



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Welcome to *PolarConnect*


Celebrating Antarctica Day  
with Michelle Brown and Dr. M. Kennicutt II

1 December 2011



Wimba Classroom - Arctic Research Consortium of the United States (ARCUS)

# WELCOME TO WIMBA



ARCTIC RESEARCH CONSORTIUM OF THE UNITED STATES

Exit - Lobby - Help

People (3)	
Kristin_Timm	
kristina_creek	
Kristin_Timm	

To: Main Room

Raise your hand to ask a question

List of all participants

Return to the lobby or exit

Slides will be shown here

If using VOIP, press and hold here to talk

Your connection strength

'Chat' with one person or the entire group

**Please note:**

- Participant using the telephone can mute/unmute by pressing \*6 on the phone.
- Today's event will be recorded and archived.

# Participant Introductions

**When called, please state your:**

- ✓ Name
- ✓ School / Institution
- ✓ The number of students and adults participating with you in the same location



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# What is PolarTREC?

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers for 2-6 week research experiences in the polar regions.

From 2010-2013, nearly 50 teachers from around the United States will join scientists in the Arctic and Antarctica to learn about science, the polar regions, and to share what they have learned with their students and communities.

**Antarctica  
Day  
12/1/2011**

**Celebrating an  
International  
Commons  
for Peace and  
Science**

**Antarctica and  
The Southern Ocean**

# Your Guides

## ◎ Michelle Brown

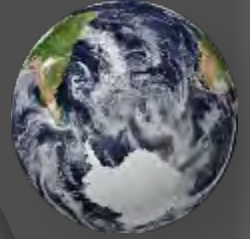
- 8<sup>th</sup> Grade Science Teacher and Explorer, O.Henry Middle School, Austin, TX



## ◎ Dr. Mahlon “Chuck” Kennicutt II

- President of the Scientific Committee on Antarctic Research (SCAR)
- Professor of Oceanography, Texas A&M University





# Presentation Outline

- **Observations from a PolarTREC Teacher**
- **Antarctica - a natural wonder**
  - **Why Antarctica matters**
    - **Questions?**

