



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Welcome to *PolarConnect*

With Peggy McNeal and the High Arctic
Change 2014 PolarTREC Expedition

Sunday 10 August 2014

10:00 a.m. AKDT

(11:00 am PDT, 12:00 pm MDT, 1:00 pm CDT, 2:00 pm EDT)

Slides will be shown here

Exit the presentation

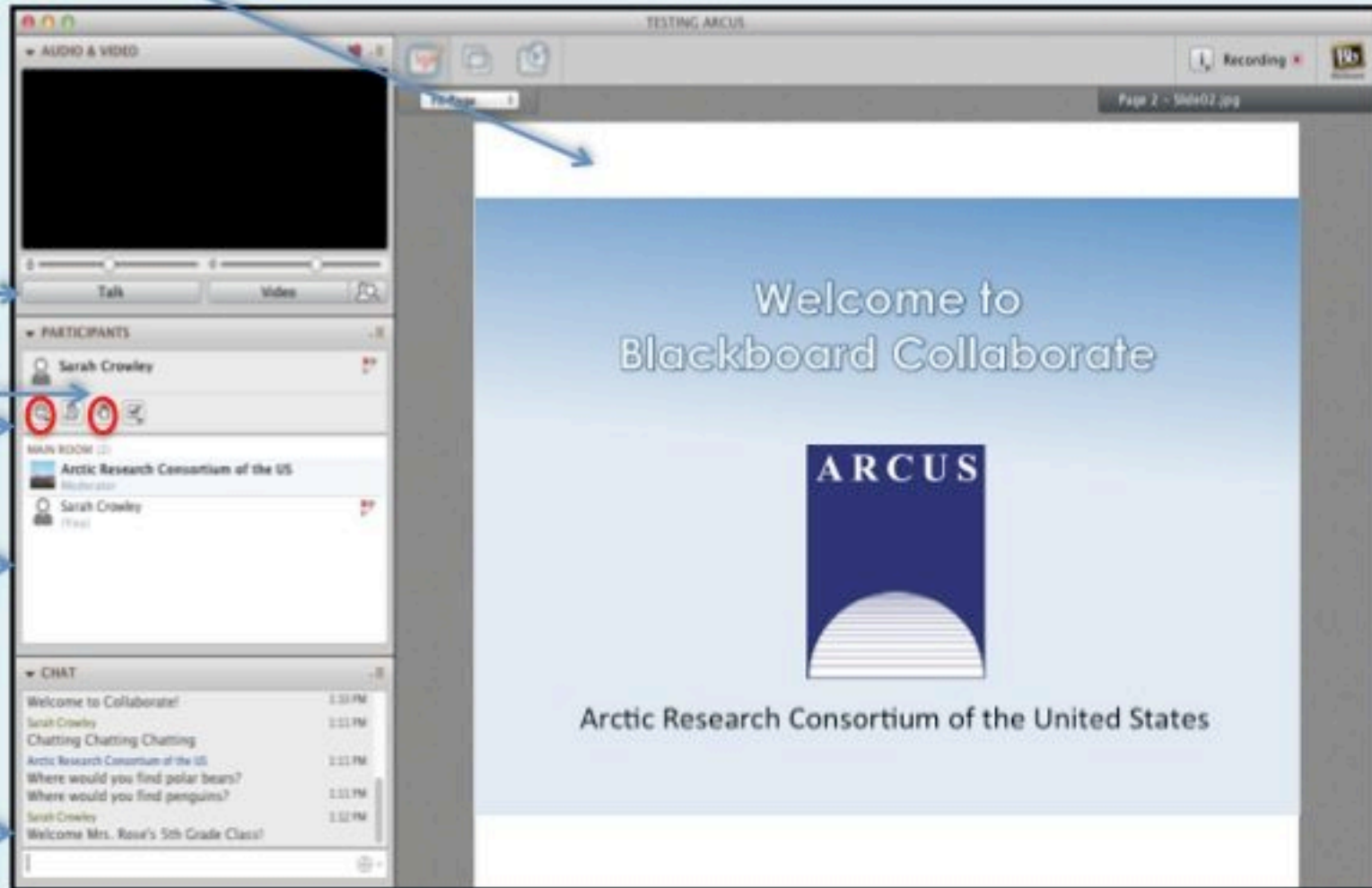
Click to Talk, Unclick to finish talking

