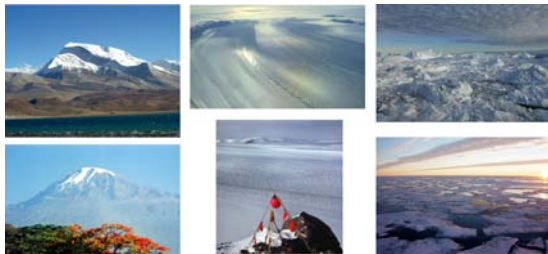


INTERNATIONAL GLACIOLOGICAL SOCIETY

International Symposium on Earth's Disappearing Ice: Drivers, Responses and Impacts

A celebration of the 50th anniversary
of the Byrd Polar Research Center
(formerly The Institute of Polar Studies)

Byrd Polar Research Center
The Ohio State University
Columbus, Ohio, 43210, USA
15– 20 August 2010



Co-sponsored by

Byrd Polar Research Center
Climate, Water & Carbon Program
The Ohio State University
FIRST CIRCULAR
June 2009

<http://www.igsoc.org/symposia/>
http://bprc.osu.edu/workshops/igs_2010/

The International Glaciological Society will hold an International Symposium on 'Earth's Disappearing Ice' in 2010. The symposium will be held in Columbus, Ohio, USA, from 15 to 20 August 2010.

THEME

One of the most visible indicators of climate change is the response of Earth's ice cover. Over the second half of the 20th century alpine glaciers worldwide retreated. Satellite observations over the last two decades reveal rapid changes in many outlet glaciers that drain large sections of the Greenland and Antarctic ice sheets. Ice-shelf disintegration is becoming more frequent with consequences for the discharge of land-based ice to the oceans. The extent of summer sea ice on the Arctic Ocean is declining and the possibility of ice-free summer conditions well before the end of the century is not outside the realm of possibility. This symposium will focus on the drivers for such changes, the potential feedback and responses of the climate system to these changes and the likely impact that might be expected in response to the ongoing large-scale deglaciation of the planet. An additional goal of the conference is to identify major gaps in our scientific understanding, observational databases, modeling approaches and the need for enhanced human capital and fiscal resources to advance our predictive capability.

TOPICS

1. **Sea ice extent and thickness changes in the Arctic and Antarctic**, focusing on the different driving mechanisms, responses in the Arctic versus the Antarctic, potential impact on the ocean–atmosphere system, regional climate variability, polar ecosystems, human systems and infrastructure.
2. **Tidewater glacier dynamics, iceberg calving and sedimentation dynamics**, including observations and parameterizations of calving from floating and grounded termini, the role of sedimentation in grounding line stability, and interactions between ice-marginal processes and glacier speed.
3. **Ice shelf dynamics**, including the preconditioning and eventual mechanisms by which breakup occurs, impacts of breakup on the ocean–atmosphere system and adjacent land-based ice,

limitations to ice-shelf break-up suggested by past ice-sheet and ice-shelf configurations, and break-up scenarios under other climate regimes suggested by paleo-oceanographic and glacial geologic inference.

4. **Ice streams and outlet glacier dynamics**, including observations and modeling to elucidate the key mechanisms controlling flow and discharge with particular emphasis on subglacial processes.
5. **Glacier and ice-sheet mass balance**, including a global inventory and assessments, atmospheric and oceanic forcing, response to large-scale modes of climate variability, observational methods, modeling approaches and predictions, upscaling, partitioning into climatic and dynamic mass balance components, key unknowns, critical observations and limitations to progress.
6. **Alpine glaciers (at all latitudes)**, including observations, driving mechanisms, modeling, impact on associated watersheds and associated societal impact. Special emphasis on alpine glacier changes in regions where traditional forms of glaciological survey are limited and that may be especially vulnerable to climate change (such as the Himalayas and South American Andes).
7. **Records of past glacier changes**, including proxy histories that elucidate key drivers, responses and response rates.

ABSTRACT AND PAPER PUBLICATION

Participants wishing to present a paper at the workshop are required to submit an abstract. A pre-print of submitted abstracts will be provided for all participants at the symposium.

The Council of the International Glaciological Society has decided to publish a thematic issue of the *Annals of Glaciology* on topics consistent with the Symposium themes. Although the final volume title is yet to be determined, participants are encouraged to submit manuscripts for this volume.

PLEASE RETURN AS SOON AS POSSIBLE TO:

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SYMPOSIUM ORGANIZATION
Magnús Már Magnússon (International
Glaciological Society)

**SCIENCE STEERING AND EDITORIAL
COMMITTEE**

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LOCAL ORGANIZING COMMITTEE

Ellen Mosley-Thompson (Chair), Michele Cook, Lynn Everett, David Elliot, Paolo Gabrielli, Ian Howat, Lynn Lay, Garry McKenzie and Lonnie Thompson

ADDITIONAL ACTIVITIES

A half-day mid-week excursion will be organized to explore some of Ohio's glacial geology as well as its rich and diverse cultural history. Details will be forthcoming.

FURTHER INFORMATION

If you wish to attend the symposium please return the attached form as soon as possible. The Second Circular will give further information about accommodation, the general scientific program, additional activities, preparation of abstracts and final papers. Copies of the Second Circular will be sent to those who return the attached reply form. Members of the International Glaciological Society will automatically receive one. Information will be updated on the conference website, <http://www.igsoc.org/symposia/2010/ohio/> and http://bprc.osu.edu/workshops/igs_2010/ as it becomes available.

**INTERNATIONAL SYMPOSIUM ON
EARTH'S DISAPPEARING ICE COVER**

Columbus, Ohio, USA, 15–20 August 2010

Family Name: _____

Given Name(s): _____

Address: _____

Tel: _____

Fax: _____

E-mail: _____

- I hope to participate in the Symposium in August 2010
- I expect to submit an abstract

My abstract will be most closely related to the following topic(s):

- I would be interested in the midweek tour.