# Polar TREC - Why I am in Antarctica



- Environmental monitoring at McMurdo Station

- Updating a space weather observatory





# First impressions...

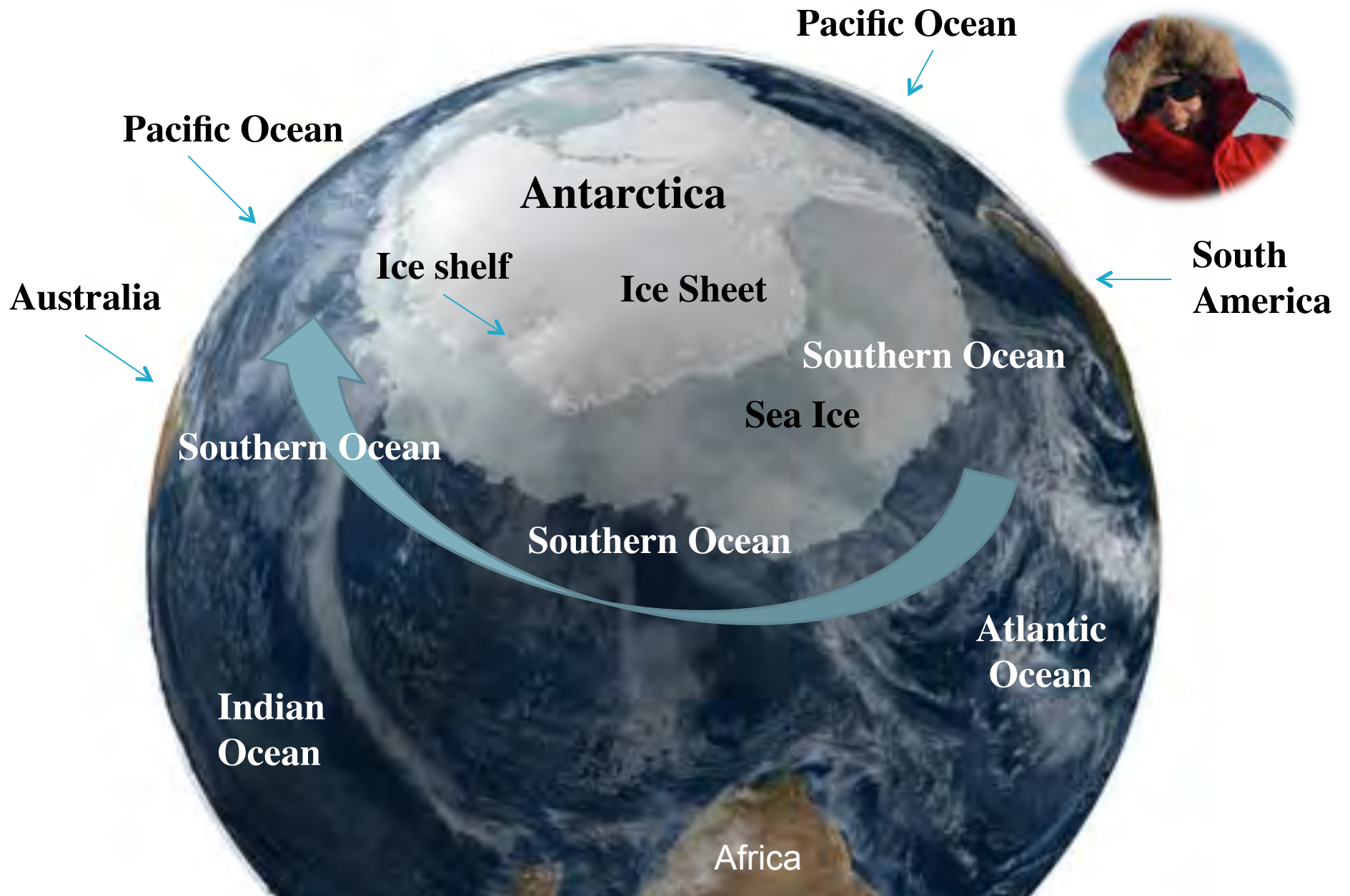


# New experiences...



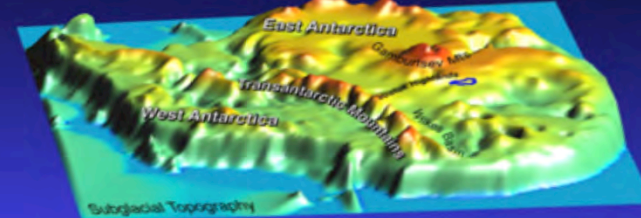
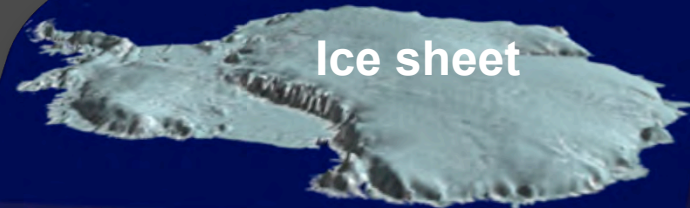
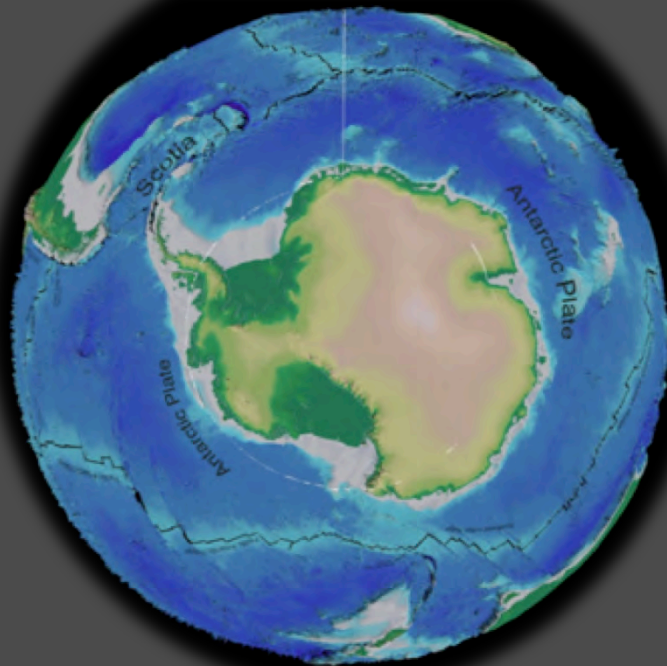
# Coming together for science...





