



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Welcome to *PolarConnect*

University of TX at El Paso
**Research Opportunities in the Arctic
for Minorities (ROAM 2).**



Tuesday August 8, 2017
PolarTrec Teacher Ruth Rodriguez
UTEP Associate Professor Dr. Vanessa Lougheed



Getting to Know Adobe Connect

Slides will be shown here

Exit presentation

Mute your speakers

Raise your hand

List of all participants

Follow the chat

Find out more about the presentation

Chat here

The screenshot shows an Adobe Connect meeting window titled "PolarConnect Events - Adobe Connect". The main content area displays a slide titled "Welcome to PolarConnect!" with the PolarTREC logo and the text "TEACHERS AND RESEARCHERS EXPLORING AND COLLABORATING". Below the title, it says "Real-time events from teachers and scientists in the field directly to you. Join us for the best webinars from the polar regions!". The slide features three images: a group of people in a meeting, a person in a blue jacket holding a laptop, and a person in a field. At the bottom of the slide, it provides contact information: "If you need to join by phone: dial 1-800-766-1337 enter 54366779#" and "Events hosted by the Arctic Research Consortium of the United States as part of the PolarTREC Program". The website "www.polaratrec.com" is also listed.

The interface includes a top toolbar with "Meeting", a microphone icon, and a "Help" button. On the left side, there is a "Camera" section with a "Slide1.jpg" thumbnail, an "Attendees (1)" list showing "Joyce", and a "Chat (Everyone)" window with the message "ARCUS Staff: Hello!". At the bottom, there is a "Files 3" section with a table for file management and a "Download File(s)" button.

Name	Size

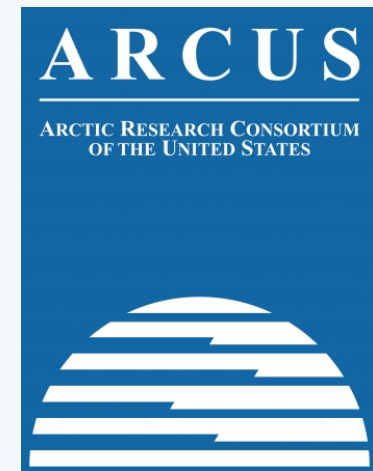
Participant Introductions

In the Chat box, please introduce yourself by typing in your:

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

What is PolarTREC?

- Since 2004, the Arctic Research Consortium of the United States (ARCUS), a non-profit organization, has been administering the PolarTREC Program.
- PolarTREC is professional development for K-12 teachers. They are paired with researchers for 2-6 week research experiences in the polar regions.
- Over 150 teachers from around the United States have joined 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.



25 Years of Connecting Arctic Research

www.arcus.org

Questions

During the Presentation:

- Type your question in the text chat box

At the End of the Presentation, two options:

1. Type your question in the text chat box, or
 2. Raise your hand with the “hand button”.
- PolarTREC staff will call on you and activate your microphone.
 - Speak loud and clear, directly into the computer microphone or the phone to ask your question.



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The UTEP team

Dr. Vanessa Lougheed



Dr. Craig Tweedie



Angus Tweedie



UTEP Grads & Undergrads



Dr. Jeff Olimpo



PolarTREC Teacher Ruth Rodriguez

Barrow Arctic Research Center (BARC)



- A research facility for the Arctic researchers in Barrow.
- Offers researchers any logistical issue that they may require. Bear guards, trucks or ATVs, & assistance in the field.
- Labs, offices, and meeting rooms.

The Projects

AQUATICS ECOLOGY

- Chemistry & comparisons in the tundra ponds, lake, & rivers
- Weather data

SYSTEMS ECOLOGY

- Phenocams
- Soil cores & chemistry
- Bathymetry
- Remote Sensing

- How is global climate change affecting these areas?
- Bringing these experiences to the Undergraduate (UTEP) & high school classroom (CECA).

Technologies in the field!