Raise your hand to ask a question

Share with emoticons

List of all participants

Chat with one person or the entire group



The screenshot shows the Blackboard Collaborate interface. The main window displays a presentation slide titled "Welcome to Blackboard Collaborate" with the ARCUS logo and the text "Arctic Research Consortium of the United States". The sidebar on the left contains several sections: "AUDIO & VIDEO" with a microphone icon and "Talk" and "Video" buttons; "PARTICIPANTS" with a list of participants including Sarah Crowley and Arctic Research Consortium of the US, and icons for mute, unmute, and raise hand; "MAIN ROOM" with a list of participants; and "CHAT" with a list of chat messages and a text input field.

Please Note:

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

Participant Introductions

Please type in the chat box:

- ✓ Name
- ✓ Affiliation (School, Institution, Etc.)
- ✓ The number of students and adults participating with you in the same location

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 70 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.

Questions

During the Presentation:

- Type your question in the text chat box

At the End of the Presentation:

- Raise your hand with the “hand button”.
- PolarTREC staff will call on you.
- Speak loud and clear and directly into the phone to ask your question.

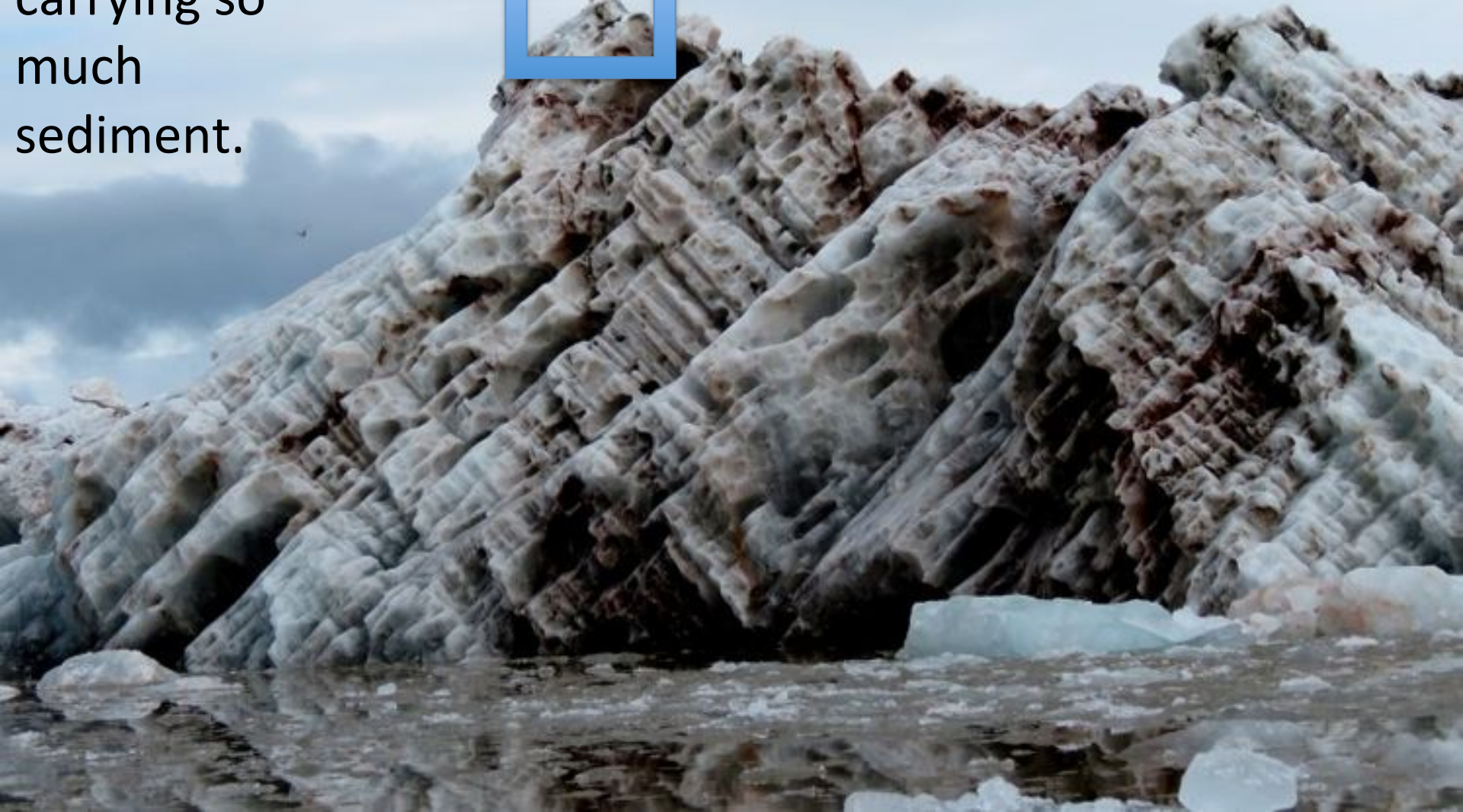
Click on the Talk button to speak.