# Southern Polar Geography

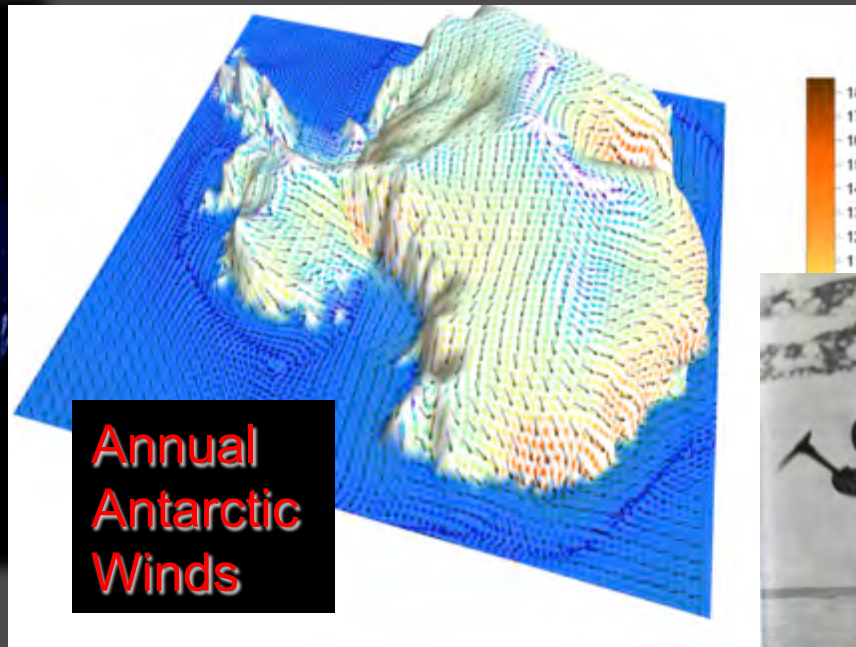
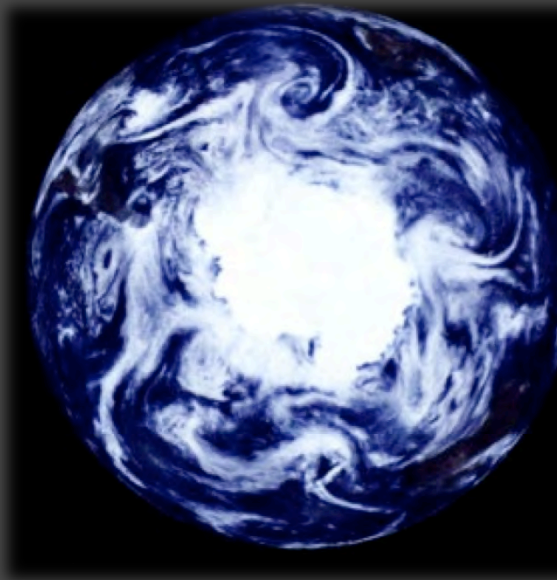
# A natural wonder...



**Basement rock**

A continent covered by ice linked to the Earth system by the atmosphere and oceans.

# A natural wonder...

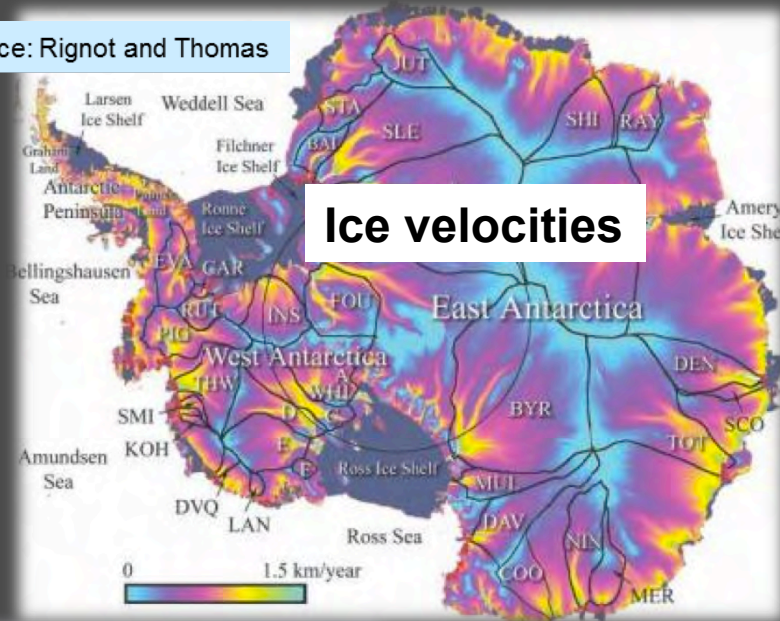


Winds that blow around the world create ocean currents that circumnavigate the planet.

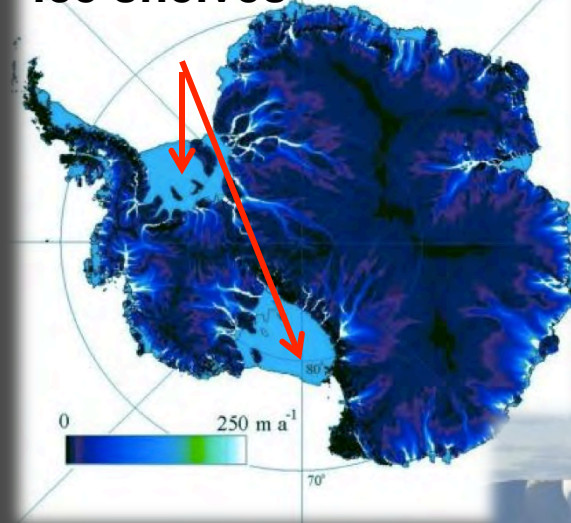
# A natural wonder...



