Welcome to a Special Event!

Taking PolarTREC to the Classroom and Beyond

Reflecting on the Experience

Wednesday, 24 June 2015
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

Please Note:
- Participants using the telephone can mute/unmute by pressing *6 on the phone.
- Today’s event will be recorded and archived.
Questions & Discussions

Two ways to interact:
1. Type your questions or comments in the text chat box
2. Or, Raise your hand with the “hand button”.
   • PolarTREC staff will call on you.
   • Click on the Talk button to speak and unclick when done (if using VOIP) or unmute your phone *6
   • Speak loud and clear and directly into the phone to talk.
Agenda

• Update on the program and products
• Reflecting on the Experience
  • Teachers Reflection
  • Researchers Reflection
  • Alumni Advice
• What comes next??
• Updates
• Questions & Comments
• Additional Announcements & Adjourn
## PolarTREC Participants

<table>
<thead>
<tr>
<th>Year</th>
<th>NSF IPY Award</th>
<th>NSF OPP Award</th>
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<td></td>
<td>Total Teachers</td>
<td>Arctic</td>
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<td>2007-2008</td>
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<tr>
<td>2014-2015</td>
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**136***  

* Totals include 9 NSF Einstein Fellows
Over 100 Polar related lessons developed

Over 50,000 participants connected to Polar Regions through live events

82% for the very first time

Over 700,000 unique visitors to our website

Over 2 million unique page visits to website

Other partners include NASA, NOAA, USGS, BLM, NPS
New Products

- Classroom and Community Lesson Plans
  www.polartrec.com/resources/search
- Project Pages
  www.polartrec.com/projects
- Expedition Reports
  www.polartrec.com/resources/expedition-reports
- Product Pages
  www.polartrec.com/products
- ARCUS Internet Media Archive
  www.media.arcus.org
- Portfolio Pages – Click on Photo or in Members List
- PolarTREC Channel on YouTube
Sea Floor Changes and the Antarctic Circumpolar Current

- **Location:** Research Vessel Nathaniel B. Palmer
- **Project Funded Title:** Role of the Central Scotia Sea Floor and North Scotia Ridge in the onset and development of the Antarctic Circumpolar Current

Teacher - Jillian Worssam
Researcher - Lawrence Lawver
Researcher - Ian Dalziel
Sea Floor Spreading and
The Antarctic Circumpolar Current
Microbialites In Lake Joyce Antarctica

- **Location:** Dry Valleys, Antarctica
- **Project Funded Title:** Microbialite Morphology in Lake Joyce, Antarctica

Teacher – Lucy Coleman
Researcher – Dawn Sumner
Senior Graduate Student – Tyler Mackey
Microbialites in Lake Joyce, Antarctica
PolarTREC teacher Lucy Coleman
Researchers Dawn Sumner and Tyler Mackey
Weddell Seals in the Ross Sea 2014

- **Location:** McMurdo Station, Antarctica
- **Project Funded Title:** The Cost of a New Fur Coat: Interactions between reproduction and molt in Weddell Seals in Erebus Bay, Antarctica

Teacher – Alex Eilers
Researcher – Jennifer Burns
Our project: The Cost of a New Fur Coat

Links between Reproduction and Molt

Hormones?

Condition?
Find, capture, and calm the seal!

Collecting samples...

Skin, Blood,

Muscle, Blubber,

Whisker and Fur

Weighing and measuring the seal
West Antarctic Ice Sheet Microstructures

- **Location:** West Antarctic Ice Sheet (WAIS) Divide
- **Project Funded Title:** Collaborative Research: VeLveT Ice - eVoLution of Fabric and Texture in Ice at WAIS Divide, West Antarctica

Teacher – Yamini Bala
Researcher – Erin Pettit
Researcher – Rachel Obbard
Research Assistant – Tiffany Green
WAIS Divide
Extra Projects
Education!

Above image: Firn Ocean, etching, 24"x18", 2011 by Anna McKee, photo credit Nancy Hines. Artwork inspired by an ice core drilled from the West Antarctic Ice Sheet (WAIS) that was used to study past climate change.
Ice Cube Neutrino Observatory 2014

- **Location:** South Pole, Antarctica
- **Project Funded Title:** IceCube

Teacher – Armando Caussade
Researcher – Jim Madsen
ARMANDO CAUSSADE / IceCube Neutrino Observatory

Selected in November 2013 after a competitive review process—as one of 12 successful candidates from a national pool of about 190 applicants—for the 2014–2015 Antarctic field season of PolarTREC.