Unclick when you are done.

**VELKOMMEN!
WELCOME!**



This iceberg
looks dirty
because it is
carrying so
much
sediment.





ROSS



STEVE



JESSICA



KEAN



RYAN



COURTNEY



DOMINIQUE



PEGGY



JULIE



KRONEBREEN GLACIER AND “THREE KINGS”
SVALBARD, NORWAY



SATELLITE IMAGE OF OUR PLANET

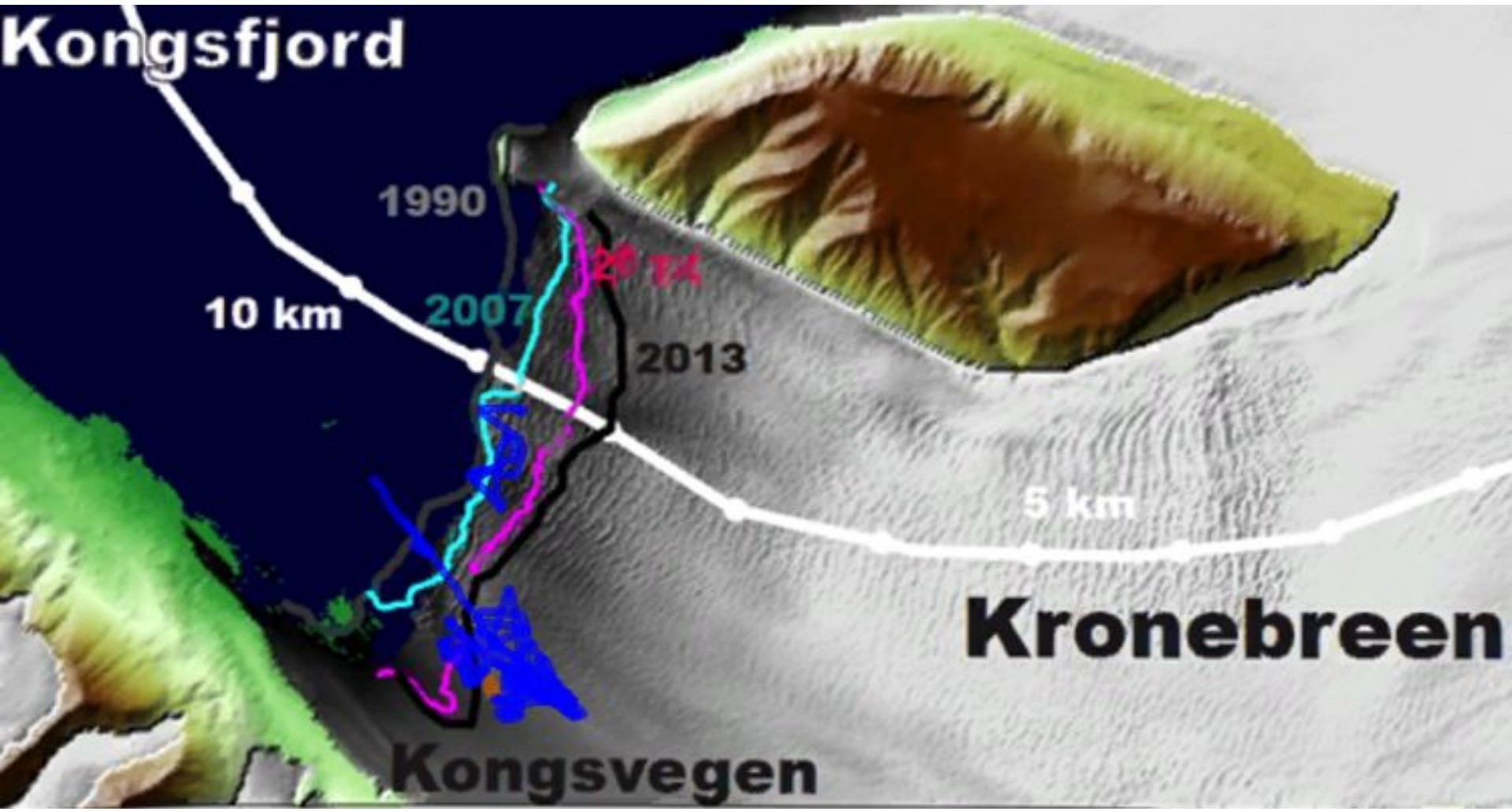


Image by Diane Burko



Image by Diane Burko

Kongsfjord



1990

2007

2013

10 km

5 km

Kronebreen