Source: Rignot and Thomas



Ice shelves



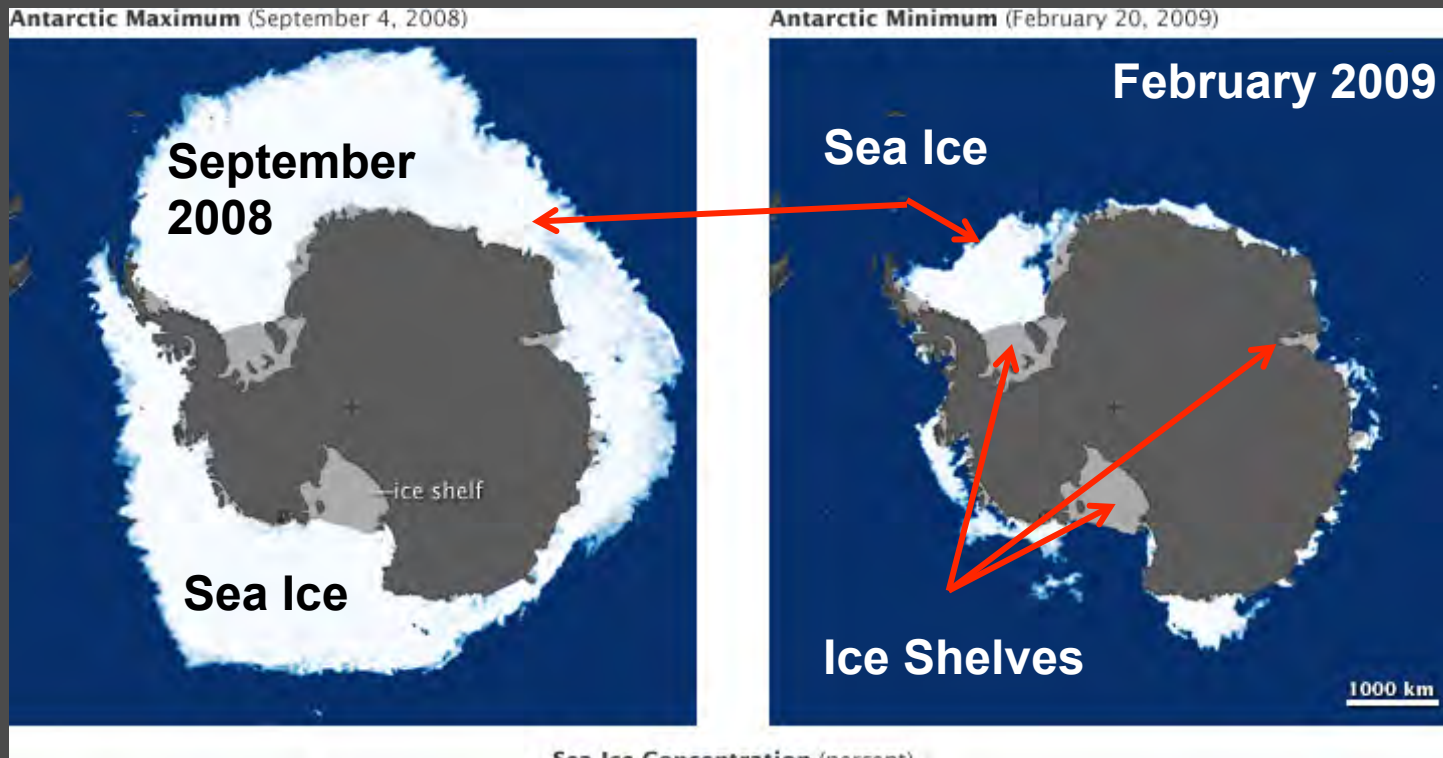
Icebergs



Ice streams

Rivers of ice flow to the sea forming ice shelves and icebergs.

# A natural wonder...



**Sea ice waxes and wanes nearly doubling the continent's area in the austral winter.**



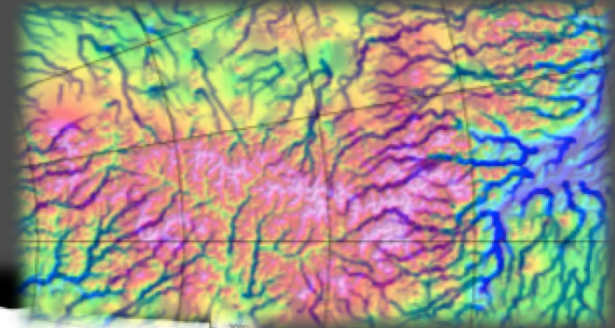
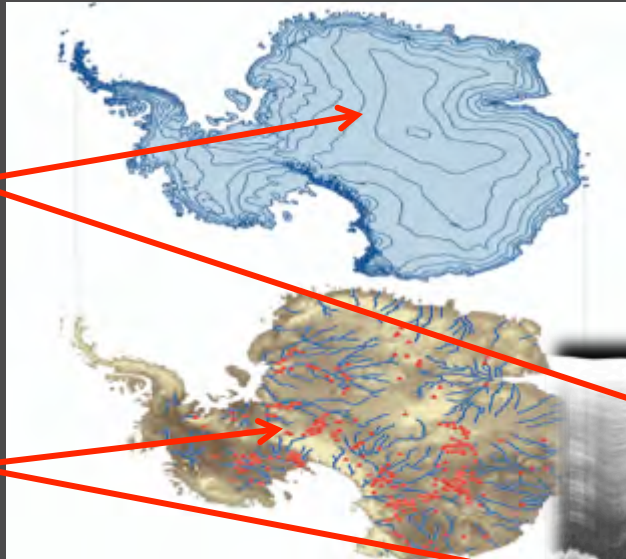
# A natural wonder...



