



## Anchorage Arctic Research Day

USARC Chair, Fran Ulmer  
March 24, 2017



## US Arctic Research Commission:

- Develops national Arctic research policy
- Facilitates Arctic research cooperation
- Reviews federal Arctic research programs
- Recommends improvements for data sharing
- Facilitates cooperation w/Alaska & internationally

# Commissioners



## **CHAIR**

### **Hon. Fran Ulmer**

US Arctic Research Commission  
Anchorage, Alaska



### **David Benton**

Fisheries Consultant  
Juneau, Alaska



### **Kasagnaaluk Marie N. Greene**

Kotzebue, Alaska



### **James J. McCarthy, PhD**

Harvard University  
Cambridge, Massachusetts



### **Larry Mayer, PhD**

University of New Hampshire  
Durham, New Hampshire



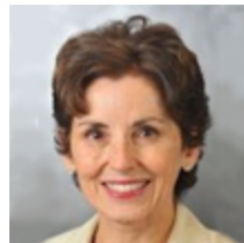
### **Mary C. Pete**

University of Alaska Fairbanks  
Bethel, Alaska



### **Jackie Richter-Menge**

Senior research civil engineer  
Institute of Northern Engineering  
University of Alaska Fairbanks  
Fairbanks, Alaska



## **EX-OFFICIO MEMBER**

### **France A. Córdoba, PhD**

National Science Foundation  
Arlington, Virginia



REPORT ON THE **Goals and Objectives** for  
**Arctic Research 2017–2018**

FOR THE US ARCTIC RESEARCH PROGRAM PLAN



UNITED STATES ARCTIC RESEARCH COMMISSION

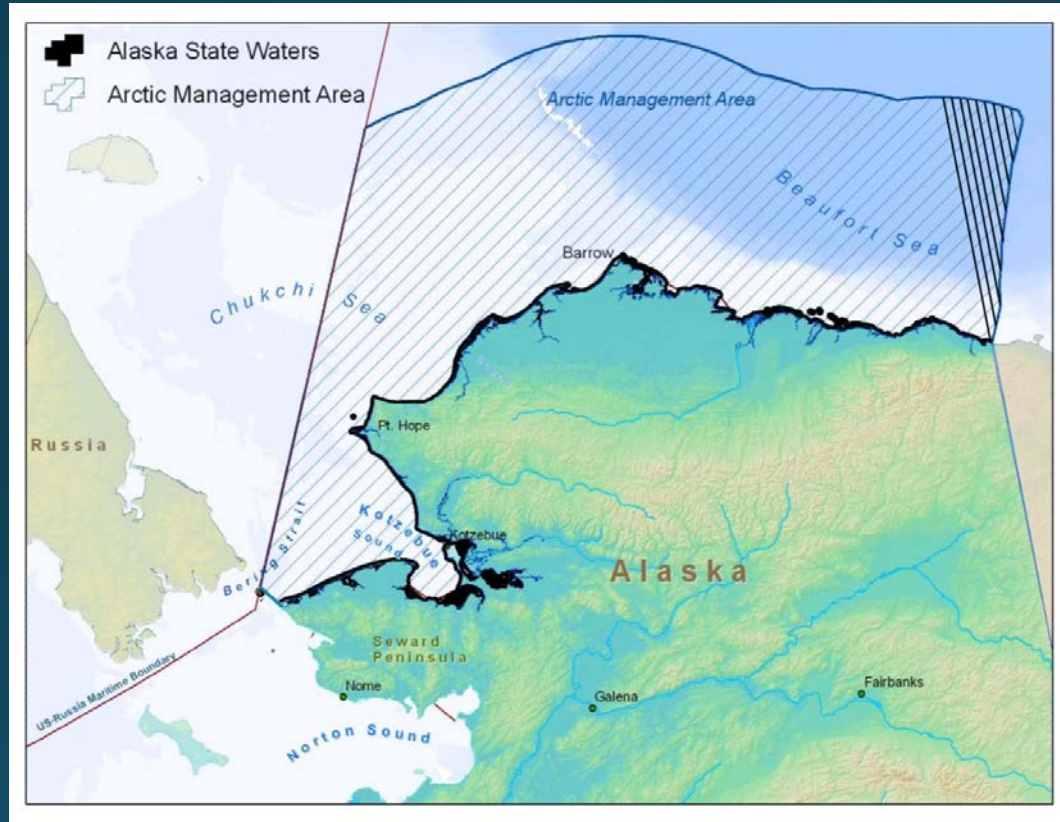


# 6 priority goals for Arctic research

1. Environmental Change
2. Human Health
3. Energy (efficiency and renewables)
4. The “Built Environment”
5. Cultures and Community Resilience
6. International Scientific Cooperation



# “Arctic Environmental Change”



- Investigate how changes in ocean temperature and carbon chemistry affect Arctic marine ecosystems, their composition and productivity, and the potential of Arctic fisheries.

# “Arctic Human Health”

As Earth Warms, the Diseases That May Lie Within Permafrost Become a Bigger Worry



- Analyze the possible pathways of human exposure to contaminants and diseases passed between people and wildlife in the Arctic, and how these pathways evolve with climate change.

