



Welcome to a Special Event!

Taking PolarTREC to the Classroom and Beyond

Reflecting on the Experience

Wednesday, 24 June 2015

Blackboard collaborate

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. On the right, a presentation slide is shown with the text "Welcome to Blackboard Collaborate" and the ARCUS logo (Arctic Research Consortium of the United States). On the left, a control panel contains several sections: a "Talk" section with a microphone icon and a "Mute" button; a "Participants" list showing "Sarah Crocker" and "Arctic Research Consortium of the US" with icons for raising a hand and sharing emoticons; and a "Chat" section with a list of chat messages and a "Send" button. Arrows from the text labels on the left point to these specific interface elements.

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.



www.polartrec.com

Follow Expeditions • Teaching Resources • Live Connections

Take your students on a polar science adventure with PolarTREC! Your classroom could be virtually transported to an icebreaker in the Amundsen Sea, a remote field camp in Alaska, or an archipelago of islands in the high Arctic. Experience the excitement of the polar regions by reading journals, looking at pictures, watching videos, and interacting with teachers and researchers working in the polar regions by asking questions online and joining PolarConnect live events from the field.




Join the 2014-2015 PolarTREC teachers on their ANTARCTIC expeditions!

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

	Year	Total Teachers	Arctic	Antarctic
NSF IPY Award  	2007-2008	20	11	9
	2008-2009	15	10	5
	2009-2010	19	14	5
NSF OPP Award 	2010-2011	15	11	4
	2011-2012	14	8	6
	2012-2013	17	12	5
	2013-2014	18	12	6
NSF OPP	2014-2015	18	11	7
		136*	89*	47

* Totals include 9 NSF Einstein Fellows



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

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

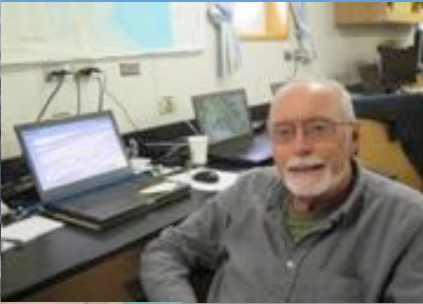
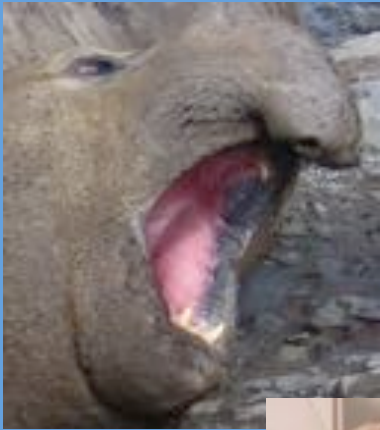
Sea Floor Changes and the Antarctic Circumpolar Current

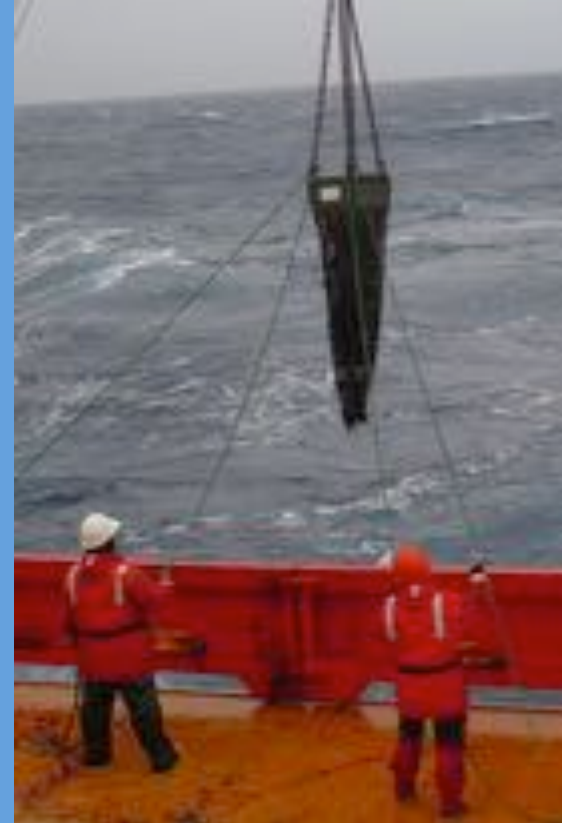
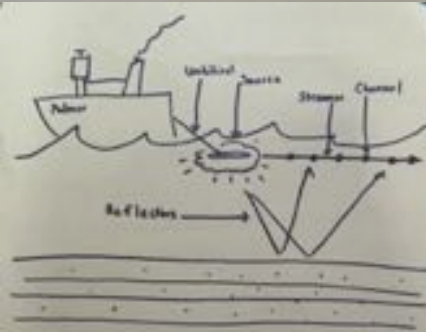
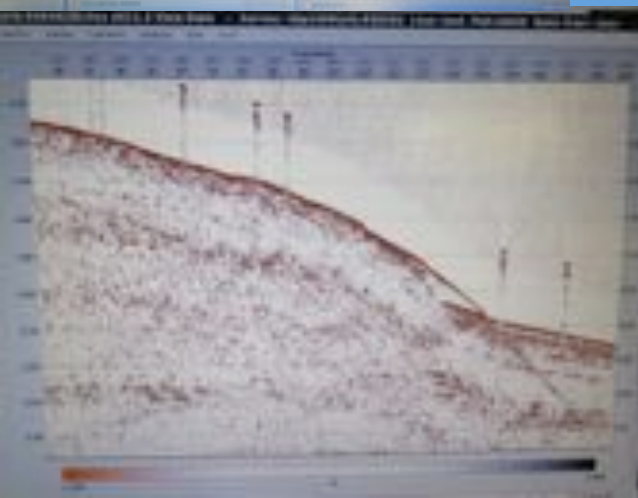
- **Location:** *Research Vessel Nathaniel B. Palmer*
- **Project Funded Title:** *Role of the Central Scotia Sea Floor and North Scotia Ridge in the onset and development of the Antarctic Circumpolar Current*