Kongsvegen

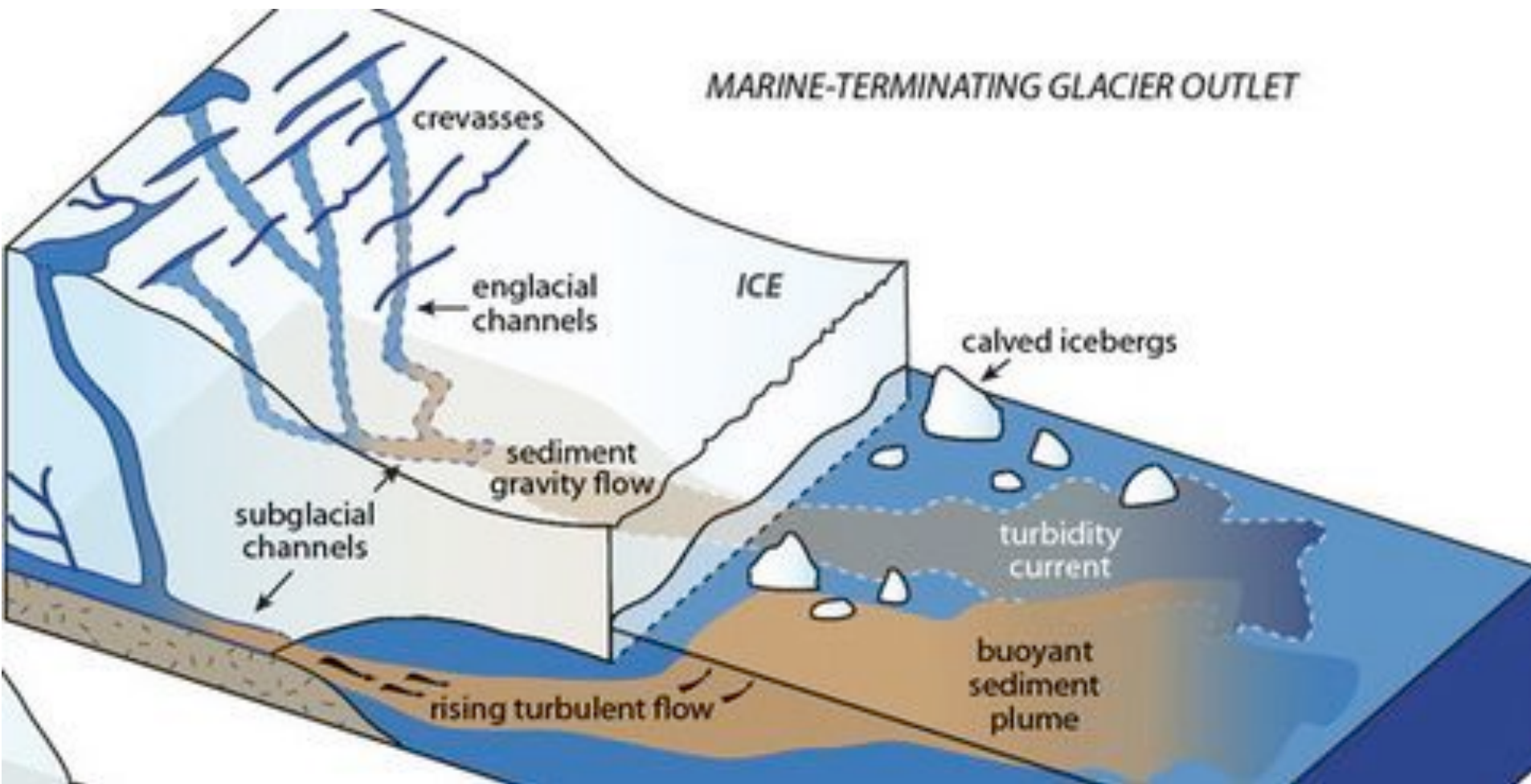








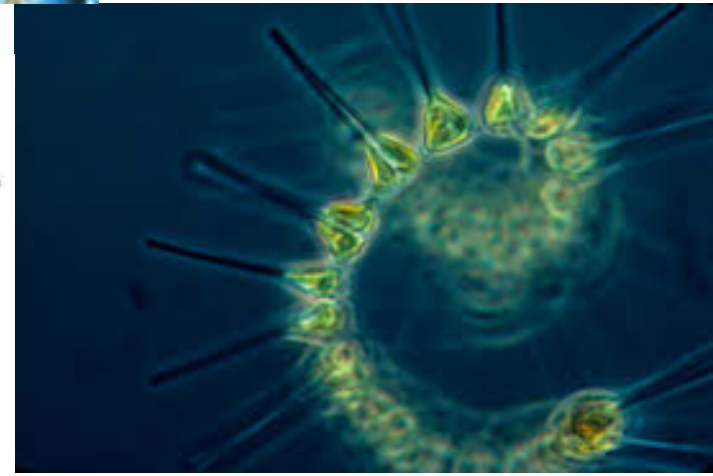
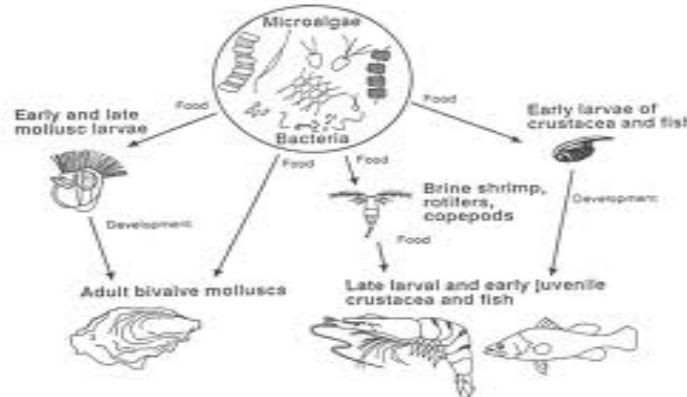
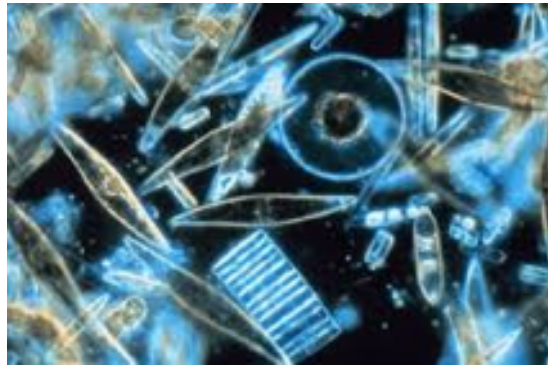
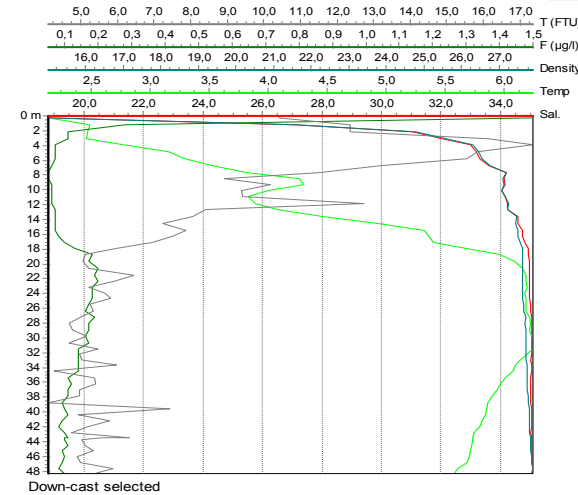