# Federal Arctic research policy/process



USARC set goals



IARPC adopts,  
creates & executes  
research plan



White House:  
OMB/OSTP  
coordinate &  
review budget



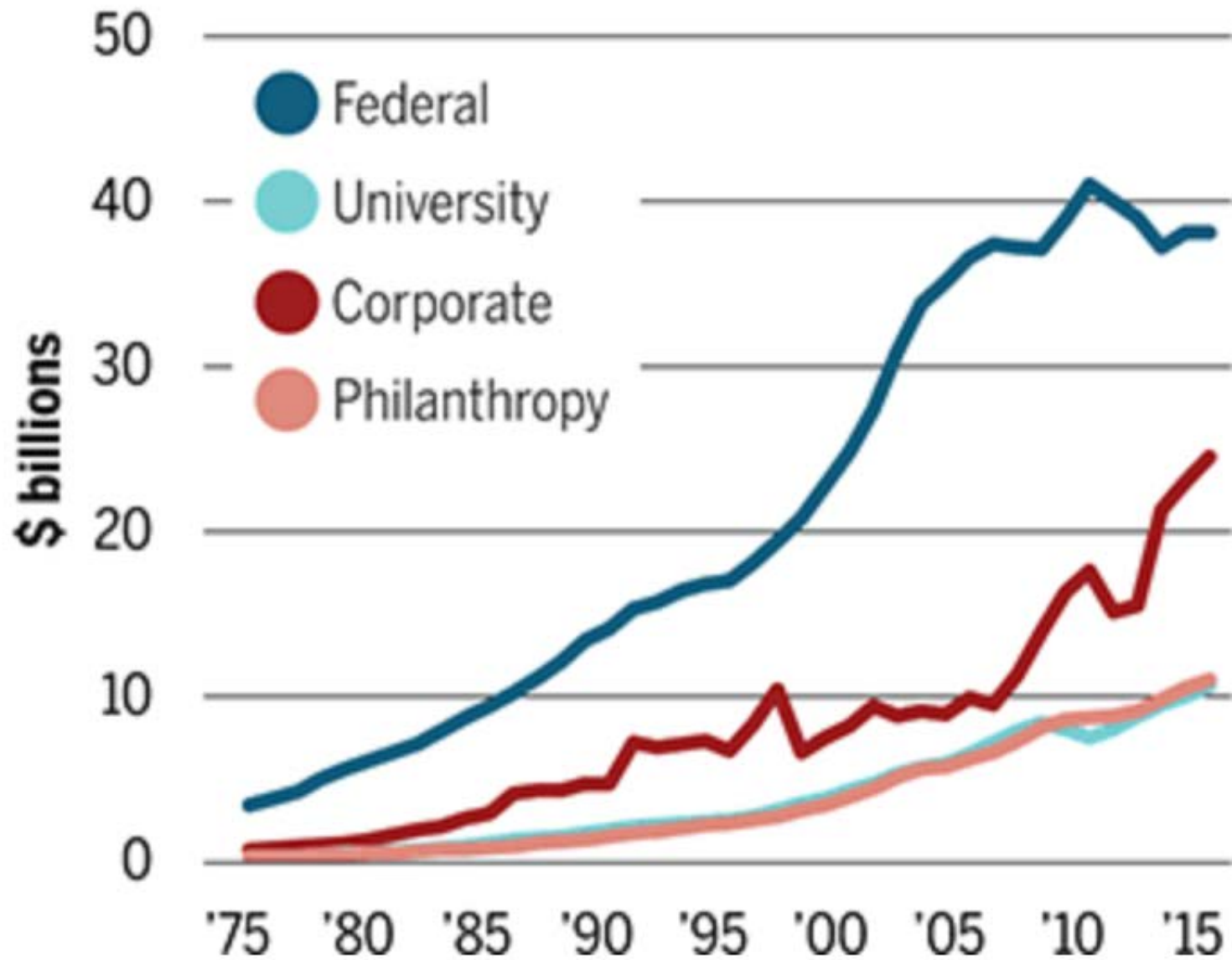
“The Commission shall, after submission of the President's annual budget request, review the request and report to Congress on adherence to the Plan.”



Congress:  
Authorizes &  
Appropriates



# Federal share of basic research declines



# ARWSWG



## Alaska Rural Water and Sanitation Working Group

*The Working Group's mission is to maximize the health benefits of in-home water and sanitation services in rural Alaska.*

# AMHWG



## Arctic Mental Health Working Group

*GROUP MISSION: to strengthen systems of care to prevent suicide and improve mental health in the circumpolar North via the promotion of indigenous knowledge, research, and evidence-based early intervention and primary prevention efforts.*

# AREWG

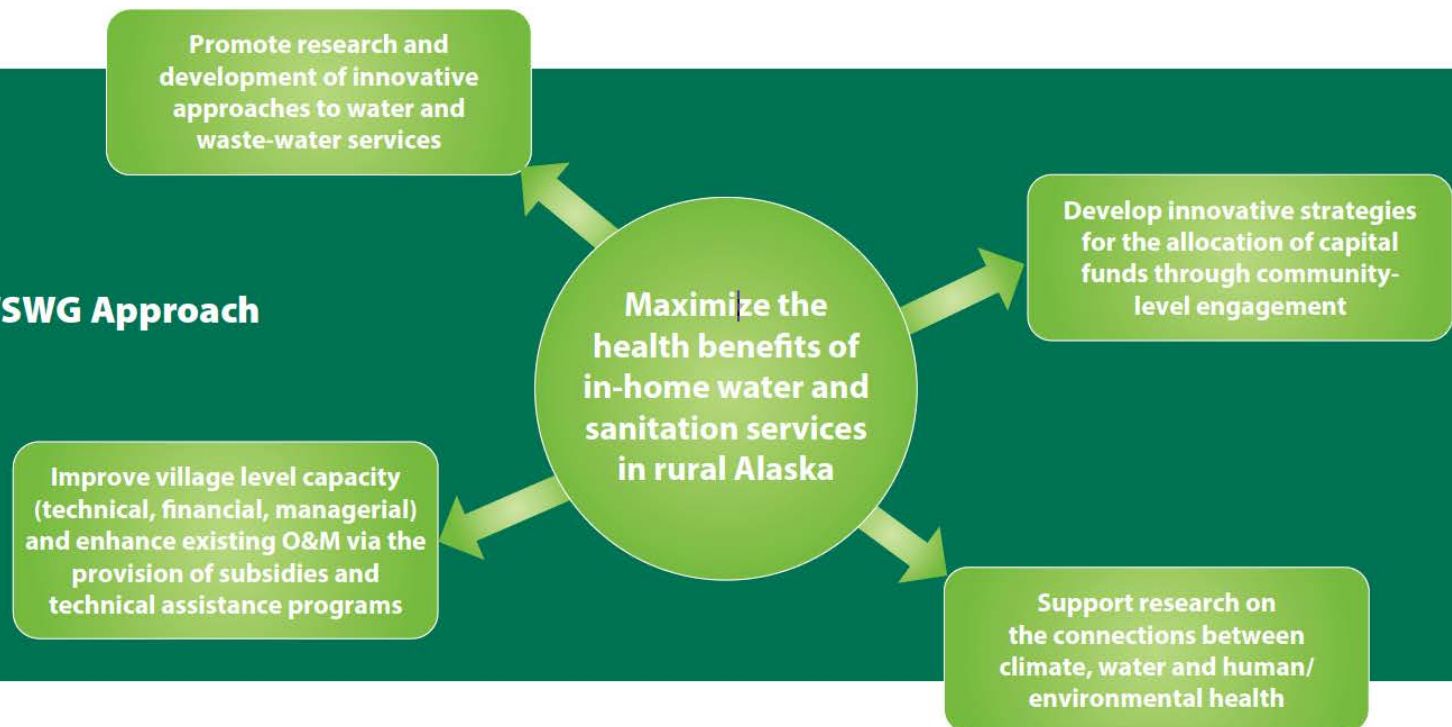


## Arctic Renewable Energy Working Group

*The group's mission is to benefit Arctic communities by identifying and addressing critical renewable energy and energy efficiency research needs.*

