

MEETING

A Pan-Arctic Network to Study Past, Present, and Future Sea Ice Trends

***Arctic in Rapid Transition Implementation Workshop;
Winnipeg, Manitoba, Canada, 18–20 October 2010***

Rapid transitions in Arctic sea ice and the associated global integrated Earth system impacts and socioeconomic consequences have brought the Arctic Ocean to the top of national and international geophysical and political agendas. Alarming, there is a persistent mismatch between observed and predicted patterns, which speaks to the complexity of planning adaptation and mitigation activities in the Arctic. Predicting future conditions of Arctic marine ecosystems for climate change

requires interdisciplinary and pan-Arctic characterization and understanding of past and present trends.

The Arctic in Rapid Transition (ART) initiative is an integrative, international, interdisciplinary, pan-Arctic network to study spatial and temporal changes in sea ice cover and ocean circulation over broad time scales to better understand and forecast the impact of these changes on Arctic marine ecosystems and biogeochemistry. The ART initiative began in October 2008 and is still

led by early-career scientists. The ART science plan, developed after the ART initiation workshop in November 2009, was endorsed by the Arctic Ocean Sciences Board, which is now the Marine Working Group of the International Arctic Science Committee.

To make the ART science plan a reality, the ART implementation workshop, held at the Freshwater Institute, Fisheries and Oceans Canada, brought together 20 participants from seven countries. Half of these participants were early-career scientists. There was a broad consensus that the ART initiative will take a phased approach. The first phase (~3–5 years) will focus on developing an active international and multidisciplinary scientific network of scientists sharing a common interest in improving our understanding of the implications of sea ice transitions in the Arctic Ocean. Phase II (~3–5 years) will implement dedicated, coordinated, dispersed, international, and interdisciplinary field campaigns. Phase III will conclude with data synthesis including the development of robust scenarios regarding the future state of Arctic marine

ecosystems. Modeling will be integral to all three phases, as well mentoring and science education programs, to help maintain the identity of ART as a program driven by early-career scientists.

Ultimately, the integrative approach of ART will provide a means to better understand and predict changes in sea ice and physical forcings in the circumpolar Arctic and consequences for biological productivity. The legacy of ART will be a robust set of predictive tools that will contribute to a reinforcement of Arctic marine sciences into global assessments of the impact of climate change and increased human activity in the Earth system.

More information about the ART initiative can be found at <http://aosb.arcticportal.org/art.html>.

—CAROLYN WEGNER, Leibniz-Institut für Meereswissenschaften an der Universität Kiel (IFM-GEOMAR), Kiel, Germany; E-mail: cwagner@ifm-geomar.de; KAREN E. FREY, Graduate School of Geography, Clark University, Worcester, Mass.; and CHRISTINE MICHEL, Freshwater Institute, Fisheries and Oceans Canada, Winnipeg, Manitoba, Canada