



Living & Working at the South Pole



Dr. Katey Shirey
PolarTREC 2010

Knowles Science Teaching Foundation

Kate Miller
PolarTREC 2016
Washington-Lee High School
Arlington, VA



Emperor Penguins



Polar Bears

How did we get to there?



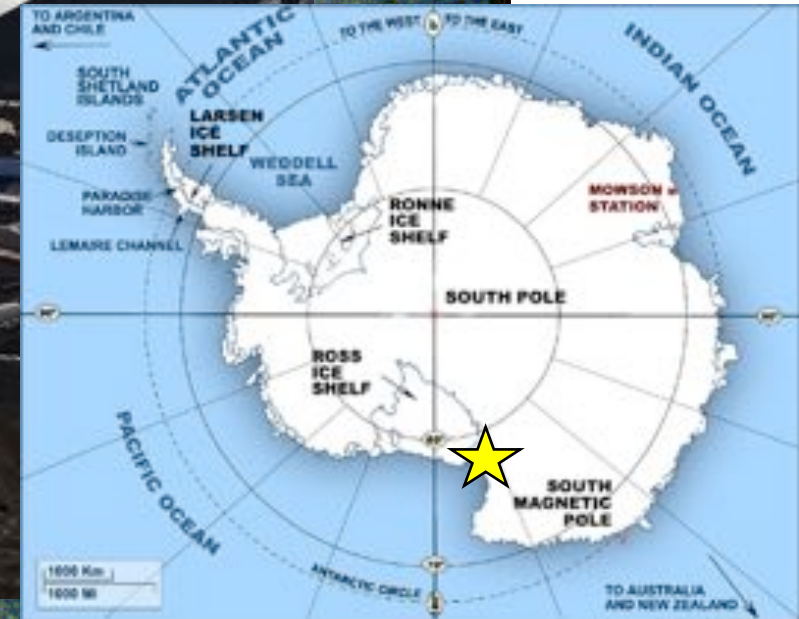


C-17 Globemaster



McMurdo Station

Not so cold!



ANTARCTICA



Another flight!



C-130
3 hours





Amundsen-Scott South Pole Station (US)





Geographic South Pole

Roadl Amundsen

October 14, 1911

"We arrived and
were able to plant our
flag at the geographical
South Pole."



elevation 9,301 feet

Robert E. Scott

January 17, 1912

"The Pole. Yes, but
under very different
circumstances from
those expected."





Day: October-March
Night: April-September

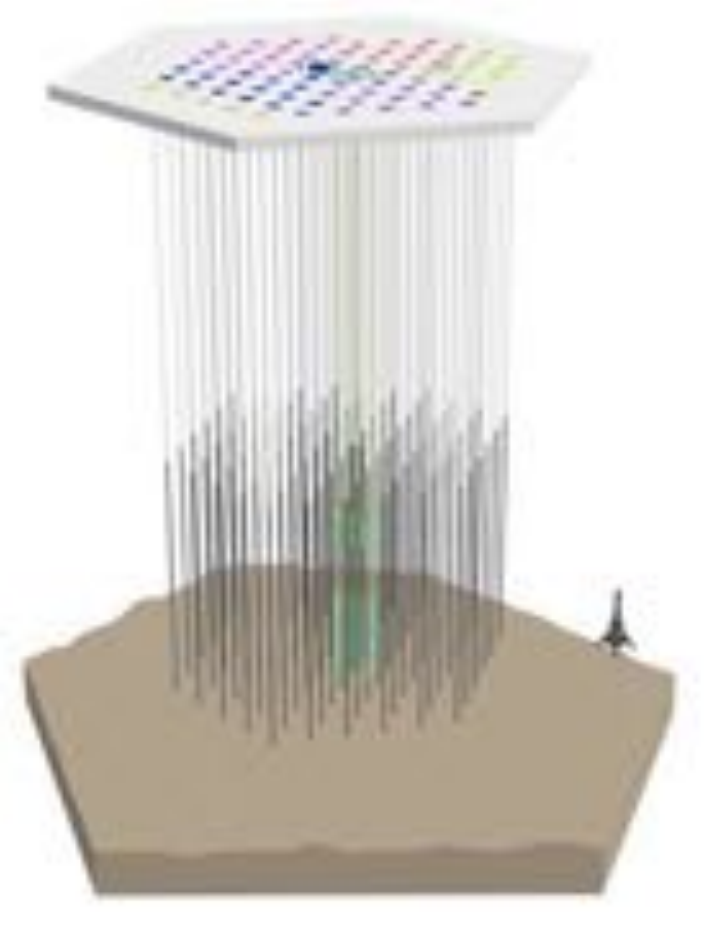
It's cold!!!
(-35F)