Biological oceanography

Courtney Payne

- Gaining an understanding of how phytoplankton types and distribution are affected by glacial retreat



Bathymetry

Kean Ivey



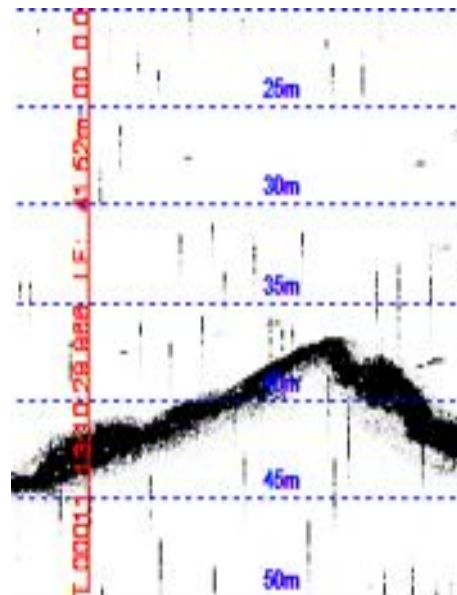
- Measuring the depth of a body of water.
- Measuring the time it takes sound to travel to the bottom and return.
- Visualizing the floor of the fjord shows the history of the glacier to seawater interface and areas of high sedimentary activity.
- The floor of the fjord has a significant effect on tidewater glacier stability