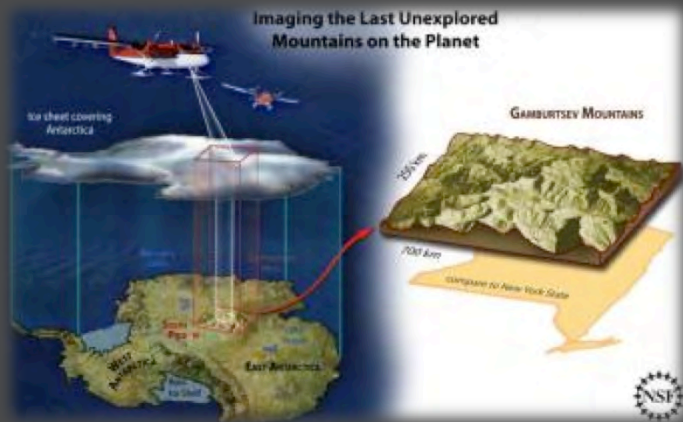
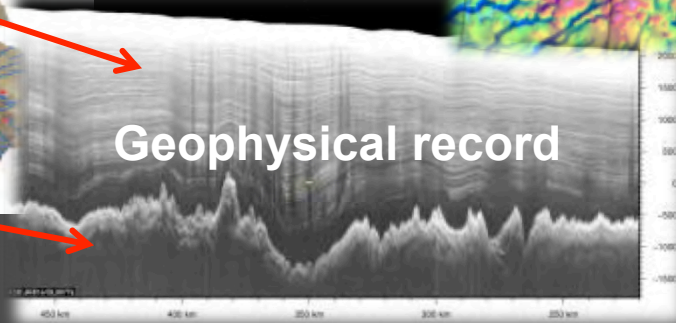
Sub-ice topography

Ice Sheet

Basement rock

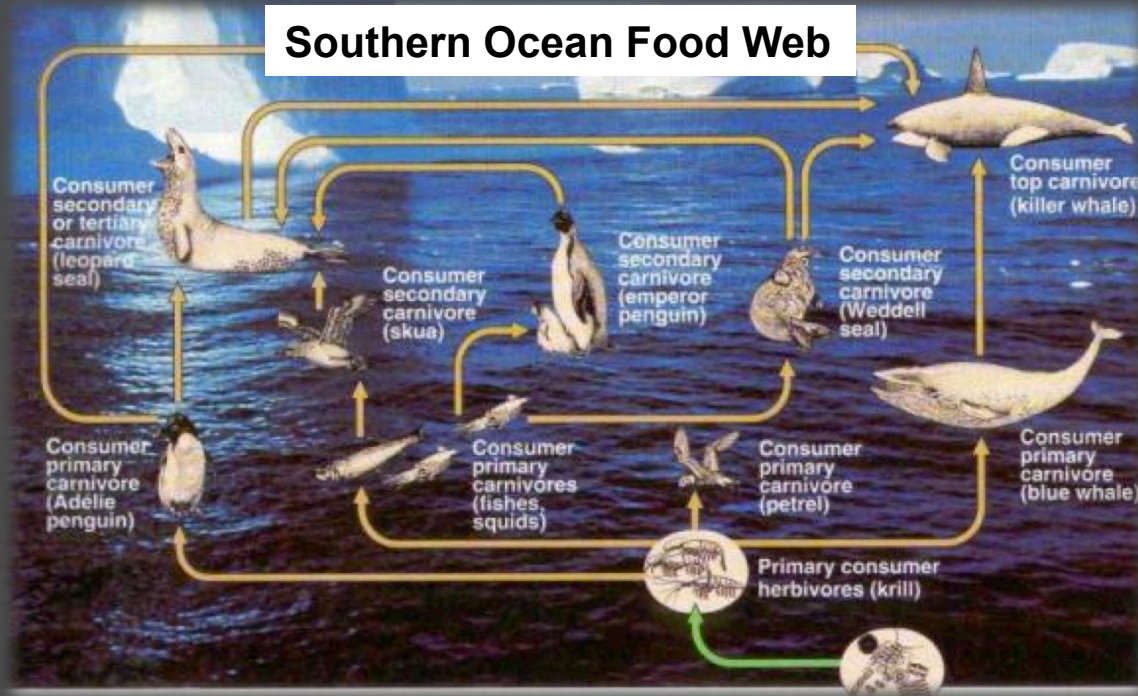


Geophysical record



Ice sheets that hide subglacial lakes, rivers, and mountains.

# A natural wonder...



The Southern Ocean is one of the most productive oceans on our planet.



