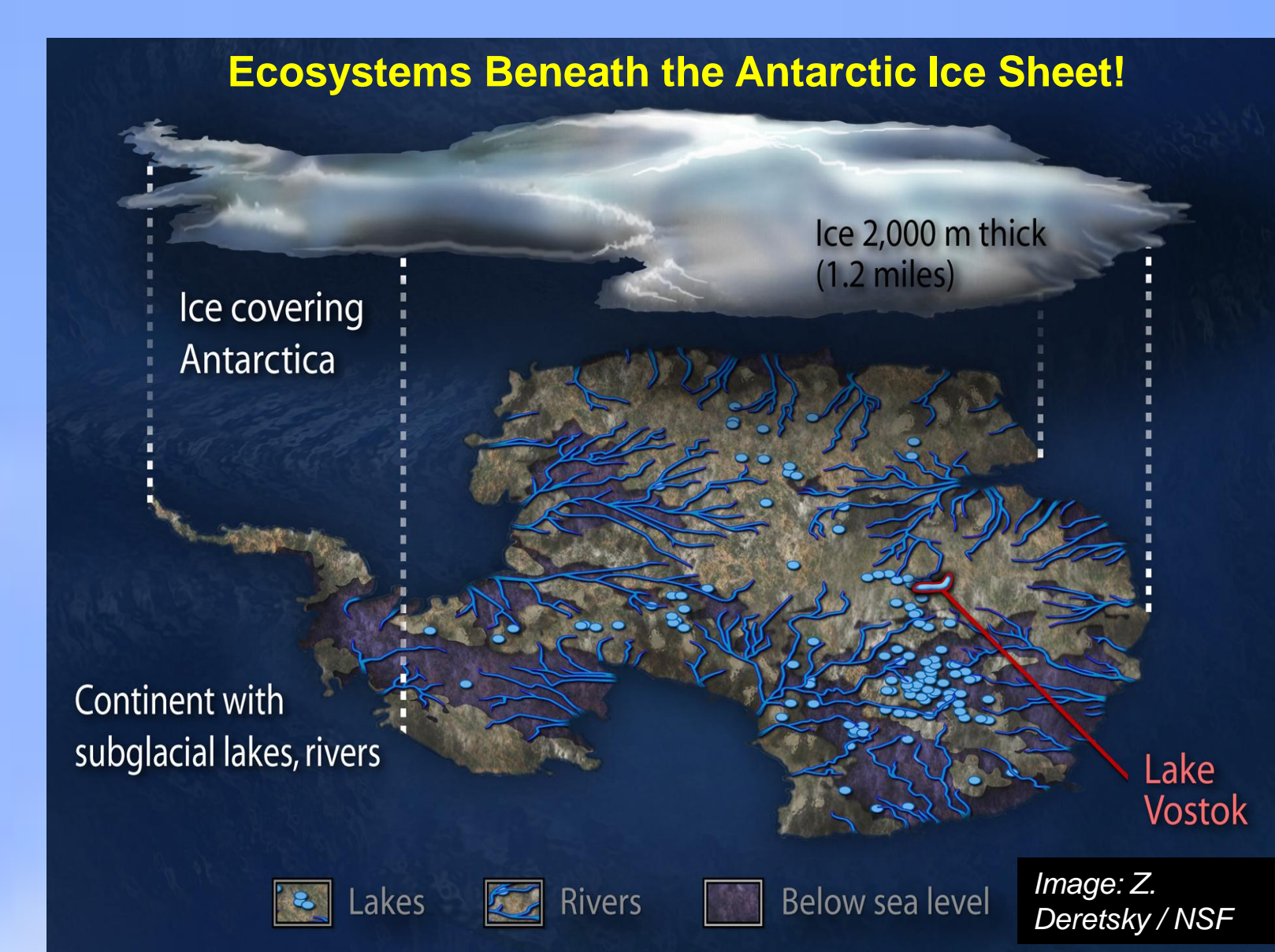


# SCAR Subglacial Antarctic Lake Environments (SALE) Scientific Research Program



For more details go to:  
<http://scarsale.tamu.edu/>



## Membership as of 2008:

J.C. Priscu (convener)	Limnology	USA	
M.C. Kennicutt (secretary)	Geochemistry	USA	
C. Barbante	Geochemistry	Italy	
R. Bell	Geology	USA	
S. Bulat	Microbiology	Russia	
C. Ellis-Evans	Limnology	UK	
S. Imura	Ecology	Japan	
Y. Li	Glaciology	China	
V. Lukin	Glaciology	Russia	
C. Mayer	Glaciology	Germany	
F. Pattyn	Glaciology	Belgium	
J-R Petit	Glaciology	France	
R. Powell	Geology	USA	
M. Siegert	Glaciology	UK	

## Introduction:

Subglacial aquatic environment exploration is a new paradigm for research in Antarctica. These isolated aquatic environments, which were considered a curiosity just a few short years ago, are now recognized as fundamental features that influence a broad range of important processes. The new knowledge to be garnered by studying these environments from various perspectives will lead to a new and fuller understanding of how the earth system functions. Antarctic subglacial aquatic environments are now recognized as continental-scale phenomena on a par with lower latitude river, stream, lake and wetland hydrological features. They are one of the last unexplored frontiers on our planet.

## Contributions to IPY programs

- SALE is a recognized IPY Program as SALE – the Unified International Team for Exploration and Discovery (SALE-UNITED). It is IPY Project 42.
- Antarctica's Gamburtsev Province Exploration program includes Subglacial Lake Characterization
- Subglacial aquatic environments are a target for exploration by the US-Norway Traverse 08-09
- SCAR SALE adheres to and abides by all IPY data policies.
- SCAR SALE participates in IPY education and public outreach activities (SALE UNITED was a featured program in the IPY Program Office Ice Sheet day in 2007).
- German SALE-UNITED activities are available on the German IPY homepage (in German and English)

## Key Achievements:

SALE's achievements are both scientific and programmatic, with one advancing understanding of these environments and the second facilitating and developing an international SALE community, both are important missions for a SCAR Scientific Research Program.

