



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Welcome to *PolarConnect*

With Andre Wille and the Arctic Ground  
Squirrel Studies 2014 PolarTREC Expedition

**Thursday, 5 June 2014**

8:00 a.m. AKDT

(9:00 am PDT, 10:00 am MDT, 11:00 am CDT, 12:00 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 displays the Blackboard Collaborate interface. The main window shows a presentation slide titled "Welcome to Blackboard Collaborate" with the ARCUS logo and the text "Arctic Research Consortium of the United States". The control panel on the left includes sections for "AUDIO & VIDEO", "PARTICIPANTS", "MAIN ROOM", and "CHAT". The "PARTICIPANTS" list shows Sarah Crowley as the moderator. The "CHAT" window shows a conversation about polar bears and penguins.

### 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 2010-2015, over 60 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.**

# Arctic Ground Squirrel Studies 2014



**POLAR  
TREC**

[www.polar-trec.com](http://www.polar-trec.com)

# Team Squirrel

Kate, Cory, Victor and Andre



# Toolik: Home sweet Home





The Drive north: along the Alaska pipeline, through the Taiga, over the Brooks Range, to the arctic



# Phenology and the arrival of spring



# Let's Compare and Contrast Colorado to Toolik

Some examples of similar animals but different species.

❖ Ground squirrels

❖ Bears

❖ Mountain Sheep

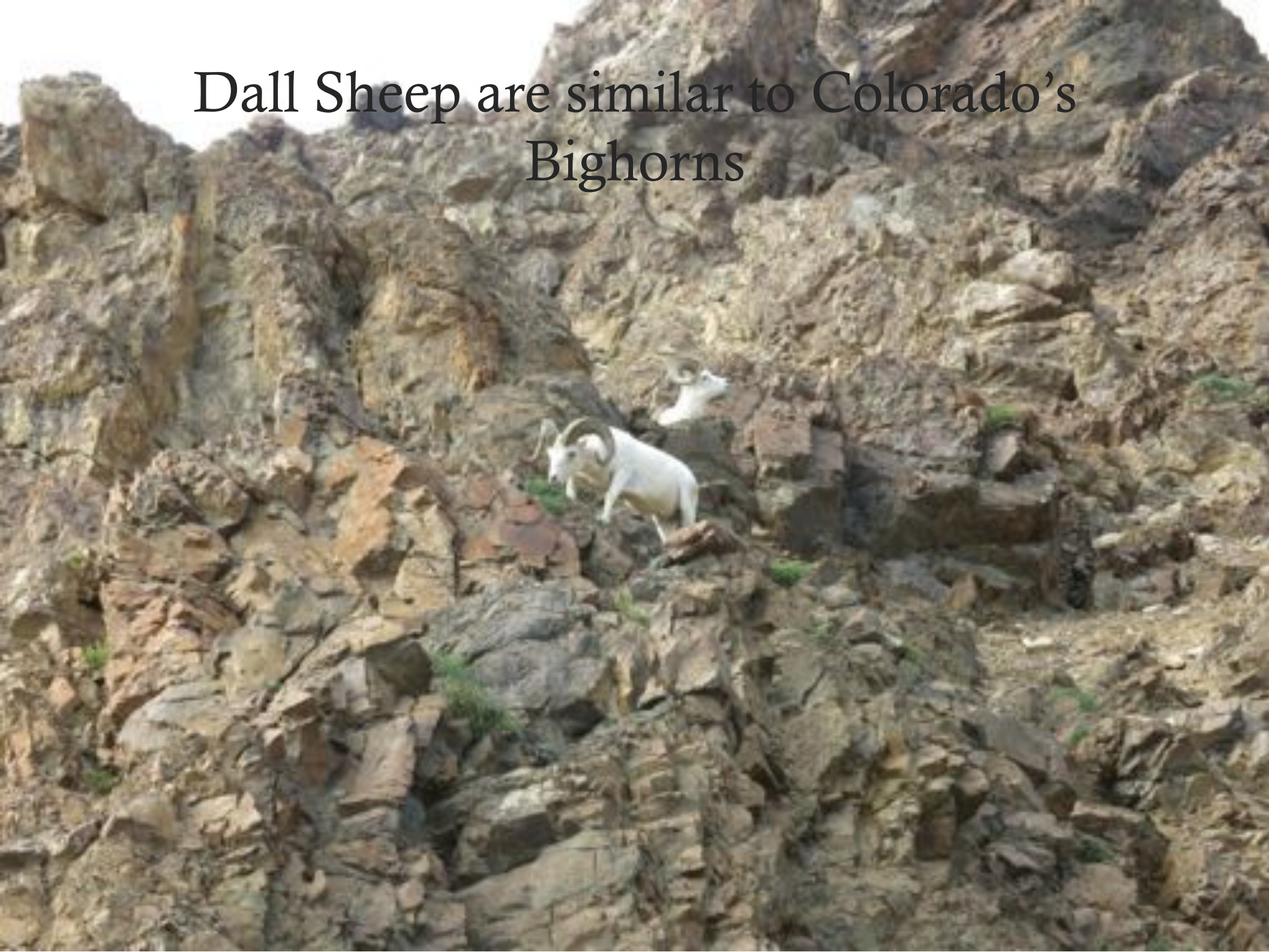
❖ Elk and Caribou

❖ Ptarmigan

❖ Wildflowers



Dall Sheep are similar to Colorado's  
Bighorns



# Grizzlies love ground squirrels !



# Alpine tundra vs. Arctic tundra

## Altitude vs. Latitude

- ❖ The alpine zone starts at around 11,500 feet in Colorado
- ❖ Arctic Tundra start North of 66 degrees Latitude
- ❖ Ptarmigan live in both



The Star of the show



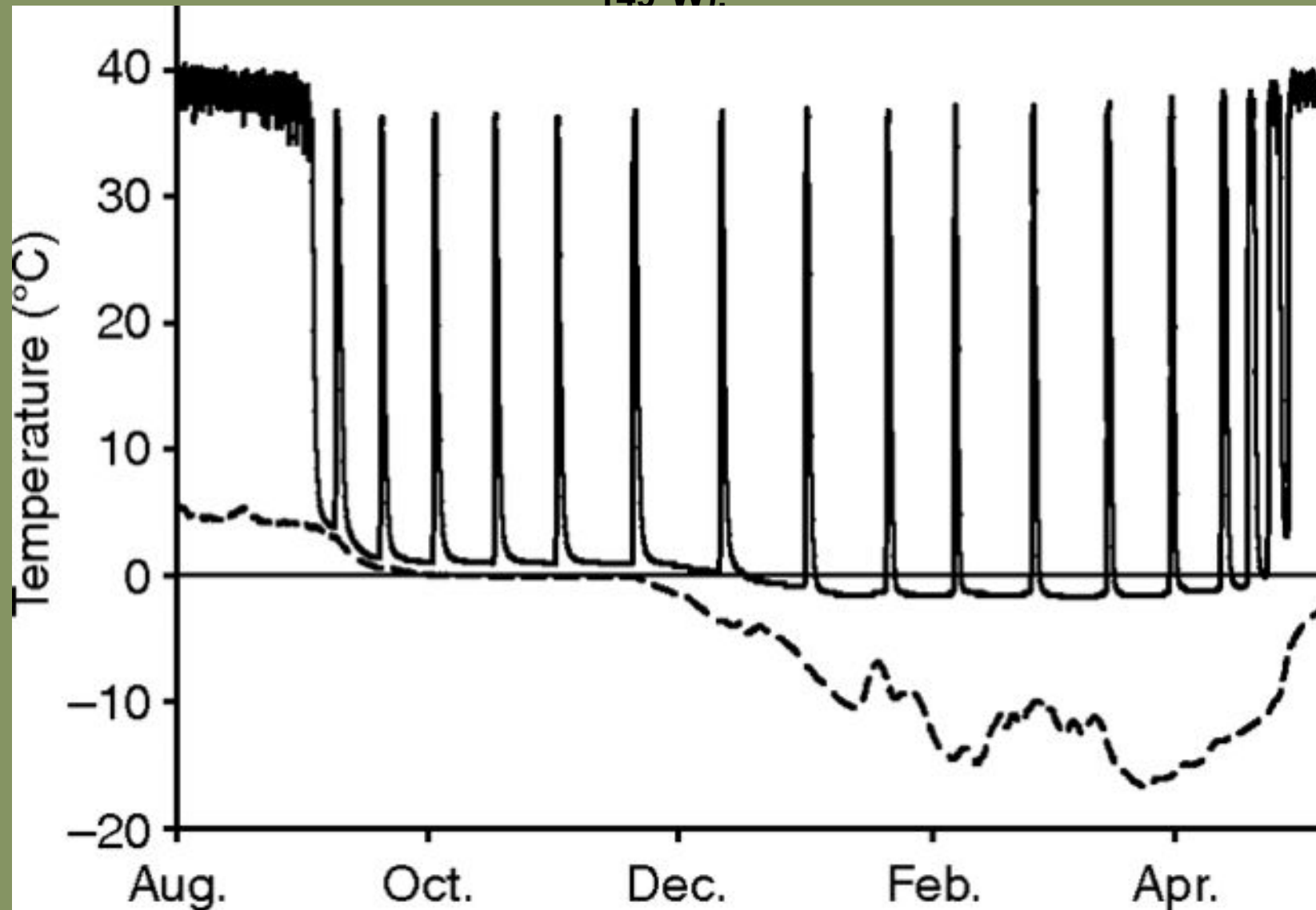
The Arctic Ground Squirrel

A hibernating ground squirrel. It's body temperature can drop to  $-2.9$  C. Colder than an ice cube!