Seals

Whales



Krill



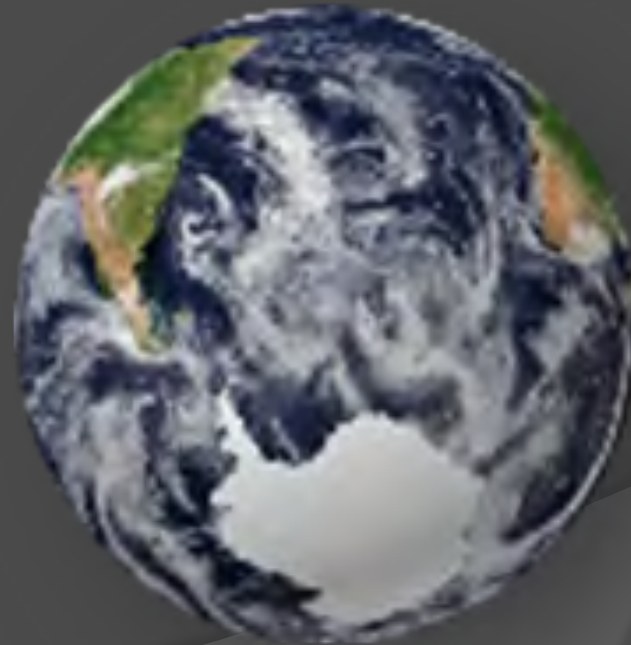
Penguins

# Why Antarctica matters...



Antarctica is a natural laboratory for scientific research of importance in its own right and impossible to achieve elsewhere on the planet.

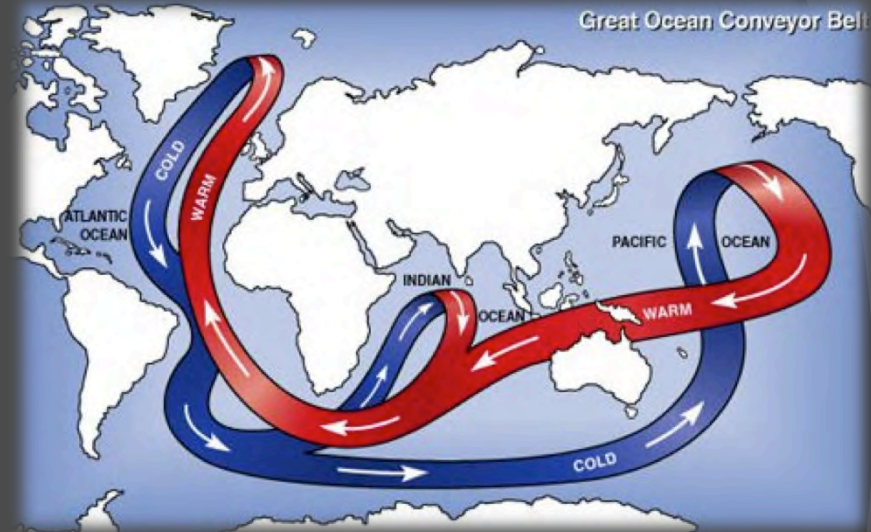
Scientific knowledge gained from the study of Antarctica has global implications.



# Why Antarctica matters...

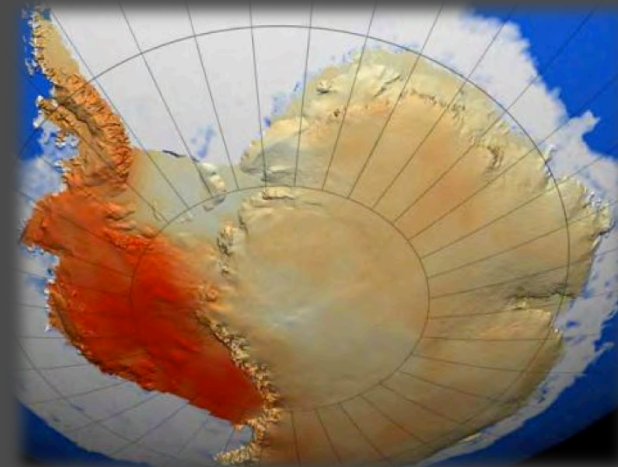
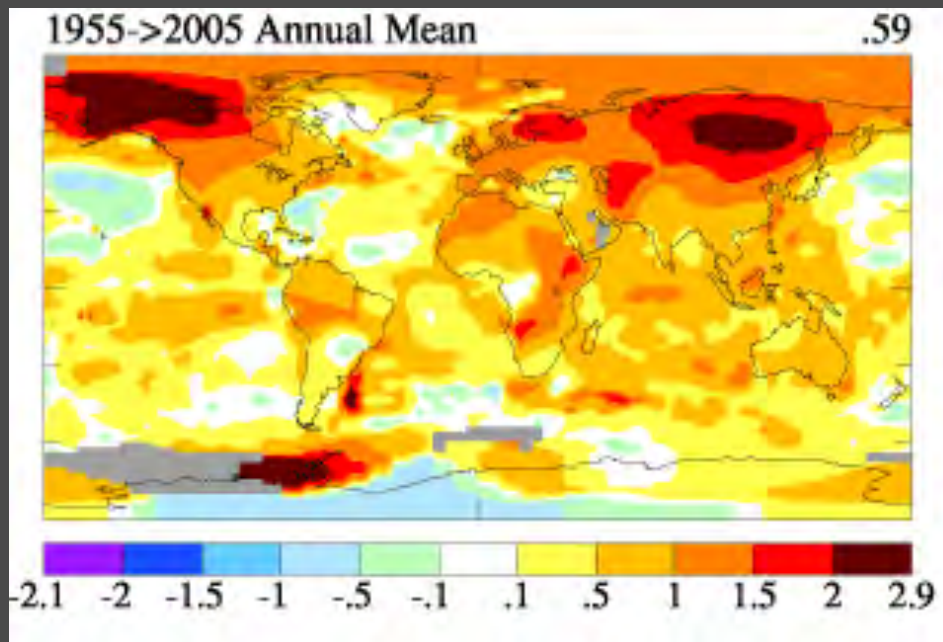


