# IASC-PAG MOU at ASSW 2014

Sign renewal April 2014

**LETTER OF AGREEMENT**

**BETWEEN**

**THE PACIFIC ARCTIC GROUP (PAG)**

**AND**

**THE INTERNATIONAL ARCTIC SCIENCE COMMITTEE (IASC)**

1. General Introduction

   The IASC was founded in 1990 in the context of post-perestroika renewal of international Arctic cooperation. Initial members included the USSR and several European and North American nations. Over time membership evolved and grew to accommodate the changing status of original member nations and the growing interests in Arctic science in many other nations, including several from Asia, who joined the IASC. To provide a focal point for discussion of science of particular interest to the new Asian members, and also to enhance discussion of Arctic science issues from a Pacific perspective, IASC agreed in 1999 to create the PAG as a subset of the IASC, with its own leadership and secretariat. In 2008, the IASC developed a plan for restructuring itself and determined that the PAG had developed sufficient strength that it could stand on its own as a separate organization, and the PAG members agreed. Yet the scientific interests of PAG and IASC retain much in common, and it is in the interests of both groups to maintain strong coordination and collaboration. This Letter of Agreement sets forth the rationale and objectives for continued strong interaction between the two groups.

2. PAG

   a. Introduction

   The Arctic marine environment is of significant scientific concern to the nations on the Pacific side of the Arctic. The PAG has adopted 10 science themes that describe its interests and provide motivation for the work of the involved nations and scientists.

   - Theme 1:Undertake seasonal and interannual ocean observations in the Pacific Arctic Sector where recent maximum sea ice retreat is occurring.
   - Theme 2: Understand oceanic and atmospheric processes in the Pacific Arctic, including the feedback loops, that are critical to mid-latitude climate variability.
   - Theme 3: Monitoring fresh water input via precipitation, riverine input, oceanic input, glacial and sea ice melt in the Pacific Arctic sector will improve our understanding of mid-latitude climate variability and provide additional information to support theme 1.

- Theme 4: Identify and monitor ecosystem and biological and chemical indicators (ice, water column, benthic, higher trophic organisms) of climate change in the Pacific Arctic.
- Theme 5: Investigate sea ice thermodynamics including sea ice thickness, extent, and its interactions with ocean and atmospheric forcing in the Pacific Arctic region. Investigate sea ice dynamics such as sea ice drift, interactions between different ice packs.
- Theme 6: Investigate $CO_2$, $N_2O$, $CH_4$ in the air and surface water in the seaice retreated waters to estimate their sea-air fluxes in the western Arctic Ocean and the Pacific Arctic waters and evaluate their role of global ocean carbon and nitrogen cycles, including relationshipsto seawater acidification.
- Theme 7: Understanding the connectivity of warm Atlantic inflow to the Pacific sector, heat flux throughout Arctic, and associated biodiversity/invasion of Atlantic-species into the region. Physical gateways should be mapped and monitored, including outflow through the Canadian Arctic Archipelago.
- Theme 8: The Arctic Ocean is very poorly mapped from the seafloor to the ice above. Significant information gaps include the bathymetry, biodiversity, and knowledge of ocean currents and their variabililty over space and time. Exploration of the unknown Pacific Arctic region is essential for the construction of base maps necessary for the planning of future monitoring efforts.
- Theme 9: The Pacific water inflow through the Bering Strait region is a key conduit for heat, salt, nutrients, and biological material (including genetic material) to the Arctic basin that influences sea ice cover, halocline formation, and the carbon cycle.
- Theme 10: Nearshore coastal processes and subsea permafrost dynamics are important processes in the shallow Pacific shelf areas are subject to climate change impacts.
- Theme 11: The open and closing of the Pacific gateway has occurred over geological time periods with dramatic impact on the Arctic system. The paleorecord provides a long-term record for comparative evaluation of climatic processes relative to contemporary studies in prior themes.