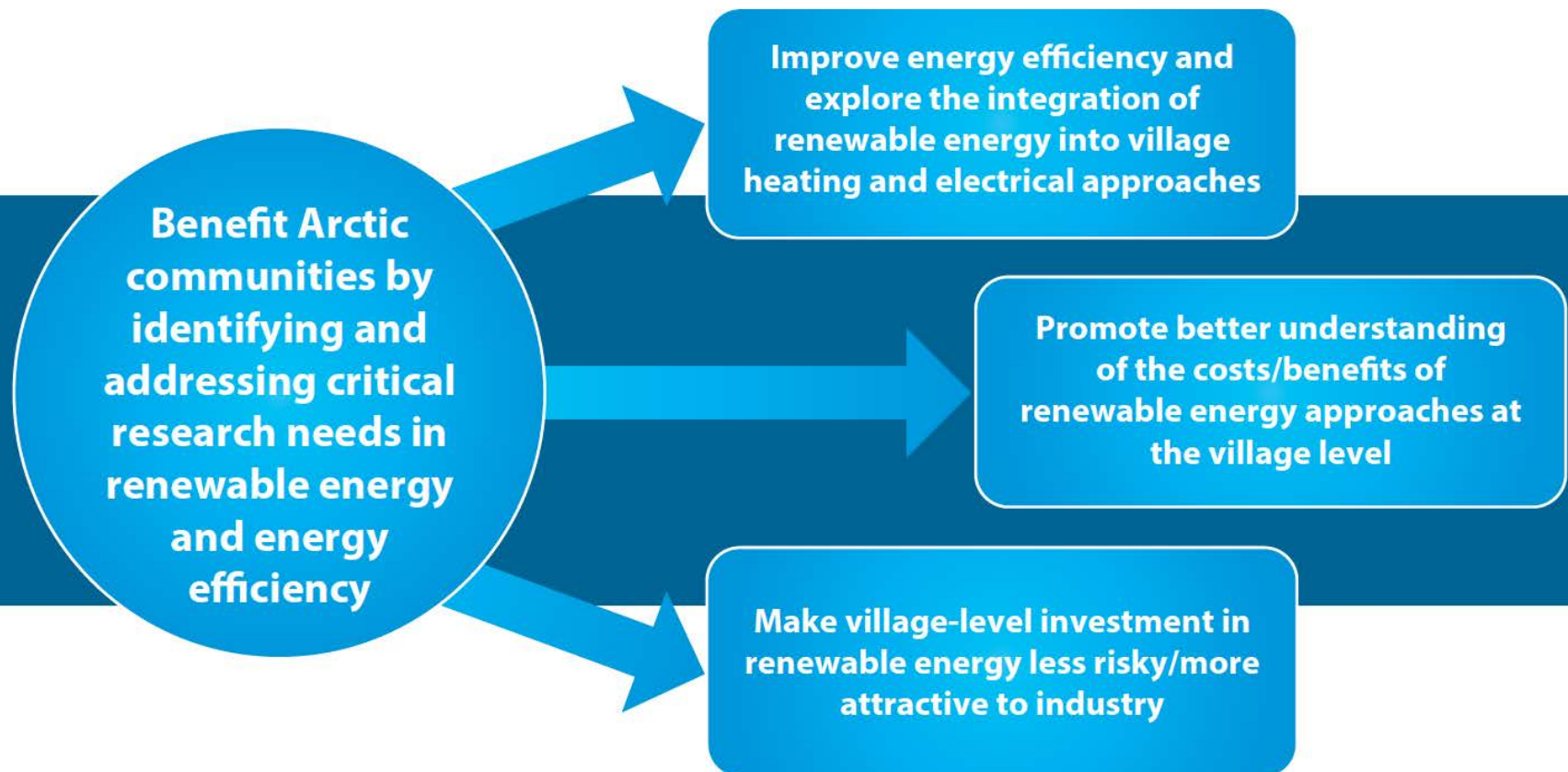
# Alaska Rural Water and Sanitation Working Group