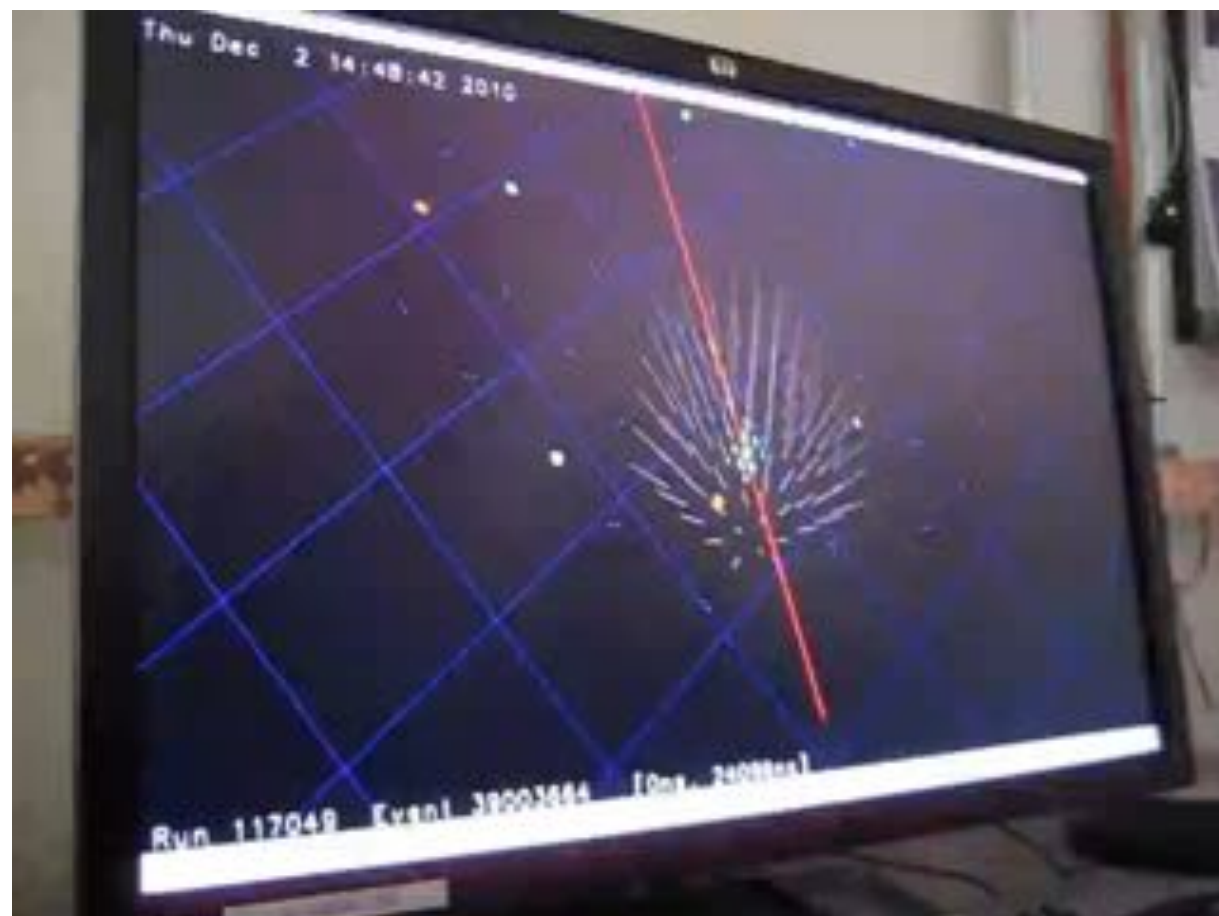
What should I wear?



Our Job



IceCube Neutrino Observatory



Engaging Students AT the South Pole

Tour of the South Pole Station

Fly Your Flag at the South Pole Contest – 100+ entries

19 likes

Ms. Miller

Page Messages



Ms. Miller

@MillerSouthPole

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Follow with 500+ postcards made

Engaging Students AFTER the South Pole



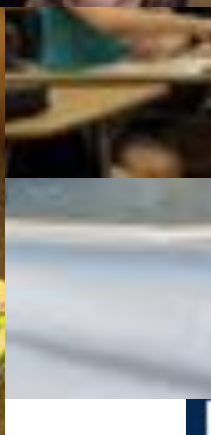
Media Outreach Events

Bring Your Daughter Home Mission Night, Work Day
Dream, Explore, Create your own path

CROSSED SABRES

Co-presented with Dr. Katey Shirley, people Pleasure, cost-effective fun for the whole family, middle school-aged kids, parents.