## The Global Oceanic Conveyor Belt



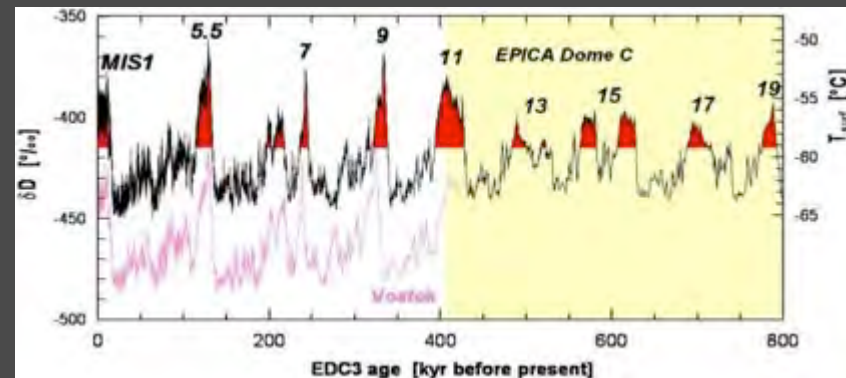
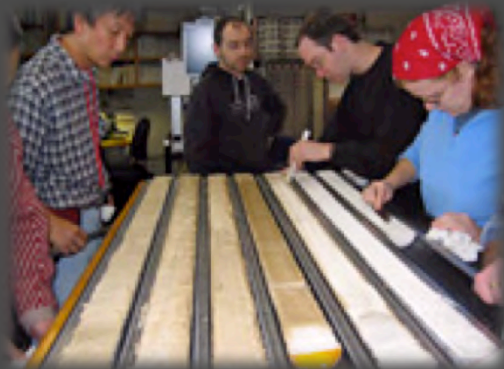
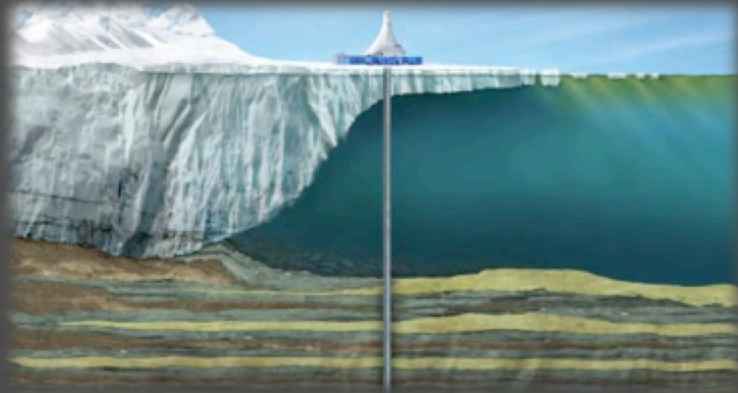
The Southern Ocean connects the Earth's ocean basins and, coupled with the polar atmosphere, influences global weather and climate patterns.

# Why Antarctica matters...



Global warming is experienced first and most intensely in the polar regions.

# Why Antarctica matters...

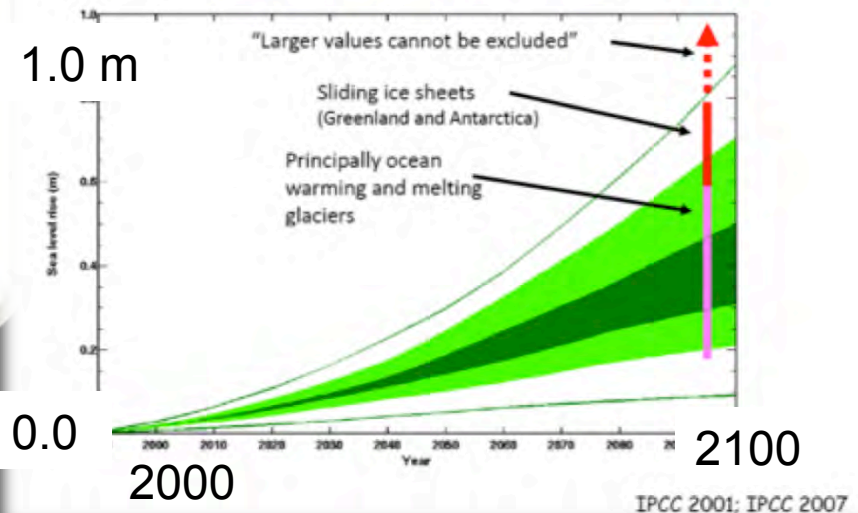


Antarctica is a repository of unique records of past climate change.