## 2016–2017 ARWSWG Approach

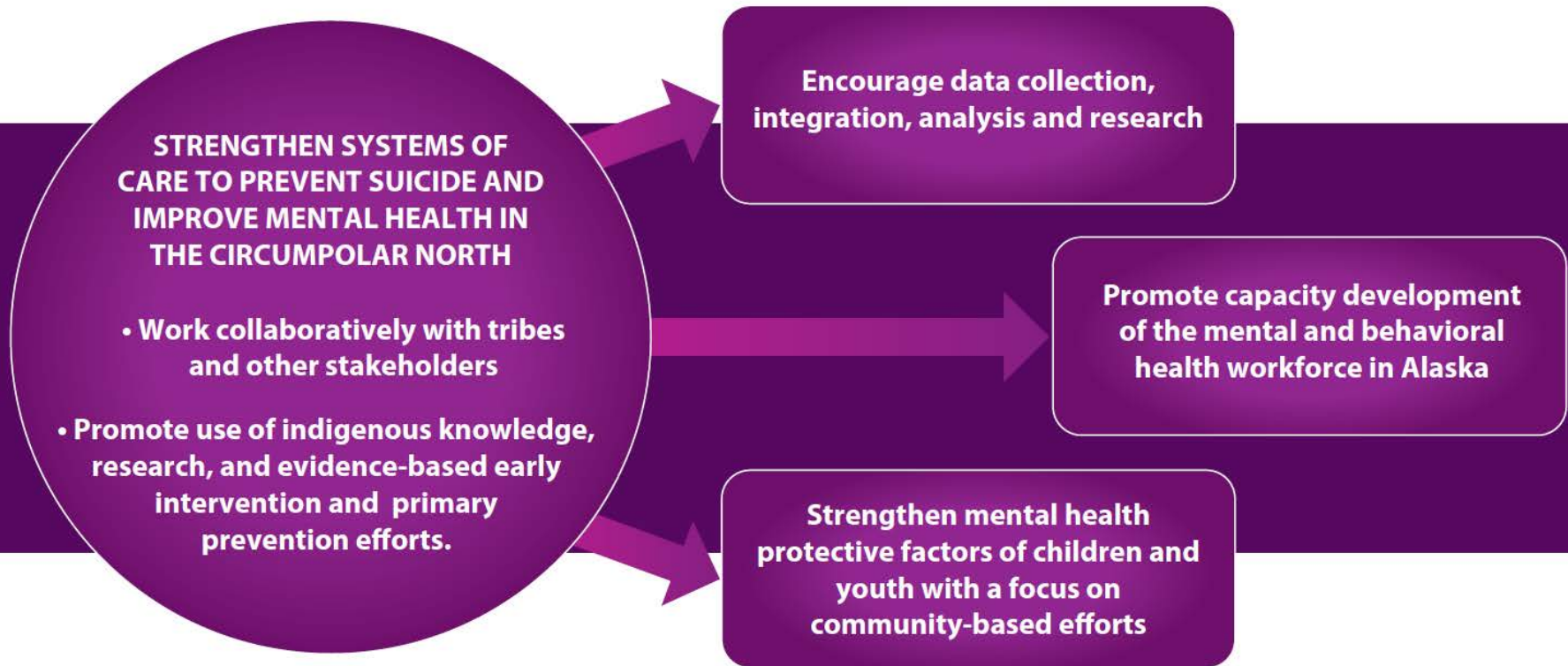




# Arctic Renewable Energy Working Group



# Arctic Mental Health Working Group





# Arctic Council

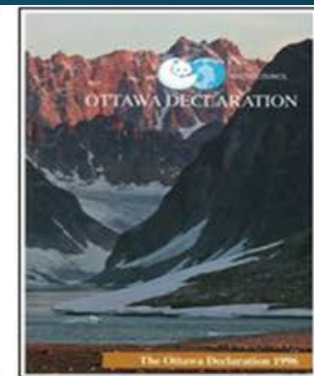
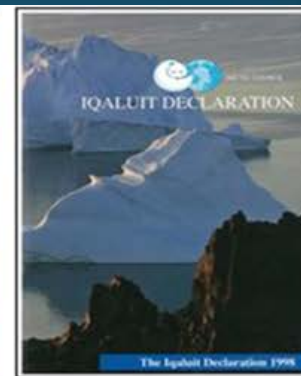
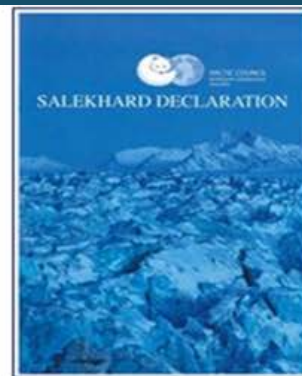
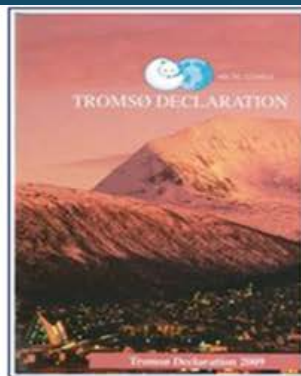
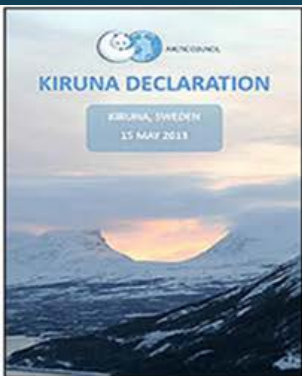
US Chairmanship Update and the  
Fairbanks Ministerial (May 11, 2017)





# Arctic Council Mandate

*Promote cooperation, coordination and interaction among the Arctic States, with the involvement of Arctic indigenous communities and other Arctic inhabitants on common arctic issues, in particular sustainable development and environmental protection in the Arctic.*