Scanning transects

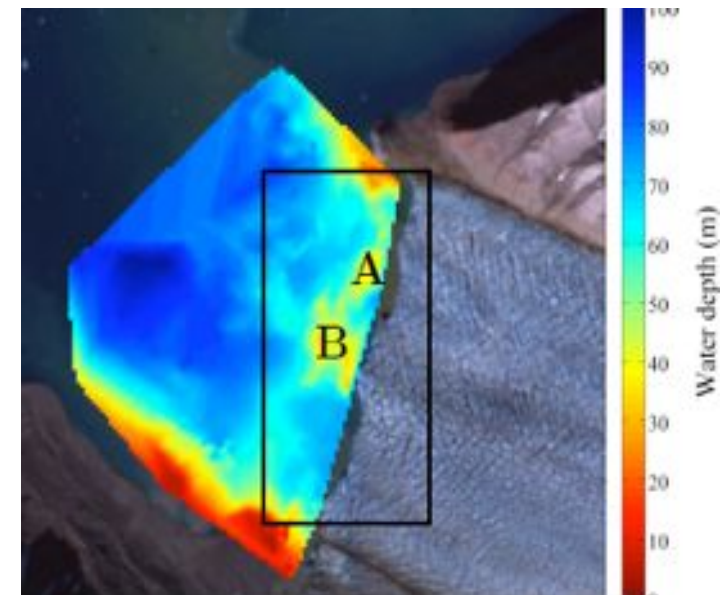


Kehrl 2009

EchoSounder data



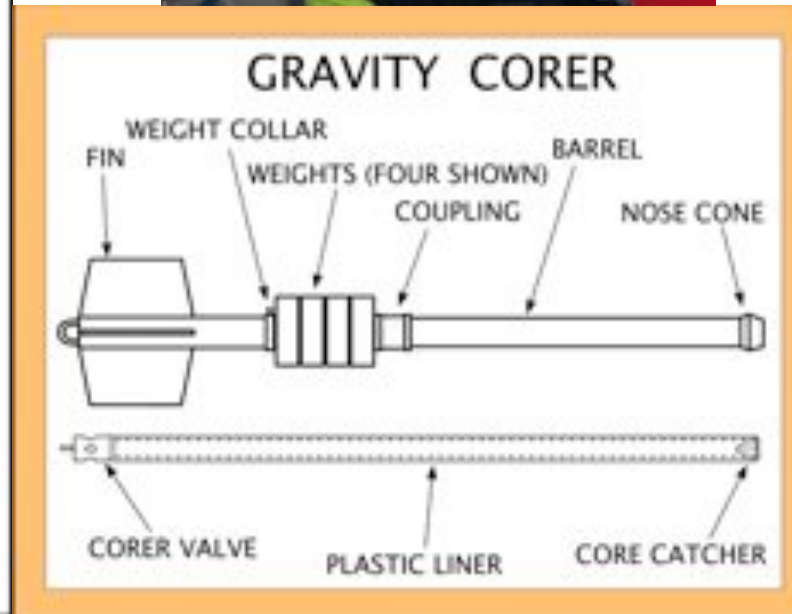
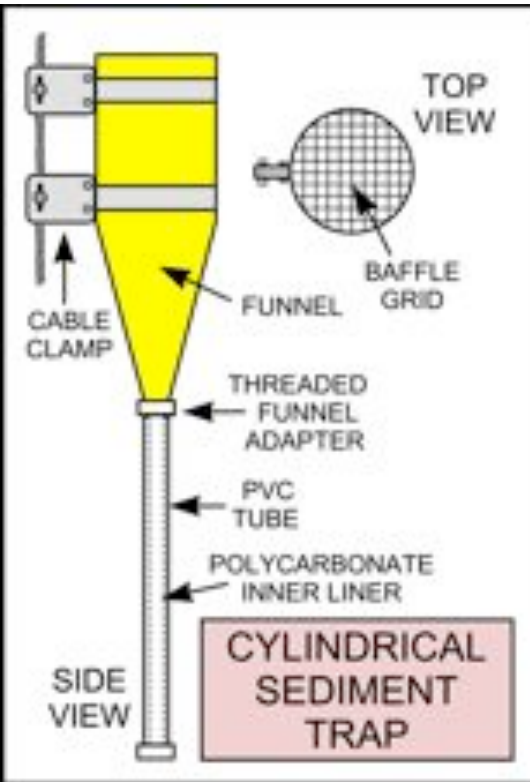
End Result



Kehrl 2009

Sedimentology

Steve Øssim

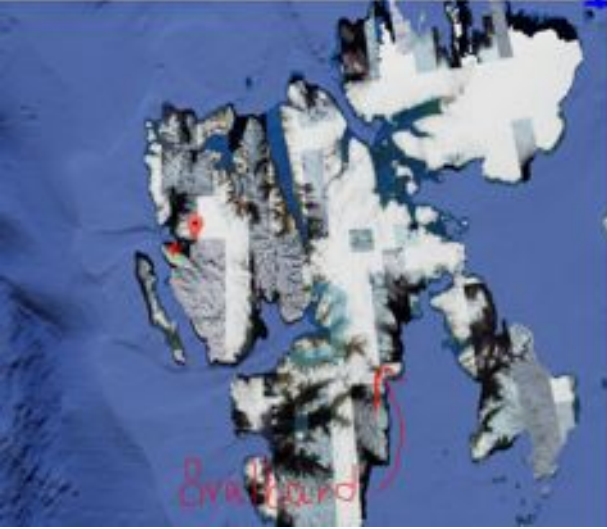


- Utilizing sediment traps to attain sedimentation and accumulation rates
- Analyzing core samples to document potential layering/timing of deposition

Strontium and Neodymium Isotopes

Jessica Miles

- Strontium isotopes used to investigate sources of bedrock and chemical weathering
- Neodymium isotopes used to track how the bedrock in and around the glacier changes with time



- Want to compare Kongsbreen and Kronebreen Glaciers with Lemon Creek Glacier Lake in Alaska



How is the sub-glacial hydrology of Kronebreen and Kongsvegen changing?