Plot of core body temperature ( $T_b$ ; solid line) and nearby soil temperature (dashed line) vs time for a free-living arctic ground squirrel overwintering near Toolik Lake, Alaska ( $68^\circ\text{N}$ ,  $149^\circ\text{W}$ ).

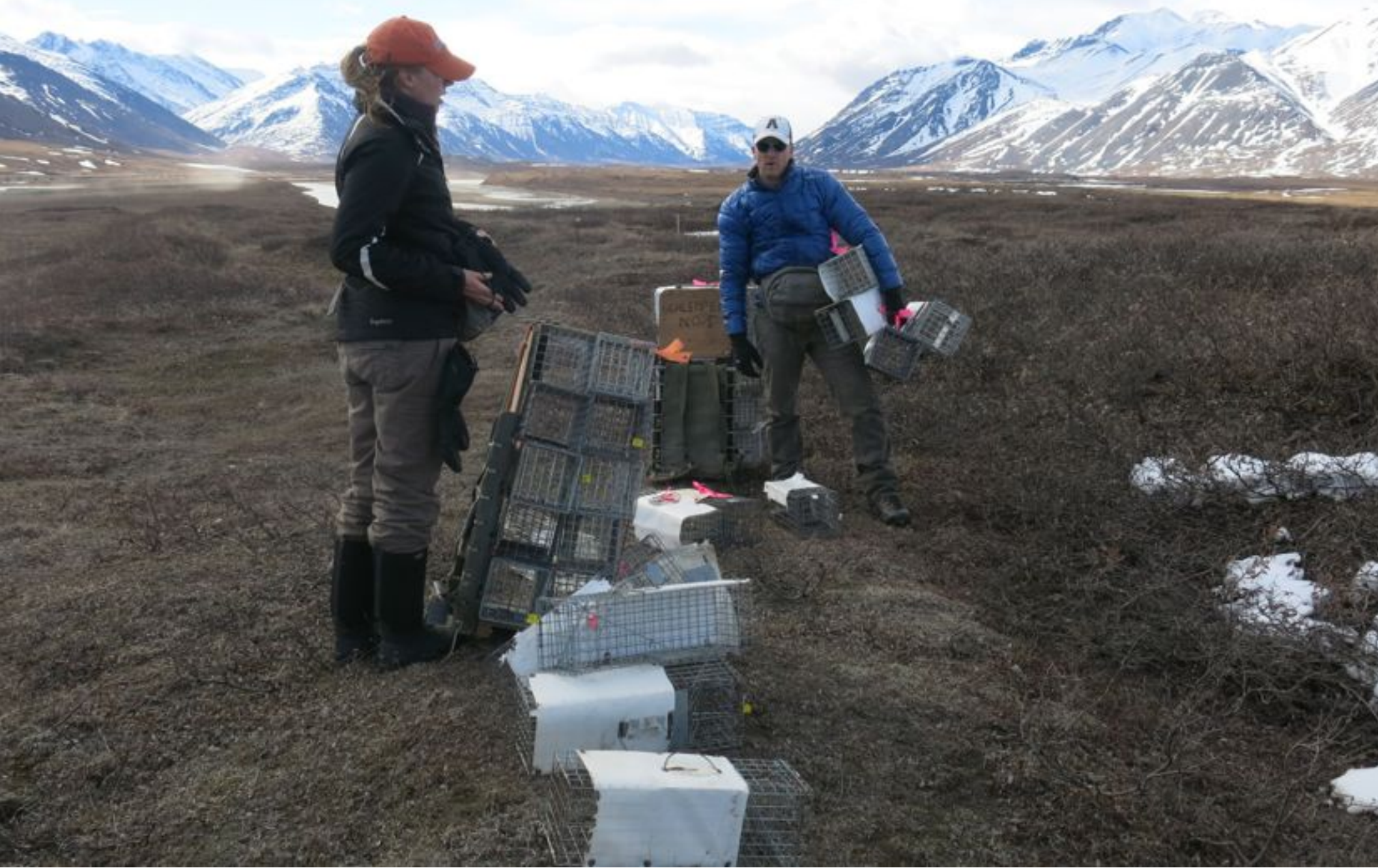


Williams C T et al. J Exp Biol 2011;214:1300-1306

The Journal of  
**Experimental  
Biology**

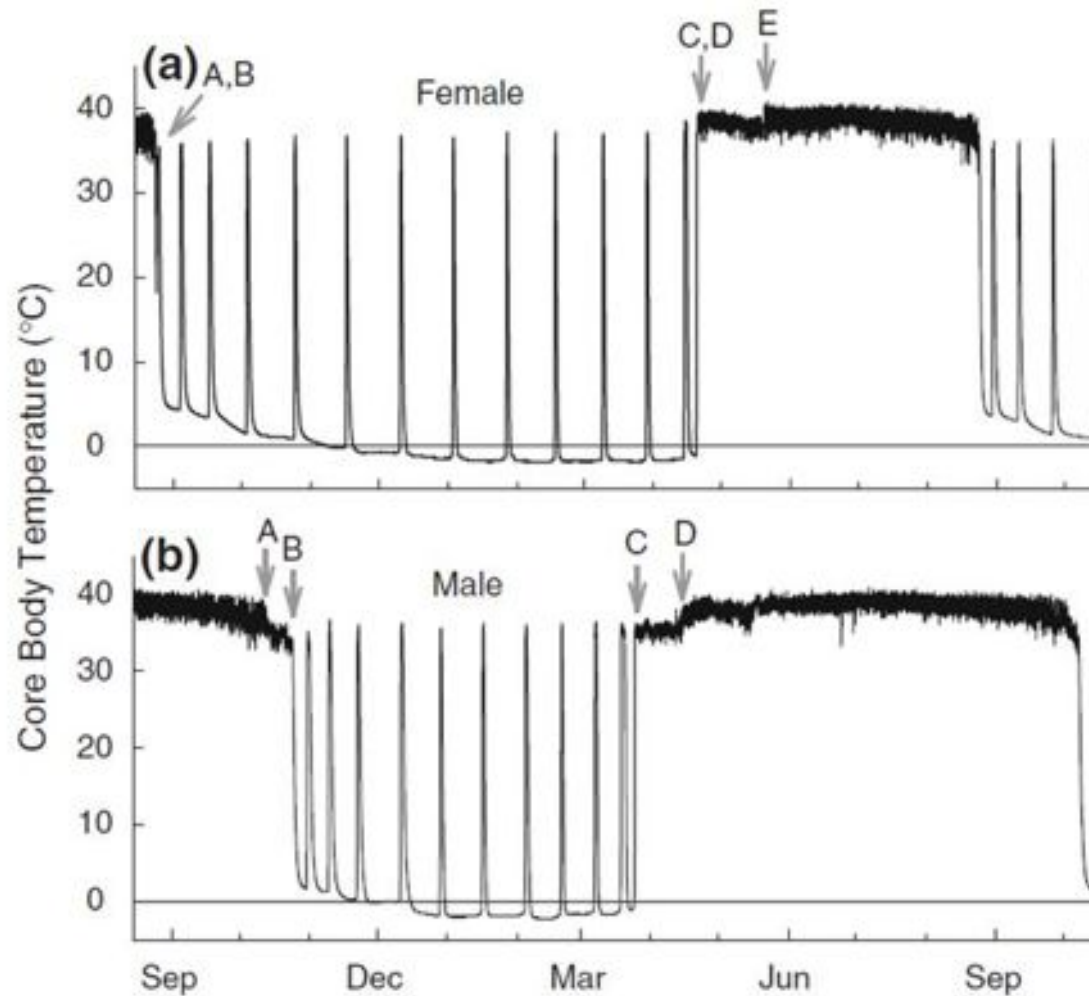


# Carrying traps to our field site



# Hibernation in males vs. females

Understanding the timing or phenology of the animals is key to researching the animal-no matter what it is.



# Setting squirrel traps



# Weighing a squirrel



# Downloading data from a light collar



This information will tell us at what time of day the squirrel is active and for how long



# Lab work

Each day we return to our lab for a variety of work

- ❖ Computer Data entry
- ❖ Feeding and cleaning squirrels
- ❖ Blood sample prep
- ❖ Implantation of data loggers
- ❖ Prep for the next day of work



# Ready to go home



Returned to the burrow



# 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**
- **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.polartrec.com/polar-connect/archive>