8 MEMBER STATES



6 INDIGENOUS PERMANENT PARTICIPANT ORGANIZATIONS

6 WORKING GROUPS

OBSERVER STATES AND ORGANIZATIONS



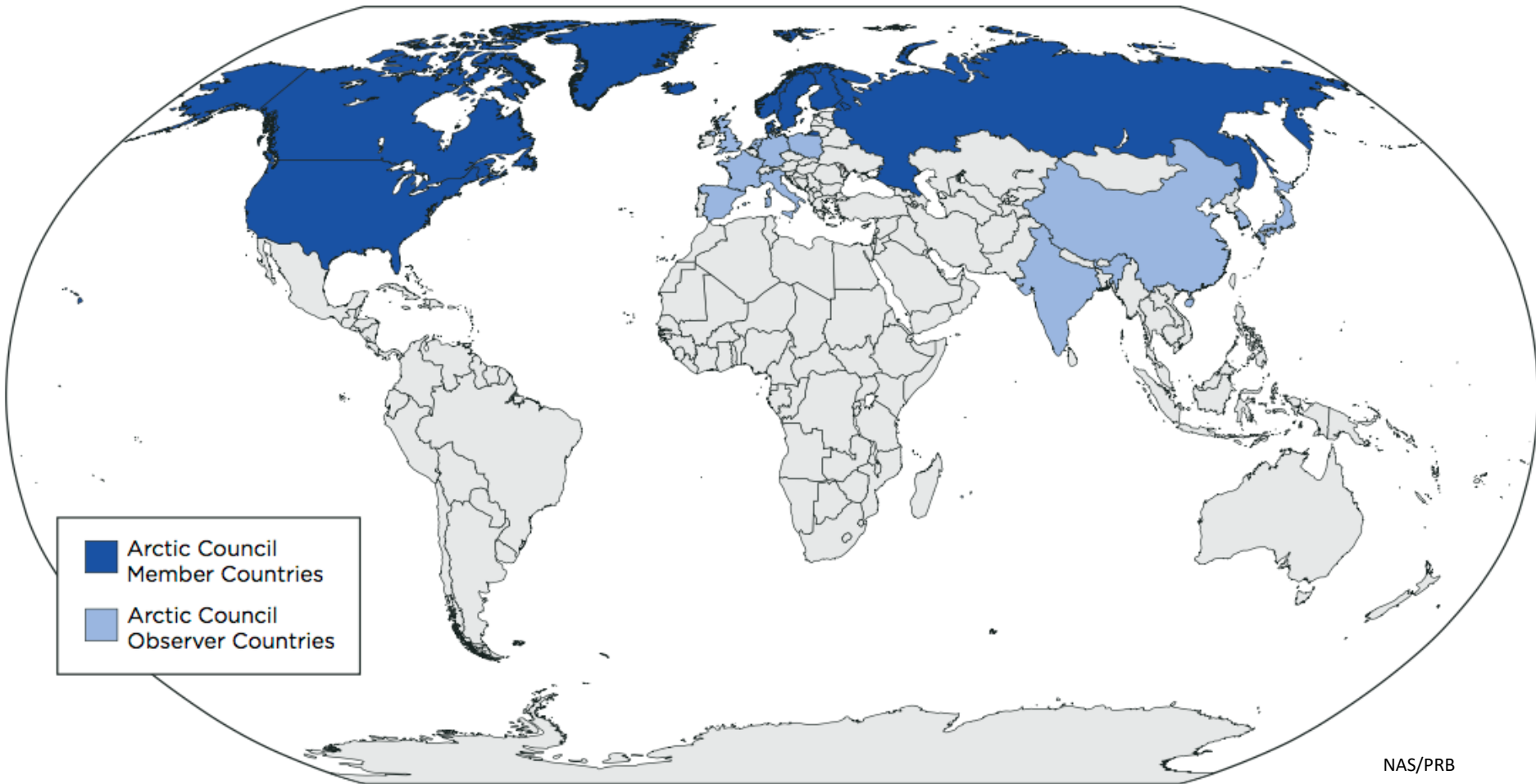
# Permanent Participants

- Aleut Int'l Association
- Arctic Athabaskan Council
- Gwich'in Council Int'l
- Inuit Circumpolar Council
- Russian Assoc. of Indigenous Peoples of the North (RAIPON)
- Saami Council



Six heads of delegation for the indigenous permanent participant organizations of the Arctic Council. March 13, 2017.  
Juneau SAO meeting