- **LIDAR**-Light Detection and Ranging is a type of remote sensing that uses lasers and satellites to create an image of the selected area.
- **DGPS**-Enhanced GPS that uses multiple satellites to calculate a waypoint within millimeter accuracy.
- **YSI multiprobe**-collect various variable from the field-pH, temperature, dissolved oxygen, conductivity
- **Weather Station**-collects weather data for each given set amount of time.
- **Carbon loggers/sensors**-calculate the out the amount of CO₂ present

Typical day in the field (aquatics)

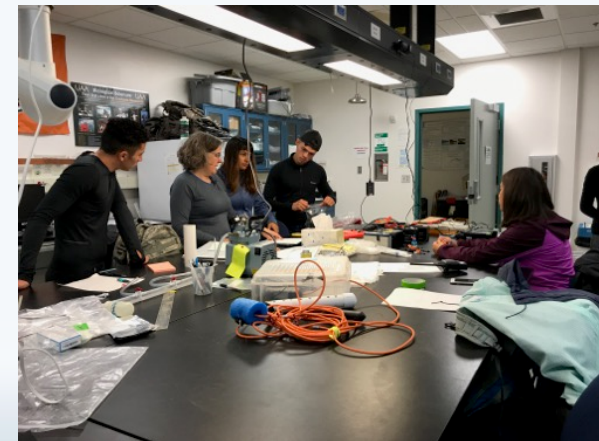
At the field site

- Collect water samples to be analyzed at UTEP
- Measure water & thaw depth
- Collect sediment sample (phytoplankton & periphyton)
- Collect the data from the YSI & CO₂



At the BARC

- Filter water for chlorophyll & DOC analysis (UTEP)
- Separate the periphyton & phytoplankton samples
- Freeze all the water samples
- Organize all the data collected from each site



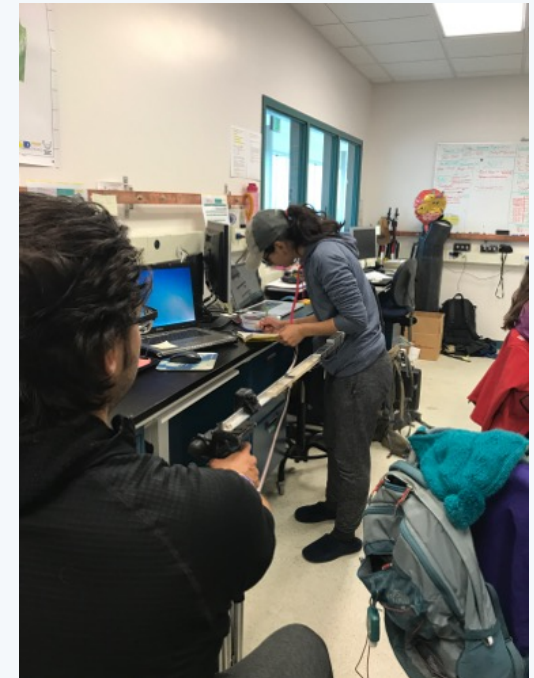
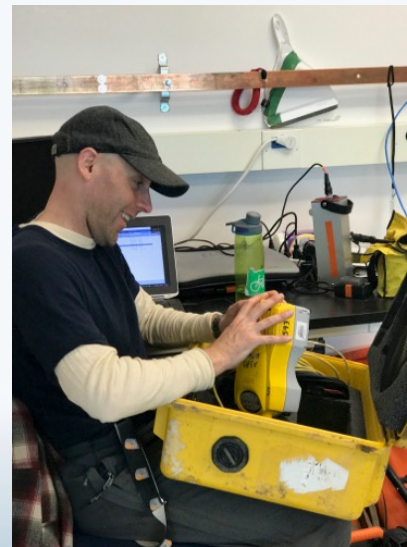
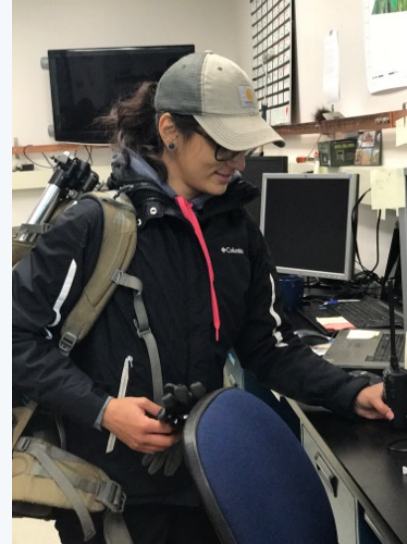
Typical day in the field (systems)