REU Student: Dominique Seles



So far we have collected:

- CTD and OBS data of water close to the glacial front and upwelling plumes to monitor water salinity, temperature, and turbidity from the surface to the fjord floor
- Drogue data to measure current velocity at different depths
- Water samples to determine sediment concentrations at different depths

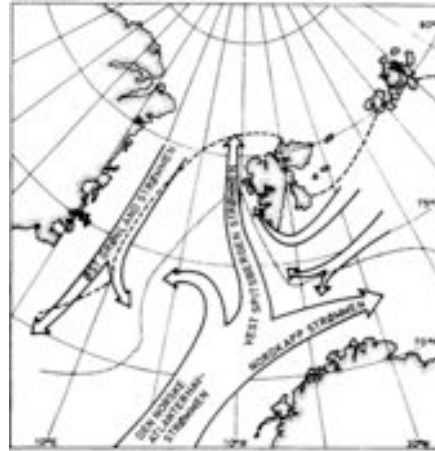


Physical Oceanography in Kongsfjorden

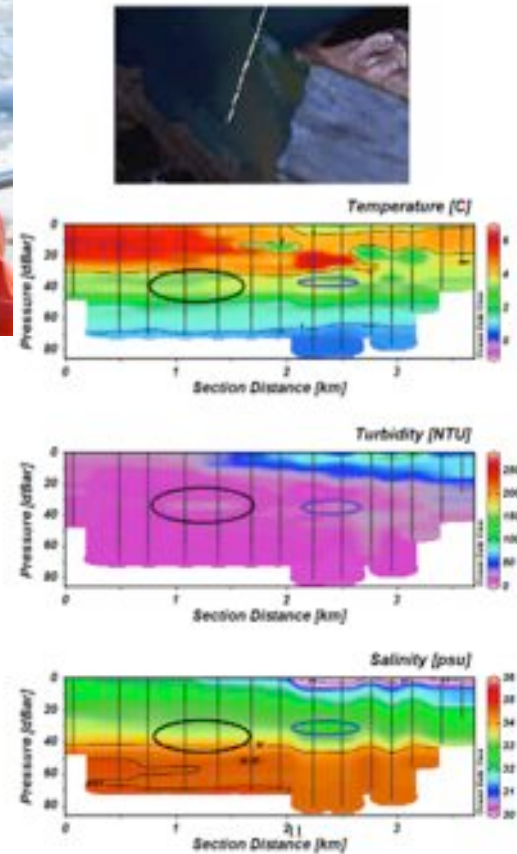
Ryan Pajela



This project involves the collection of CTD data to analyze the interaction between Atlantic water masses and glacial meltwater in Kongsfjorden, focusing primarily on the glacier front of the Kongsbreen and Kongsvegen glaciers.



Hasle and Heimdal, 1998



Transect data from a previous project in 2011 by Rajagopalan





Dr. Julie Brigham-Grette
University of Massachusetts, Amherst

Dr. Ross Powell
Northern Illinois University





Polar bear (2 sightings)



Black guillemot in the fjord



Bearded seal in the fjord

Arctic fox around the science station



Barnacle goose (bird sanctuary)



Snow bunting in the toilet



TEAMWORK
COLLABORATION
INTERNATIONAL





Stay tuned! There is much more to come. Follow the journals and let us hear from you!

Teachers: Join PolarTREC!

www.polartrec.com/about/join

Every teacher can participate in different ways:

- **Following Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Become a PolarTREC Teacher!**

Upcoming Events

Watch for and register for upcoming events at [www.polartrec.com!](http://www.polartrec.com)

Thank You!

An archive of the event will be available shortly.

<http://www.polar-trec.com/polar-connect/archive>