# Arctic Council States: 8 members, 12 observers



# 12 observer states

Germany

United Kingdom

France

Italy

China

Japan

Poland

The Netherlands

Spain

India

South Korea

Singapore

\*EU

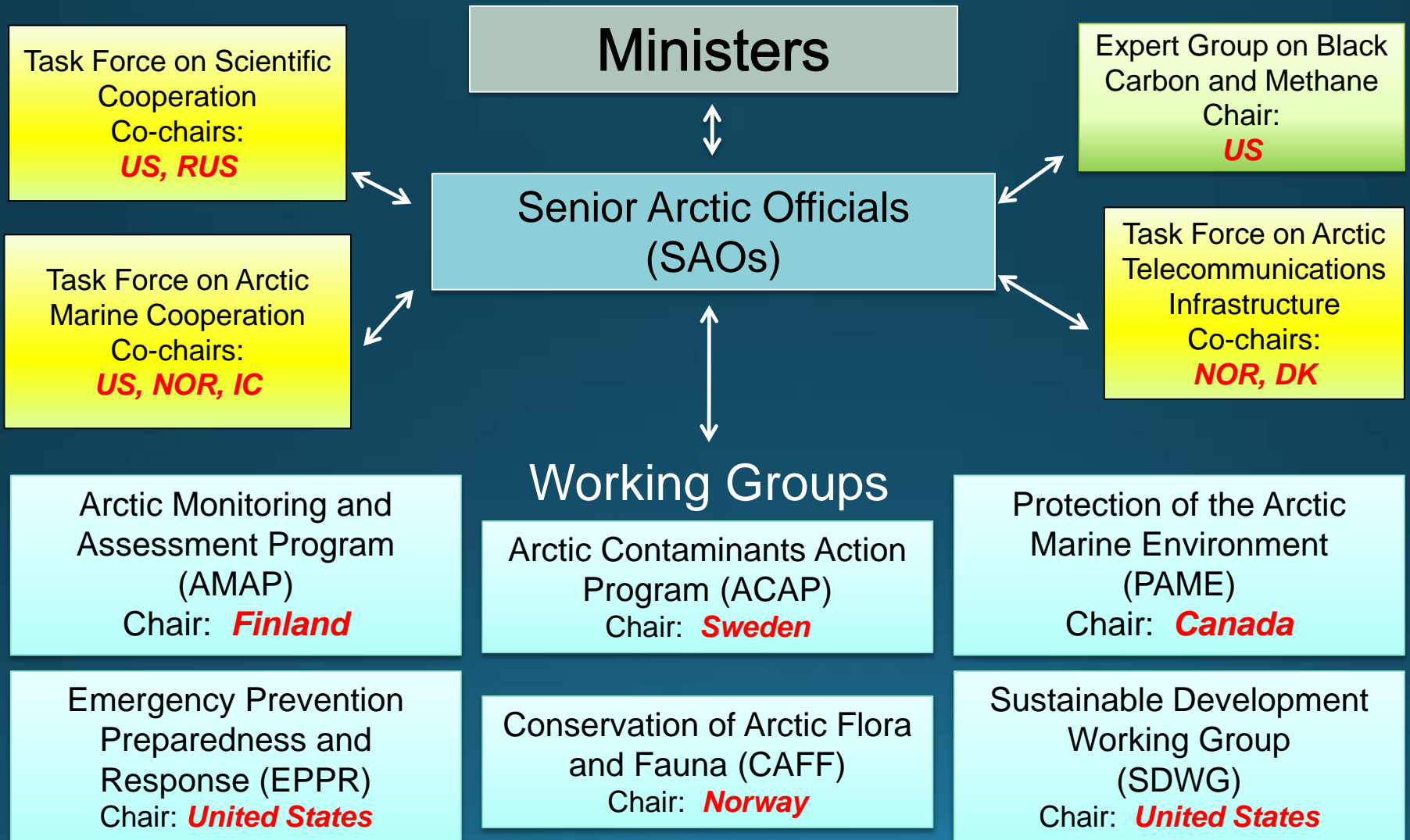


# 20 observers from inter-governmental, inter-parliamentary, and NGOs

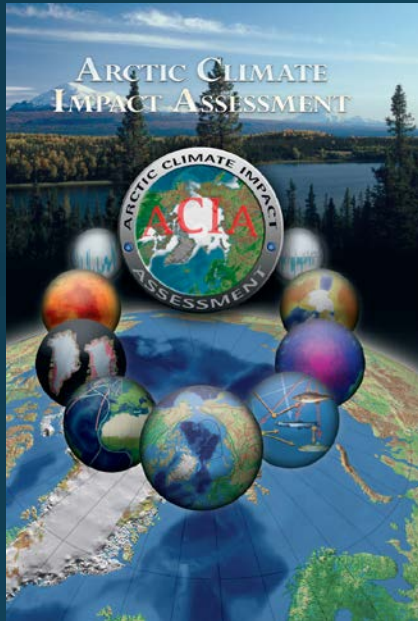
UN Economic Comm. for Europe (1998)  
United Nations Environment Program (1998)  
Nordic Council of Ministers (1998)  
Arctic Parliamentarians (1998)  
Int'l Fed. of Red Cross & Red Crescent Societies  
(2000)  
Int'l Union for the Conservation of Nature (2000)  
North Atl. Marine Mammal Comm. (2000)  
United Nations Development Program (2002)  
Nordic Environment Finance Corporation (2004)  
International Arctic Science Committee (1998)

Northern Forum (1998)  
WWF for Nature-Global Arctic Prog. (1998)  
International Union for Circumpolar Health (1998)  
Advisory Comm.on Protection of the Seas (2000)  
Association of World Reindeer Herders (2000)  
Circumpolar Conservation Union (2000)  
Int'l Arctic Social Sciences Association (2000)  
Int'l Work Group for Indigenous Affairs (2002)  
University of the Arctic (2002)  
Arctic Cultural Gateway (2004)

# Arctic Council Structure



# Arctic Council reports



# Agreements Adopted

- Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic
- Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic
- Agreement on International Cooperation in Scientific Research (TBD 2017)



# New international science cooperation agreement



Bloom  
USA/DOS  
Co-Chair



Barbin  
Russian Fed.  
Co-Chair



Falkner  
USA/NSF  
HOD

- Created via Arctic Council. US & Russia Co-Chaired.
- Legally binding. To be signed 5/11 at Fairbanks Ministerial.
- Purpose is to enhance international cooperation in scientific activities to increase effectiveness & efficiency in developing scientific knowledge about the Arctic, not to set scientific priorities. Facilitates access (people, equipment, samples, data).
- 8 Arctic nations are signatories, as with the other 2 agreements, but an article supports research w/non-parties.
- Specific articles on traditional and local knowledge encouraging use, communication, and participation.
- USARC designated “competent authority” as US POC.

# U.S. Chairmanship Team



**Chair of the Arctic Council**  
Secretary of State Rex Tillerson



**Chair of the Senior Arctic Officials**  
Ambassador David Balton



**U.S. Senior Arctic Official**  
Julie Gourley

# Chairmanship Thematic Pillars

## ARCTIC COMMUNITIES

- Renewable Energy
- Water Sanitation and Health
- Water Resources Vulnerability Index
- Freshwater Security
- Telecommunications Infrastructure
- Suicide Prevention and Mental Wellness

## ARCTIC OCEAN

- Search & Rescue Exercises
- Marine Environmental Protection
- Marine Protected Areas Network
- Arctic Ocean Cooperation
- Arctic Ocean Acidification

## ARCTIC CLIMATE

- Short-lived Climate Pollutants
- Arctic Climate Adaptation and Resilience
- Pan-Arctic Digital Elevation Model
- Climate Indicator System

# Chairmanship initiatives

- Pan-Arctic Digital Elevation Model
- Exercise of the “Marine Oil Spill Pollution Agreement”
- Rising Sun project (reducing suicide)
- Circumpolar LEO
- Water Sanitation Health (WASH)
- Search and Rescue Exercises (tabletop)
- Prevention, Preparedness, & Response in Small Communities
- Arctic Ocean Acidification
- One Health
- Arctic Climate Resilience
- Reduction of Black Carbon from Diesel Sources in Russia
- Arctic Remote Energy Atlas (AREA)
- Arctic Remote Energy Network Academy (ARENA)
- Arctic Invasive Species
- Marine Protected Areas Network



# Task Force on Telecommunications Infrastructure in the Arctic (TFTIA)

**Purpose:** produce a report that assesses existing circumpolar telecomm infrastructure and identifies unmet communication needs for greater regional connectivity, human services, scientific observations, navigation and emergency response support.

Coordinate w/ Arctic Econ. Council's telecomm working group



# Black Carbon and Methane

- “Task Force” on Black Carbon and Methane concluded during Canadian Chairmanship, delivered an “AC Framework for Action”
- Arctic States and interested Observers submitted national reports on black carbon and methane emissions reductions to the Council.