a. Definition of the Pacific Arctic Region

The Pacific Arctic Region is loosely defined as the area lying between Russia and Alaska (Bering Strait) and extending northward including the Beaufort Gyre and Arctic Ocean and southward including the Bering Sea. The area also includes seasonally ice-covered seas. PAG activities may extend beyond these boundaries based on project objectives.

b. PAG Objectives

The PAG has four basic objectives: 1) To facilitate and coordinate science operations among PAG member countries; 2) To promote and facilitate data accessibility and integrated data bases for the region; 3) To serve as a forum for

information exchange on Pacific Arctic Region (PAR) science programs; and 4) To establish and maintain a direct link between PAG and other relevant science organisations.

a. PAG GENERAL MEMBERSHIP

The PAG general membership consists of at least one member from each country or institution represented by the PAG area of interest. The membership consists of both Scientists and Program Managers and should reflect an appropriate balance between the principal PAG science themes: climate, contaminants, human dimensions and structure and function of Arctic ecosystems.

b. PAG CHAIR AND EXECUTIVE COMMITTEE

The PAG Executive Committee consists of a Chair, Vice Chair, Executive Member and Project Coordinator. As members depart, nominations for membership to the Executive Committee are evaluated by the Committee. In addition, the Executive Committee may, from time to time, strike an “ad hoc” committee to deal with a specific issue.

c. PAG PROJECT COORDINATOR

The PAG Project Coordinator acts as the liaison between the interests of the Executive Committee and the project groups. The Project Coordinator will serve as a resource to provide scientific support for consensus and assist in promoting approved projects. The Project Coordinator is nominated by the PAG Executive Committee.

d. PAG SECRETARIAT

The functions of the PAG are supported by a small Secretariat, the location of which will rotate among member countries. The Secretariat will be directed by the Executive Committee and work closely with the Project Coordinator and project groups as appropriate.

2. IASC

IASC was established in 1990, began operations in 1991 and today comprises 18 member countries. The IASC member organizations are national science organizations covering all fields of Arctic research. Each national member organization has a mechanism to provide ongoing contact between its IASC council member and its Arctic science community.

IASC draws on its structure to identify scientific priorities, members of working groups, etc. An international science program planned or recommended by IASC should be of high priority to Arctic or global science.

The organizational needs of IASC are served by the IASC Secretariat located in Potsdam, Germany.

IASC is an international associate of the International Council for Science, ICSU, and an observer in the Arctic Council. IASC also has connections to numerous international Arctic organizations.

Representatives of national scientific organizations from all 18 member countries form the IASC Council. The President of IASC is elected by Council, who also elects 4 Vice-Presidents to serve on the Executive Committee. Council usually meets once a year during the Arctic Science Summit Week, ASSW.

IASC Executive Committee operates as a board of directors and manages the activities of IASC between Council meetings. The Chair is the President of IASC.

1. Common Interests

   During its brief history, the PAG has demonstrated a strong interest in science related to the Arctic Ocean and its peripheral seas, including physics of the ocean and sea ice, ecology and biogeochemistry, geology, and environmental modeling. The IASC has demonstrated its strong interest in these areas by establishing as part of its restructuring a Marine Systems Standing Committee.

2. Declaration of Intent

   Recognizing the large area of common interests, the PAG and the IASC intend to work together to advance scientific knowledge in mutually agreed areas, to jointly support education and outreach efforts, and to jointly provide advice to policy- and decision-makers who require scientific information as the basis for their actions. By working closely together, the IASC and the PAG can avoid costly duplication of efforts, and identify opportunities for sharing to reduce costs on each individually.

   This Letter of Agreement does not alter the terms of reference or organizational structure of either group and carries no financial implication.

   To facilitate coordination and collaboration, the PAG and the IASC agree in particular:

   a. To consult each other regularly regarding science interests and priorities and to develop collaborative or synergistic efforts whenever appropriate;

b. To involve the PAG in the preparation and participation of the annual ASSW;

c. To invite each other to meetings, including the IASC Marine Systems Standing Committee

d. To link each other's web sites

e. Others?

Signed

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| X | Y |
| Chair of PAG | President of IASC |
| _____ | _____ |
| Date | Date |