

# Identifying Priorities for International Arctic Research

Arctic Circle Assembly 2016  
Breakout Session:

## How to Connect with Research across Boundaries

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Executive Secretary  
International Arctic Science Committee



# The Need for an Internationally Coordinated Arctic Research Planning Effort

- Rapid transformations are affecting the entire Earth system, including climate, economics and geopolitics
- Changes are challenging our understanding and our ability to provide knowledge for decision-makers
- There is a sense of urgency and research challenges must be addressed in a coordinated and timely manner
- ICARP III provided the process to integrate priorities for forward-looking, collaborative, interdisciplinary Arctic research and observing, addressing these challenges





# Developing a Roadmap for Future Arctic Research

- ICARP III was an open process and welcomed more than 20 international bodies
- It was not a single conference, but a series of events, between ASSW 2014 and ASSW 2015
- Each partner contributed by organizing specific events and activities
- Working with people who live in or near the Arctic and building constructive relationships were key elements





# Integrating Arctic Research - a Roadmap for the Future

3<sup>rd</sup> International  
Conference  
on Arctic Research  
Planning  
ICARP III





# Arctic Research Priorities for the Next Decade

- The Role of the Arctic in the Global System
- Observing and Predicting Future Climate Dynamics and Ecosystem Responses
- Understanding the Vulnerability and Resilience of Arctic Environments and Societies and Supporting Sustainable Development



# Overarching Messages

- **Communication:** Facilitate science-policy knowledge transfer between research community and end-users
- **Traditional and Local Knowledge:** Greater effort to incorporate traditional and local knowledge and to engage northern and indigenous communities in setting priorities, co-designing and co-producing research
- **Capacity Building:** Build long-term human capacity among researchers, decision-makers and Arctic indigenous and nonindigenous residents





The Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC) is a key international flagship initiative under the auspices of the International Arctic Science Committee (IASC). The main aim of MOSAIC is to improve our understanding of the functioning of the Arctic coupled system with a complex interplay between processes in the atmosphere, ocean, sea ice, and ecosystem coupled through biogeochemical interactions. The main objective of MOSAIC is to develop a better understanding of these important coupled-system processes so they can be more accurately represented in regional- and global-scale weather- and climate models. Observations covering a full annual cycle over the Arctic Ocean of many critical parameters such as cloud properties, surface energy fluxes, atmospheric aerosols, small-scale sea-ice and oceanic processes, biological feedbacks with the sea-ice and ocean, and others have never been made in the central Arctic in all seasons, and certainly not in a coupled system fashion. The main scientific goals focus on data assimilation for numerical weather prediction models, improved sea ice forecasts and climate models, ground truth for satellite remote sensing, energy budget and fluxes through interfaces, sources, sinks and cycles of chemical species, boundary layer processes, habitat conditions and primary productivity and stakeholder services. In view of these important expected outcomes and the international collaborative character of MOSAIC IASC endorses this initiative with great enthusiasm.

Susan Barr, IASC President

# MOSAIC

Multidisciplinary drifting Observatory  
for the Study of Arctic Climate

SCIENCE PLAN

Dec  
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INTERNATIONAL ARCTIC  
SCIENCE COMMITTEE  
IASC [www.iasc.info](http://www.iasc.info)

March 2016



ICARP III	US-led Arctic Science Ministerial	EU Arctic Policy
The Role of the Arctic in the Global System	Arctic Science Challenges and their Regional and Global Implications	International Cooperation on Arctic Issues
Observing and Predicting Future Climate Dynamics and Ecosystem Responses	Strengthening and Integrating Arctic Observations and Data Sharing	Climate Change and Safeguarding the Arctic Environment
Understanding the Vulnerability and Resilience of Arctic Environments and Societies and Supporting Sustainable Development	Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and Shape Global Responses	Sustainable Development in and around the Arctic
	<i>Arctic Science as a Vehicle for STEM Education and Citizen Empowerment</i>	







# Thank You!

<http://icarp.iasc.info>

