

Meeting
ICARP II Marine Roundtable – Early Career Scientists

October 21-22, 2008
Geological Survey of Denmark and Greenland
Copenhagen, Denmark

MINUTES

Dr. Naja Mikkelsen (Host) and Dr. Carolyn Wegner (Chair) opened the meeting by welcoming everyone to Copenhagen and the Geological Survey of Denmark and Greenland.

Participants:

Dr. Christine Michel
Dr. Anna Nikolopoulos
Dr. Matt O'Regan
Dr. Marit Reigstad
Dr. Carolyn Wegner

Meeting Summary

Inventory of activities and recommendations for a future pan-Arctic program

Dr. Carolyn Wegner offered a brief summary of the recommendations of the Marine Roundtable (MRT) meeting in St. Petersburg in July 2008 for this workshop. Each participant provided an overview of his/her scientific background (including science management and coordination), projects, plans and the topics which would be the most interesting for a future program.

The following suggestions and recommendations for a future pan-Arctic program and beyond were made:

A: General recommendations

1. Improved communication between disciplines and different approaches (e.g. oceanographer and modeller, “paleo” and modern process people).
2. Standardized measurements for the same parameters (aim: different disciplines, but same language)
3. Linking physical, chemical, and biological oceanography, and developing better conceptual models of (physical) oceanographic processes on all geological timescales.
4. Inventory of parameters (what can be measured, what technological developments are necessary) and monitoring projects (IPY and post-IPY).

5. Support spatial and temporal integration of existing and emerging datasets.
6. Advanced integration of observations and modelling to improve predictive capabilities through an emphasis on the interpretation of existing results and comparison with model inputs/outputs.
7. Improved automated measurements and data transmission (new technological developments).
8. Improved access to of existing data sets, and an initiative that could foster their interpretation and integration.
9. Pan-Arctic science should be possible regardless the political borders.
10. Environmental aspects and the (political) outreach should be taken into account.

B: Suggested Topics and working areas:

1. Understanding physical forcing and its variability (in time and space) in states of transition: sea-ice, wind, mixing/upwelling, temperature, freshwater.
2. Effects of climate change on physical forcing, transport processes (heat, salt, freshwater, nutrients, sediments, contaminants), shelf productivity, carbon flow, ecosystems, food webs (incl. microbial community).
3. Change on timing and location of production hot-spots and upwelling areas.
4. Ecosystem shifts, resilience, and turning points.
5. Establish transport and exchange rates of heat, salt, sediments, contaminants, nutrients, and CO₂.
6. Focus on areas with low data coverage to really get new information and at the same time continuing standard measurements in areas with data sets which reach backwards in time to understand variability of the system at different time scales (i.e. extreme climate events of the past).
7. The feedbacks with the lower latitudes (downstream effects) need to be taken into account.

C: Suggested approaches and tools

1. pan-Arctic view
2. multidisciplinary
3. Time-series and Lagrangian observations
4. Standardized measurements in close cooperation with Arctic ROOS (marine part of Sustained Arctic Observing Networks, SAON)

5. Important tool for the project should be a 'special publication' containing synthesis articles that summarize the results for the scientific community and present improved conceptual models.

Focus of future Science plan

The participants discussed for many hours the focus and scientific framework of a future program initiated by the MRT. There was a general consensus that a future program should foster the integration of disciplines and regions on varying time-scales. Additionally the participants agreed that the communication between disciplines and between modellers and "observing" scientists needs to be improved.

The participants started to set-up a first draft for the future pan-Arctic program "Arctic in Rapid Transition (ART)", which will focus on the past, present, and future transitional states of the Arctic. The present Arctic is in state of transitions (environmental, social, political, economic) best visible in the changing sea-ice conditions, the impacts of which are manifest in all disciplines. To answer questions of policy makers, stake holders, and communities we need to know how the future Arctic will look. Therefore, ART, the proposed future pan-Arctic program, will focus on the past, present, and future transitional states of the Arctic. Changing sea-ice conditions were identified as a major forcing factor for Arctic transitional states, as they provide an umbrella, an unifying theme, for different forcing and processes, and for studying feedbacks within and between the physical, chemical, and biological Arctic environments in states of transitions.

Future activities

1. The Initial Draft of ART will be finished by November 28 and sent to the Secretary of the AOSB, Sara Bowden, and the Senior-Chair of the MRT, Dr. Bernard Coakley.
2. This Initial Draft will be reviewed by the working group after receiving comments and recommendations. The Initial Draft will need further discussion and work on before being presented to the MRT before the Arctic Science Summit Week in Bergen in March 2009. Therefore an additional meeting of the MRT Young Scientists in February 2009 is proposed to finalize the Initial Draft.
3. While ART will clearly delineate the scope and focus of the integrative science effort, an international and multidisciplinary workshop would be initiated in 2009 to foster communication between the different regional and disciplinary working groups and identify specific collaborative goals. Participation in the workshop would first require a short write-up specifying the potential participants' interest in ART and how they envision contributing. This entails admitting that the participants are interested in collaborating (with data and ideas) and working towards a common goal.
4. The possibility of the MRT evolving to become the kernel for this larger international effort to integrate data from the Arctic Marine Sector using an integrative, multi-disciplinary, pan-Arctic approach (i.e. different 'working groups') was discussed. This could entail annual/biannual workshops, to foster coordinated work towards achieving very specific goals.

The meeting adjourned at October 22 at 14:30.