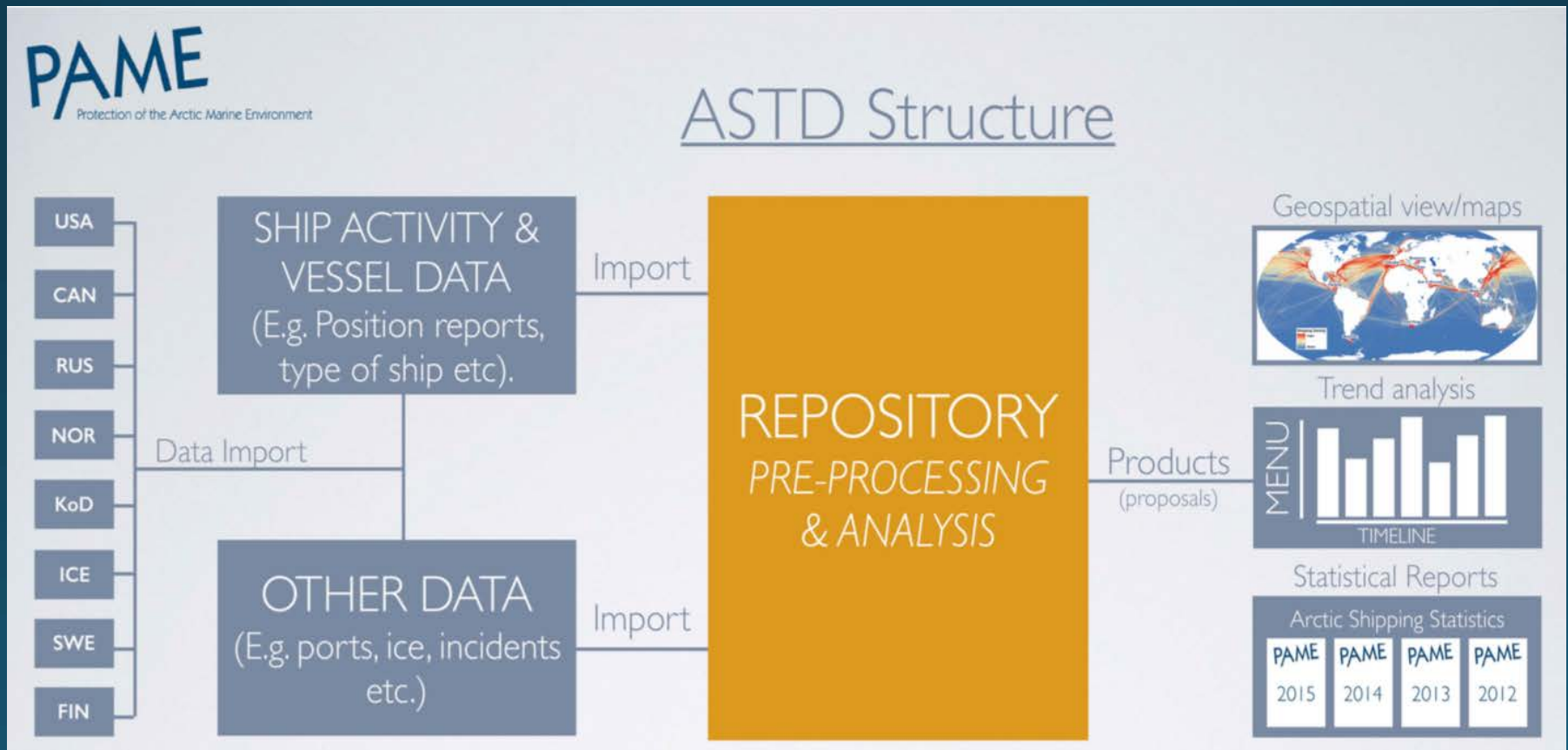


by Mark Bennett, courtesy of the National Oceanic and Atmospheric Administration.

- On 5/11/17, “Expert Group” will provide recommendations report for future voluntary action
- Then, a forum will explore collaboration on those recommendations

# Arctic Ship Traffic Data

**Purpose:** collect and share historical data about shipping activity in the Arctic for trend analyses and related purposes.



# Other Chairmanship Goals

1. Introduce new long-term priorities into the Arctic Council
2. Continue to strengthen the Arctic Council as an intergovernmental forum
3. Raise Arctic and climate change awareness within the United States and across the world





# Public outreach: “Why the Arctic Matters”

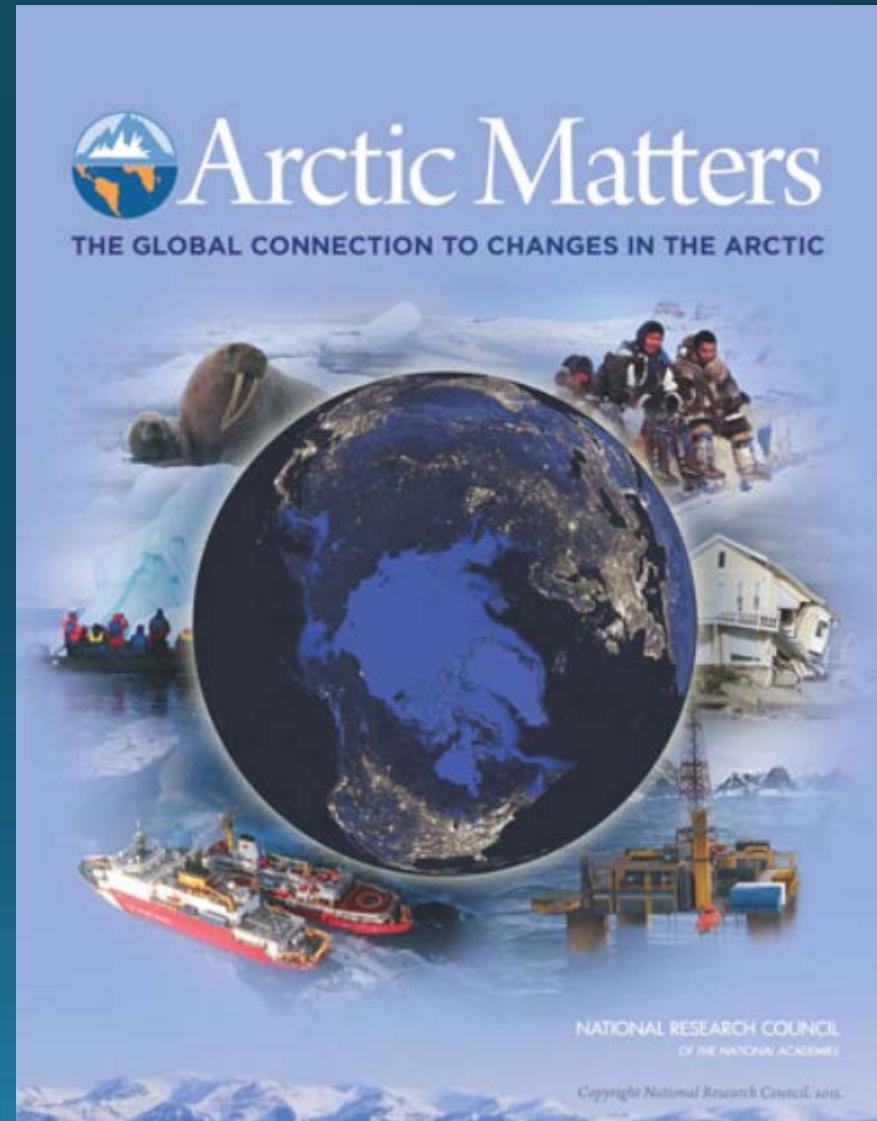
1/14/16 event in Washington, DC

Sponsored by the USARC

Over 600 attendees, in person, many more online.

