

DESERT RESEARCH INSTITUTE'S ARCTIC RESEARCH PROGRAMS

GREENLAND ICE SHEET PROJECTS GISP2 AND GRIP

Dr. Joe McConnell
Ice core chemistry - continuous flow ICPMS

Dr. Gregg Lamorey
Bore-hole ice fabric logging for mass balance
studies

GEOCHRONOLOGICAL RESEARCH

Dr. Glenn Berger
Thermo-Luminescence dating of sediments, lake
and ocean

ATMOSPHERIC STUDIES

Drs. Melanie Wetzel and Randy Borys with Dr. Cathy
Cahill and Dr. Glenn Shaw at the UAF
Inter-annual variability of UV irradiance



Witness The ARCTIC

Chronicles of the NSF Arctic Sciences Program

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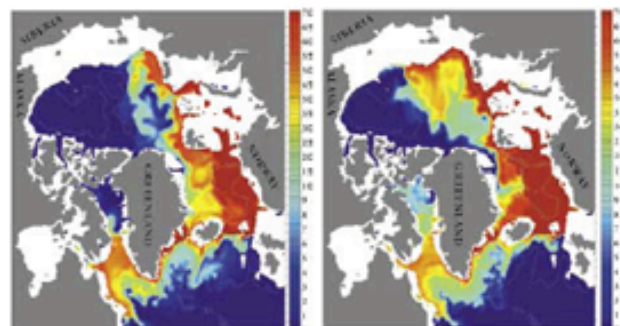
International Meeting Explores Change in the Arctic

Researchers from around the world presented and discussed evidence of rapid environmental change in the Arctic at the first Study of Environmental Arctic Change (SEARCH) Open Science Meeting (OSM), held 27–30 October 2003 in Seattle, Washington. Over 440 social and natural scientists, policy makers, and stakeholders from 18 countries explored the basic premise of SEARCH—that a complex of interrelated changes is occurring across arctic terrestrial, oceanic, atmospheric, and human systems.

SEARCH is an interagency effort to understand the causes, connections, and consequences of recent arctic environmental changes, emphasizing their interactions with global climate change and potential impacts on the biosphere, including human social and economic well-being. Currently more than 40 projects are funded as SEARCH activities by U.S. agencies. Many more projects relevant to SEARCH objectives are supported through other programs. SEARCH is developing cooperative relationships with many of the pertinent arctic science programs sponsored by other nations and international groups (see International Plans, page 3).

The SEARCH Open Science Meeting's goals were to encourage scientists from a range of disciplines to

- share evidence of environmental change in the Arctic,
- identify results from individual research projects that could inform the overall SEARCH objectives, and
- contribute to the SEARCH program either through linking their ongoing work to this program or through the design of new projects.



Data collected during several cruises in 1933–35 suggested that in the late 1980s, warm Atlantic water moved rapidly into the Arctic Ocean (right panel), a major change compared with its previous distribution (left panel). These observations were so striking and had such potentially important ramifications that they prompted members of the scientific community to begin organizing the Study of Environmental Arctic Change (SEARCH; see box page 2). The model illustrated depicts the change in distribution of Atlantic water at 200–300 m below sea level. (Madarski et al. 2000. *Geophysical Research Letters* 27 (22): 3743)

The National Science Foundation Office of Polar Programs (NSF-OPP) sponsored the OSM, with additional support from the International Arctic Science Committee (IASC) and the U.S. agencies in the SEARCH Interagency Working Group (IWG; see box page 2).

All of the OSM sessions were enriched by the valuable participation of undergraduate and graduate students. A student scholarship program, sponsored by OPP, NASA, the Department of Energy Atmospheric Radiation Measurement Program, the Alaska Native Science Commission, and ARCUS, provided full or partial funding of conference expenses for 45 students, and a student poster competition awarded winship sponsorship to attend a future scientific conference. The contributions of these young investigators were critical to the success of the SEARCH OSM.

Presentations and Discussions

Organized around the broad themes of Changes and Impacts, Feedbacks, and Drivers and Causes, the OSM included over 280 oral and poster presentations. With input from a diverse international and interdisciplinary community, the meeting's agenda included a variety of sessions, including

- keynote talks,
- concurrent science sessions with contributed papers,
- panel discussions, and
- poster sessions.

Keynote talks, including a point-counterpoint session, provided a broad overview of the scientific and policy issues of arctic change. Two moderated panel discussions provided opportunities to examine key

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