AN Antarctic Expedition

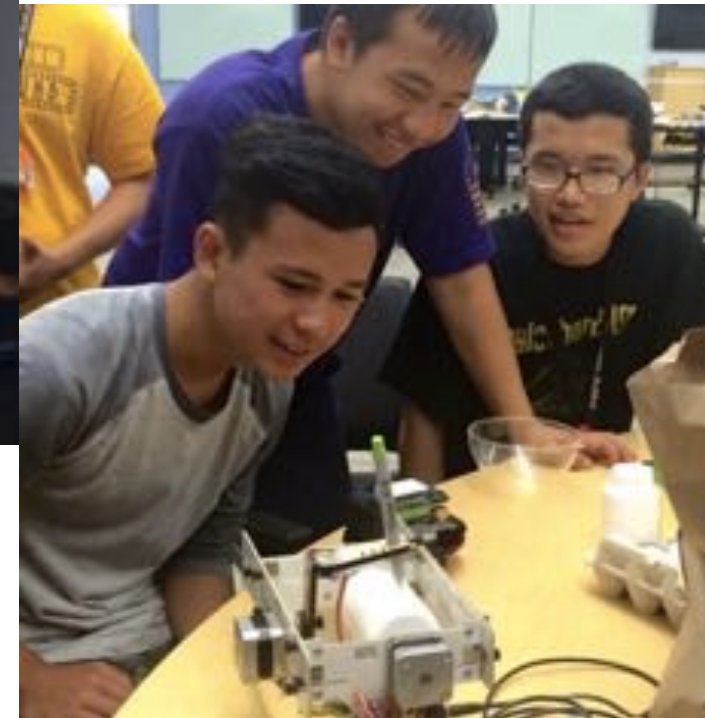


IS

Engaging Students IN THE CLASSROOM



2 weeks in July; 25 students; overarching theme of interaction (just as neutrinos interact with the South Pole ice)



How can you become a teacher in Antarctica?



- Selects 10-20 teachers for Arctic & Antarctic expeditions each year
- <https://www.polartrec.com/about/application>
- Deadline right around the beginning of school
- 2018-2019 application is closed, but think ahead to 2019-2020!

Engage your students while staying warm(er)

- Blogs

- read & comment!
- polartrec.com
 - bit.ly/MillerSouthPole
 - bit.ly/ShireySouthPole
 - bit.ly/AndersonSouthPole

- Webcasts

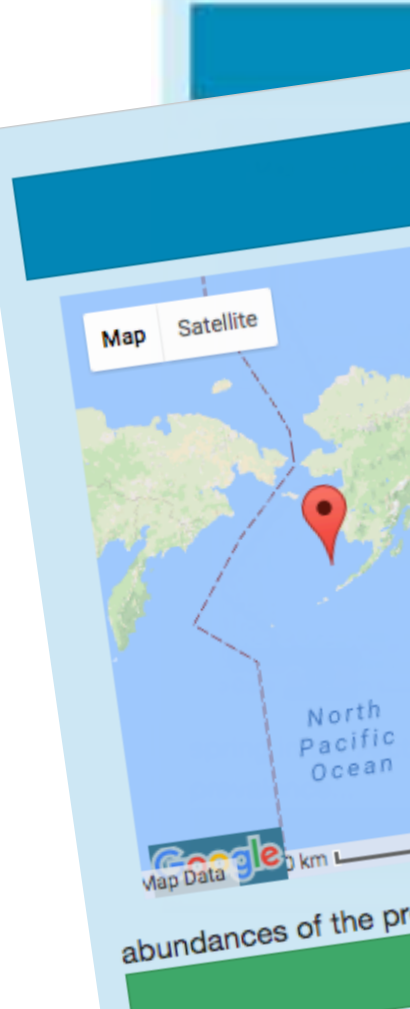
- Listen to a presentation LIVE from Antarctica!
- Ask questions and get real-time answers

- Outreach opportunities

- Postcard from the South Pole
- Experiment at the South Pole



If neutrinos don't do it for you...



Map Satellite

North Pacific Ocean

Google Map Data 0 km

abundances of the pre

CO₂ and pH Studies of the Arctic Ocean



Map Satellite

Map

Dates:
4 September 2017 to 5 October 2017

Location:
CCGS Louis S. St-Laurent, Beaufort Sea



Teacher: Dave Jones

What Are They Doing?
An underwater view of a CTD (conductivity, temperature, and depth instrument). Photo by Bill Schmoker. Global warming and other climate-related processes are rapidly changing the Arctic Ocean. The carbon cycle is of particular concern in the Arctic because it is unknown how carbon sources and sinks will change and whether these changes will lead to increased greenhouse gas accumulation in the atmosphere. Not much is known about the CO₂ cycle in the central Arctic Ocean basins because nearly...



Follow Expedition!



Photo by Dan
iability of
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change in the
oral scales, are



and
with
ill
d



Questions?

- Thank you for coming!

HOW TO FIND OUT MORE:

- PolarTREC: polartrec.com
- IceCube Neutrino Observatory: icecube.wisc.edu/

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