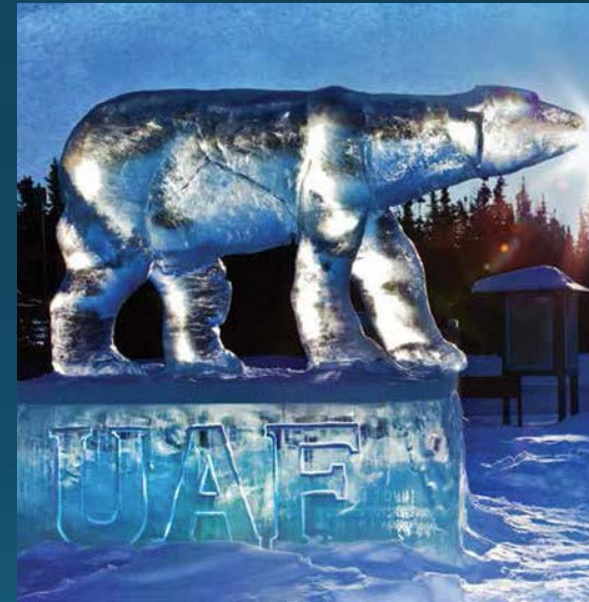
Video, booklet and poster created

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE



# Fairbanks Ministerial

- May 10-11, 2017
  - 10<sup>th</sup> Ministerial since 1996
  - First US Ministerial was in Barrow (2000)
- Plenary meeting
  - Highlight achievements during the U.S. Chairmanship
  - Introduce the Finnish Chairmanship





# Finland's Chairmanship Program: 2017-2019

## “Exploring Common Solutions”

Highlights two milestones related to the Arctic:

- Paris Agreement (climate)
- 2030 Agenda for Sustainable Development

Wants greater coop. w/ Arctic Eco. Council to facilitate B2B activities and econ. devel.



## Priorities:

- Environmental protection
- Connectivity (telecomm networks & services)
- Meteorological & oceanographic cooperation
- Education

## Areas of Work of the Arctic Council:

- The Environment & Climate
- The Seas
- The People
- Strengthening Arctic Cooperation



# The White House Arctic Science Ministerial

## September 2016

- 1) Arctic Science Challenges and their Regional and Global Implications
- 2) Strengthening and Integrating Arctic Observations and Data Sharing
- 3) Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and Shape Global Responses
- 4) Arctic Science as a Vehicle for STEM Education and Citizen Empowerment



[www.whitehouse.gov](http://www.whitehouse.gov)

# SUPPORTING ARCTIC SCIENCE

A SUMMARY OF THE WHITE HOUSE ARCTIC SCIENCE MINISTERIAL MEETING

SEPTEMBER 28, 2016 – WASHINGTON, DC

MATERIALS DEVELOPED BY THE ARCTIC EXECUTIVE STEERING COMMITTEE AND PARTICIPANTS IN THE ARCTIC SCIENCE MINISTERIAL, HOSTED BY THE WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY, WERE COMPILED AND EDITED BY THE US ARCTIC RESEARCH COMMISSION



CFR-sponsored Independent Task Force on U.S. Strategy in the Arctic recent report:

## “Arctic Imperatives: Reinforcing U.S. Strategy on America’s Fourth Coast”

Six main goals:

- Sustain robust research funding to understand the ongoing profound changes in the region and their impact on the globe
- Ratify UNCLOS
- Fund up to six icebreakers
- Improve telecomm, energy, and other infrastructure
- Deepen work with all Arctic states, including Russia
- Support sustainable development for the people of the Arctic and further consultation with Alaska Natives

This report can be accessed via [www.cfr.org/ArcticImperatives](http://www.cfr.org/ArcticImperatives).

# ARCTIC UPDATE



THE US ARCTIC RESEARCH COMMISSION DAILY EMAIL NEWSLETTER

March 16, 2017

## Today's Events:

No Arctic science events are planned for today.

## Media

**Why is China's Smog so Bad? Researchers Point Far Away to Melting Arctic.** In China, the winter of 2013 was an "airpocalypse." A thick soup of harmful smog cloaked its biggest cities, contributing to at least 90,000 deaths and sickening hundreds of thousands more. Things haven't gotten much better since then, even though the country has enacted tough new emissions controls. A new study may explain why. Melting sea ice and increasing snow across Siberia have altered large-scale weather patterns, replacing currents that used to ventilate China with stagnant air that lets pollution accumulate. "The ventilation is getting worse," says study author Yuhang Wang, an atmospheric scientist at Georgia Institute of Technology in Atlanta. "We think climate change, as it is driving rapid warming of the Arctic, is having a large effect on pollution in China." [Science Mag](#)



**Fifth Meeting on Regulations of Arctic Fishing Will be Held in Reykjavik.** The fifth meeting on regulation of Arctic fishing will open in Reykjavik on March 18. The meeting will regulate the rules for fishing in the international zones of the Arctic Ocean. The representatives in the meeting are the "Arctic Five" (Russia, USA, Canada, Norway and Denmark) and other interested states take part in the meeting, including the EU, Iceland, China, the Republic of Korea and Japan. The meeting will continue work on the draft Agreement on the prevention of unregulated, illegal and unreported fishing in the international area of the Arctic Ocean, as the parties expect

USARC's daily  
"Arctic Update"  
newsletter

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<https://vimeo.com/187496629>