

Report to the AICC:

US Swedish Planning Workshop on Joint Arctic Research Using the I/B Oden

March 30 – April 1, 2015, Sigtuna, Sweden

The workshop was supported in a collaboration between the U.S. National Science Foundation (NSF), the Swedish Polar Research Secretariat (SPRS), the Swedish Research Council Vetenskapsrådet (VR), and the Swedish Research Council Formas.

Organizing Committee: Leif Anderson (Gothenburg University), Caroline Leck (Stockholm University), Patricia Matrai (Bigelow Laboratory for Ocean Sciences), and Peter Minnett (University of Miami).

About 15 scientists from each nation that included a broad representation of disciplines and representatives from each of the supporting government agencies attended the meeting.

The goal of the workshop was to bring together those with research and operational/logistical interests in the Arctic to discuss a baseline for establishing a new, longer-term collaborative relationship among US and Swedish scientists for Oden-based research in the Arctic Ocean. In addition, a pilot program for 2017/2018 with an interdisciplinary ocean-atmosphere focus was discussed, which is already a part of the SPRS agenda.

An additional cruise planning meeting was also conducted by participants on the 2015 NSF funded cruise using the Oden at the Petermann Glacier (Alan Mix, Oregon State, lead PI).

The meeting included three sessions:

**Session 1.** Processes for multiyear, multidisciplinary possibilities

*Chairs: Leif Anderson and Peter Minnett*

This session identified and explored the scientific demands and possibilities that could be undertaken if there was a multiyear US-Sweden collaboration on Arctic science using the I/B Oden. The discussion identified prioritized research topics, seasons, regions, and collaborations/overlaps. Breakout groups were formed to discuss the prioritized topics (what, when and where) that included, hydrography repeat sections, coring and geology, snow and ice interactions, surface energy budgets, sources and sinks of greenhouse gases, winter investigations, moorings, ocean-land interactions, sensors for continuous measurements, and synergy with other programs. The discussions identified a strong need for winter measurements (physics, chemistry, biology), repeat cruise tracks and drift stations. Currently, the Oden is only available for May-December work because of ice breaking

commitments in the Baltic Sea, which might limit research cruises during the winter months.

**Session 2.** SWE-US 2017 cruise plan

*Chairs: Caroline Leck and Patricia Matrai*

This session addressed the scientific priorities, collaborations and opportunities in a planned cruise (2017/2018?) based on the project framework for “The life cycle of clouds in the high Arctic summer”, which is part of the Swedish Roadmap for Polar Research. The session explored the possible links to other international upcoming programs and initiatives. The planned cruise is to occur in mid July – September 2017 and cover the open water season and freeze-up. The Oden would be moored to an ice floe and drift during the biologically most active season. The science has not yet been proposed in Sweden/US. The cruise may need to be delayed until 2018. An active discussion to identify needed measurements took place. Identified research areas included atmosphere-ice-ocean physics, chemistry, and biology, with topics ranging from aerosols and atmospheric radiation to upper ocean biological processes.

**Session 3.** Bi-lateral agency-level meeting (closed).

This was a closed session for government representatives from NSF, SPRS, VR, and Formas to discuss operational, funding and organizational issues.

A summary of Session 3 was provided to the participants. For the 2017 cruise, a June 2015 call is possible with an October 2015 deadline for NSF. Swedish and US proposals might be considered together. The cruise might be shifted to 2018 to accommodate differences in US/Sweden funding cycles. For future cruises, a scoping document would be required that includes who would be interested/involved, research plan, and general logistics requirements. Including Swedish partners would be beneficial but not required. Funding would be determined by science quality. Cruises might occur every other year, 3 years, or 5 years - not yet determined.

A workshop report will be prepared by the organizing committee, reviewed by the participants and funding agencies, and made public in spring 2015.