# Why Antarctica matters...



## Sea Level Rise will continue during the 21<sup>st</sup> Century



Sea level rise  
in meters

Antarctic ice sheets are the major source of potential sea level rise.

# Why Antarctica matters...



The Antarctic Treaty sets Antarctica aside for peace and science.



Antarctica remains for  
“.... the interests of  
science and the  
progress of all  
mankind.“.....”



Questions?

# Questions

## **To Ask a Question:**

- ✓ Raise your hand with the “hand button”
- ✓ Type your question in the text chat box
- ✓ Speak loud and clear and directly into the phone to ask your question.



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# Teachers: Join PolarTREC!

[www.polartrec.com/about/join](http://www.polartrec.com/about/join)

Every teacher can participate in different ways:

- **Following Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Take Online Professional Development Courses**
- **Become a PolarTREC Teacher!**



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# Upcoming Events

**PolarConnect** with Michelle Brown

**9 December 8:45am Alaska Standard Time**

[9:45am PST, 10:45am MST, 11:45am CST, 12:45am EST]

Watch for and register for events at

**[www.polartrec.com!](http://www.polartrec.com)**

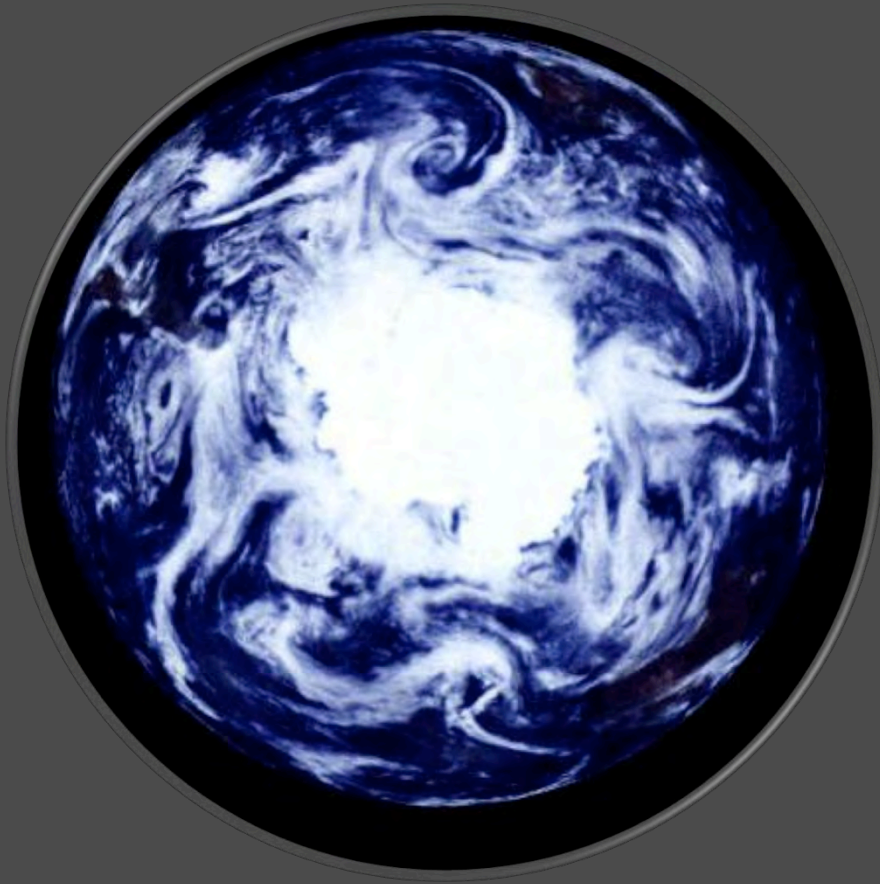


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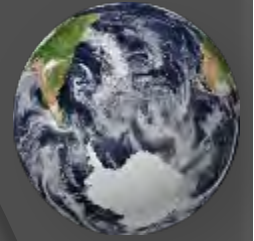
# Thank You!

*An archive of the event will be available shortly.*  
<http://www.polartrac.com/polar-connect/archive>



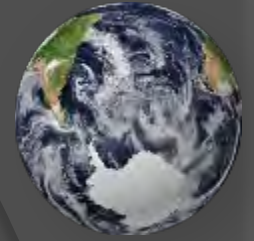


## Extra Slides



# Antarctic Animals...





# Life at McMurdo...





# Eating at the Cafeteria...