**Scientific Achievement #1** - *Subglacial accumulations of water are common features beneath thick ice sheets.*

**Scientific Achievement #2** - *Outburst discharges of subglacial water have repeatedly occurred over geologic time and are an on-going process that influences the dynamics of the overlying ice.*

**Scientific Achievement #3** - *A spectrum of subglacial aquatic environments exists*

**Programmatic Achievement #1** – *Building of a SALE community through workshops, meetings, and sessions at scientific meetings*

**Programmatic Achievement #2** - *Identification of major scientific and technological goals for SALE research and exploration through active engagement of the community*

**Programmatic Achievement #3** – *Provision of the framework for the US National Academies report on environmental stewardship of subglacial aquatic environments*

**Programmatic Achievement #4** – *Regular Meetings that serve as a forum for the discussion of science and technology amongst national programs*

**Programmatic Achievement #5** – *Education of the public through extensive and sustained coverage of SALE science in the lay and scientific press*

## National Programs:

**Subglacial Lake Ellsworth, West Antarctica (UK, US, BEL, GER, NZ, CHILE).** If funded, access to the lake could take place as early as the 2012/13 season.

**Subglacial Lake Vostok, East Antarctica (RUS, FRA, ITALY).** The sampling borehole is within 100 m of the lake.

**Subglacial Environments Beneath the Mercer and Whillans Ice Streams (USA).** If funded, the project will sample the hydraulic continuum from subglacial lakes through rivers as they flow to the Ross Sea.

**Subglacial systems near Dome C (ITALY).** The focus is on L. Concordia and hydraulic connectivity of lakes in the region.

**Antarctic Subglacial Processes and Interactions (ASPI; BEL).** Modeling of interactions between the ice sheet and subglacial environment.

**Ice - Water Interactions: numerical simulations (GER).** The project is modeling subglacial lake conditions and sensitivity to environmental change.