- For calculating LIDAR-all the tripods must be level & the reflectors have to be in range.
- For collections-the data usually take about 20 minutes to collect the scanner data, but there are 5 tripods. You can be in the field for a few hours at a time.
- Rain is usually the only thing that can prevent data collection.



At the BARC

- Charge all the batteries used from the day
- Disassemble any equipment & store for the next day
- Download all the data files-make sure all data was backed up
- Process & organize data files
- Get ready for the next day!

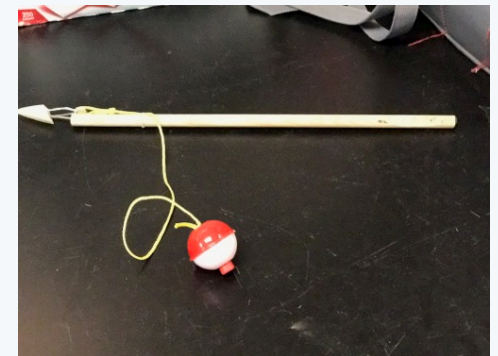
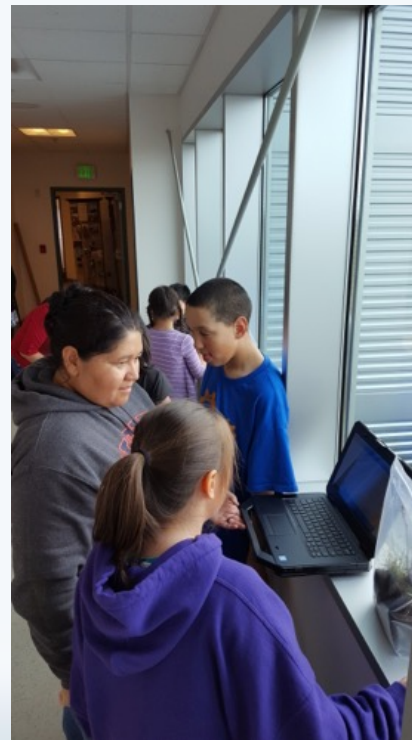


Some of the other cool stuff we've been doing

Walakpa Beach Archeological Excavation



Barrow Arctic Research Center Science Fair





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Follow our expedition!

<https://www.polartrec.com/expeditions/research-opportunities-in-the-arctic-for-minorities>



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Join PolarTREC!

www.polartrec.com/about/join

Everyone can participate in different ways:

- **Follow Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Check out the great resources**
- **Become a PolarTREC Teacher or Researcher**
- **Become a member of ARCUS**

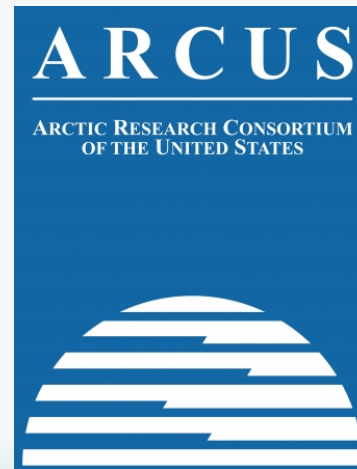


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Thank You!

An archive of the event will be available shortly.

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



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www.arcus.org

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