Chosen to assist with research at the IceCube Neutrino South Pole Observatory. Traveled to Antarctica in January 2015 spending a total of 18 days.

Deployed to the Amundsen-Scott South Pole Station from January 11, 2015 to January 21, 2015, conducting ten days of maintenance and support work at the IceCube telescope. Stayed for eight additional days at the McMurdo Station on the Antarctica coast, while in transit to and from the Pole.
ARMANDO CAUSSADE / IceCube Neutrino Observatory

Worked in four main areas: 1) Testing the ARA (Askaryan Radio Array) neutrino detector, a new experiment that will measure radio waves generated by the interaction of neutrinos with the Antarctic ice. 2) Troubleshooting of muon taggers at the IceTop experiment, which studies the interaction of cosmic rays with the Earth's atmosphere. 3) Measurement of snow accumulation over IceTop tanks to identify possible detrimental effects of snow coverage on cosmic ray detection. 4) Support of public outreach efforts for IceCube, which included writing online, bilingual, daily journals—which ran through January 2015—as well as participation in live Internet presentations from the Pole which attracted a worldwide audience.

Starting February 1st, 2015 went on to share the experience, keeping a busy agenda both in the classroom and with the community. Summary of results as of May 1st, 2015: 1) Taught 80.25 hours of class where I have directly discussed my South Pole expedition, out of a grand total of 200 hours throughout the semester and at three different academic institutions. As a result, approximately 190 students have been exposed to my PolarTREC experience. 2) Gave 26 invited lectures where I have shared my South Pole experience. Total direct audience is 1,242 persons, while total lecture time is 25 hours with 7 minutes. 3) Achieved 110 media hits that, in one way or another, tell about my work at the South Pole. This includes one magazine cover. 4) Did two television interviews (16 min. + 9 min.) and one radio interview (30 min.), for a total of 55 minutes of air time.
Antarctic Ice Stream Dynamics

- **Location:** Research Vessel Nathaniel B. Palmer
- **Project Funded Title:** Vulnerability of East Antarctic ice streams to warm ocean water incursions

Teacher – Dominique Richardson
Researcher – Frank Nitsche
PolarTREC Alumni Advice
John Wood

- Erebus Volcano Antarctica
- Carbon Balance in Warming and Drying Tundra
- Carbon Balance in Warming and Drying Tundra 2012
PolarTREC Alumni Advice
Michelle Brown

• Human Impacts in Antarctica 2011
• Space Weather Monitoring on the Antarctic Plateau
Slow and Steady

Michelle Brown
PolarTREC Expeditions
2011-2012
Life happens.
It’s okay to be a tortoise.
Your relationship with your research team doesn’t end at the airport.
Make as many connections to your classroom as you can!

Solar Radiation Cans

Solstice & the Seasons

Weather Instruments

Weather Stations
- Ms. Brown installing a weather station in Antarctica
- Weather stations record information such as:
  - Temperature
  - Visibility
  - Wind Speed
  - Wind direction
  - Pressure

Picture of the Day

Earth Science Picture of the Day: Freezing Friday
- To sample sediment on land, we pick random sites, find them with GPS, then collect sediment!
What happens now?! 

- Evaluation  
- Expedition pages  
- Social networking  
- Travel Requests  
- Requirements  
- ECW Gear Checkout  
- Continued Collaboration
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- Polar Education Email List
- FB: PolarTREC (Teachers and Researchers Exploring and Collaborating)
- Twitter @PolarTREC
What happens now?!

- Evaluation
- Expedition pages
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- 2 lessons, vetted by science team
- Public Science Report
- Return Gear/Photos
- Updating requirements list online
- Update E&O plan – 1 year later

www.polartrec.com
Upcoming…

• Bill Schmoker on Healy Aug-Oct

• 2015-16 Antarctic Expeditions

• 2016-17 Apps Open in July!

• Looking for Selection Committee
Ideas, Needs, and Questions
Thank You!

An archive of the event will be available.