessels of the U.S. Academic Research Fleet (ARF), or commercial charter vessels, to provide support to NSF-funded Arctic Sciences Section and related projects.

USCGC HEALY and other vessels of the U.S. ARF, or foreign research vessels, if applicable, are requested using a **Ship-time & Marine Equipment (SME)** request form that is submitted through the **Marine Facilities Planning (MFP)** application (<a href="https://www.mfp.us/">https://www.mfp.us/</a>). The **SME request form** is included as a <a href="mailto:Supplementary\_bocument">Supplementary\_bocument</a> in research proposals that are submitted to NSF for peer review.

Vessel Operators of the U.S. ARF (and potentially others, like the USCG) use the information provided in the SME request forms to develop and confirm annual vessel schedules. Research project Pl's update their SME submissions in the MFP to clarify the source of project funding and status prior to scheduling.

Proposals requesting access to Arctic research vessels and icebreakers should submit proposals two or more years prior to the desired time of the cruise to provide sufficient time for scheduling and planning.

#### 2023 Arctic Cruises (UNOLS, USCG, Chartered US Vessels, Canadian CG, Sweden)

- R/V Sikuliaq OPP-2303606 Early Career Researcher Chief Scientist Training Cruise Emily Eidam and Lauren Juranek (Oregon State Univ.)
- R/V Sikuliaq ANS-2135316 Fate of Primary Production in the Chukchi Sea Kevin Arrigo (Stanford Univ.)
- R/V Sikuliaq ANS-2117052 Paleoclimate and Paleoecology of the Late Pleistocene and Holocene Bering Sea Shelf Sarah Fowell (Univ. Alaska Fairbanks)
- USCGC Healy AON-1724523 Nansen and Amundsen Basins Observational Systems Igor Polyakov (Univ. Alaska Fairbanks)
- USCGC Healy AON-1951762 U.S. Interagency Arctic Buoy Program (USIABP) Ignatius Rigor (Univ. of Washington)
- R/V Norseman II AON-2153942 Bering Strait AON Rebecca Woodgate (Univ. of Washington)
- CCGS Louis S. St-Laurent (Department of Fisheries and Oceans, Canada) AON-1950077 and AON-1949881 Joint Ocean Ice Study/Beaufort
   Gyre Observing System (JOIS/BGOS) NSF-DFO joint cruise Mary-Louise Timmermans (Yale Univ.) and Andrey Proshutinsky (WHOI)
- CCGC Sir Wilfred Laurier (Department of Fisheries and Oceans, Canada) AON-1917469 NSF-DFO joint cruise related to the Distributed Biological Observatory (DBO) – Jackie Grebmeier (UMD-CBL)
- Swedish IB Oden ANS-2227313 (Penny Vlahos, UCONN-Avery Point), ANS-2226864 (Jessie Creamean, Colorado State Univ.), AGS-221153
   (Megan Willis, Colorado State Univ.) Atmospheric rivers and the onset of sea ice melt (ARTofMELT) Swedish Polar Research Secretariat.



#### **Arctic Research Planning for the next Decade -**

Fourth International Conference on Arctic Research Planning (ICARP

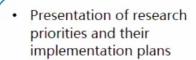
IV) Process (2022 - 2026)

Website: icarp.iasc.info

Email: info@iasc.info

- In-person Engagement (e.g. Workshops, Information Sessions)
- Online Engagement (e.g. Survey)
- Input from Projects, Statements

Phase 2



 Consultation on priorities and implementation

Phase 4





Preparing for ICARP

Phase 1

Steering Committee and

**ICARP IV Conference Host** 

ICARP IV International

Committee formed

Seeking Community
Input

Defining Research
Priorities



#### Phase 3

- Research Priority Teams
- Workshops (ASSW 2024) and ICARP IV Planning Retreat (autumn 2024)
- Drafting of research priorities and their implementation plans

Consulting on Priorities



#### ICARP IV Conference / ASSW 2025

21 – 28 March 2025, Boulder, USA Initiating Implementation



#### Phase 5

- ICARP IV Final Report
- Initiation of implementation of research priorities
- developing Arctic research themes for the International Polar Year 2032-33

Communication Plan developed.

· ICARP IV Engagement and

2022 **>** 2023 **>** 2024 **>** 2025 **>** 2026

# ICARP IV – Fourth International Conference on Arctic Research Planning Process (2022 – 2026)



ICARP IV Summit / ASSW 2025 from 21 – 28 March 2025 in Boulder, Colorado, USA

➤ ICARP IV = primary tool to determine the Arctic scientific goals and directions for the upcoming Fifth International Polar Year (IPY) 2032 – 2033



Photo: University of Colorado/Glenn Asakawa



Where Discoveries Begin