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*



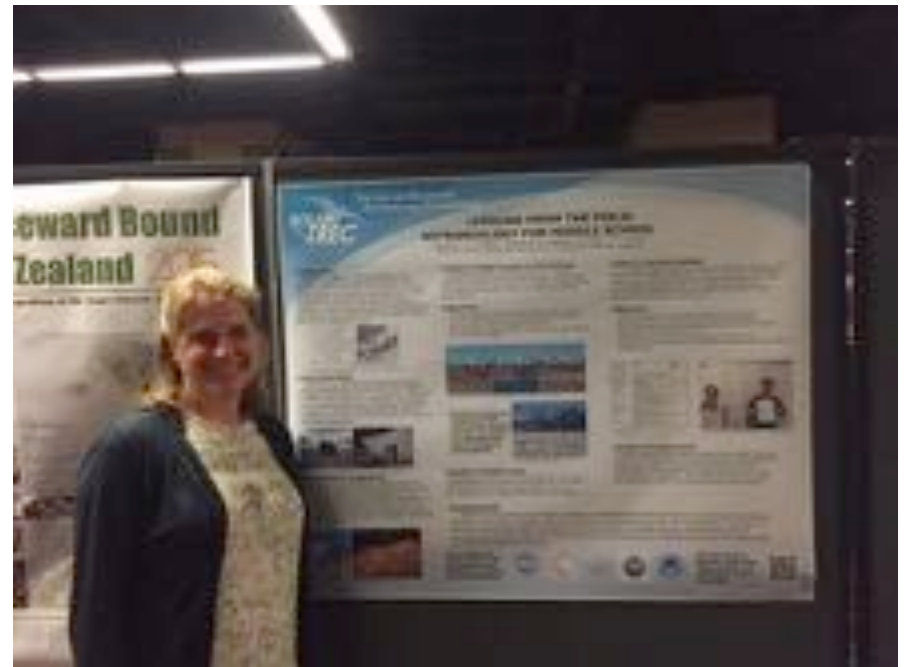
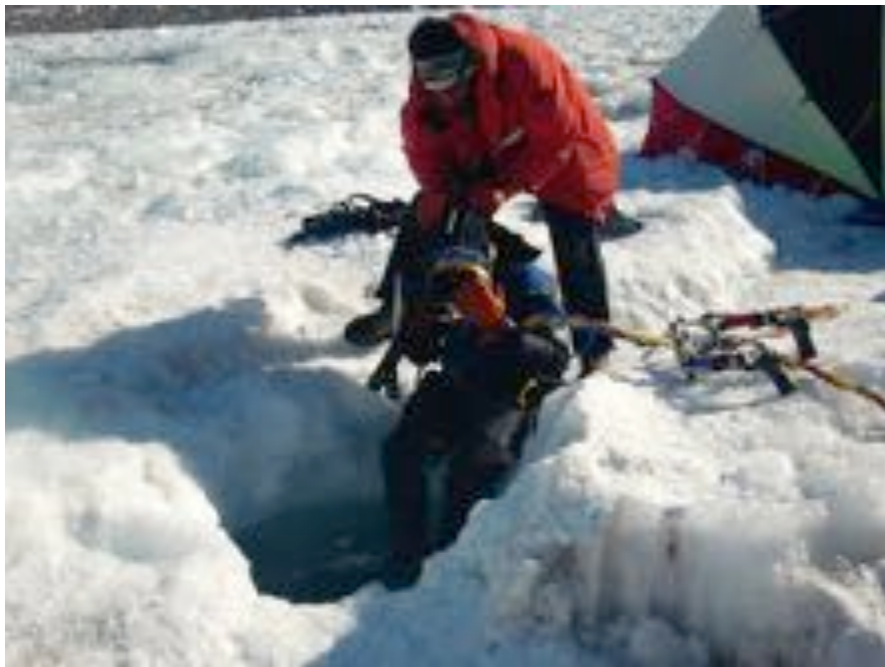
Teacher – Lucy Coleman
Researcher – Dawn Sumner
Senior Graduate Student – Tyler Mackey

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!

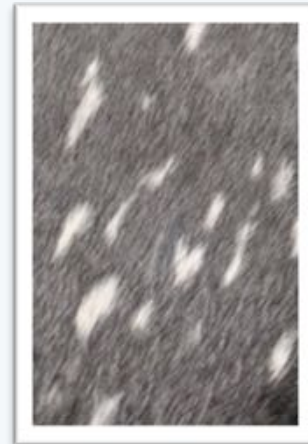
Collecting samples...

Skin, Blood,

Muscle, Blubber,

Whisker and Fur

Weighing and measuring the seal



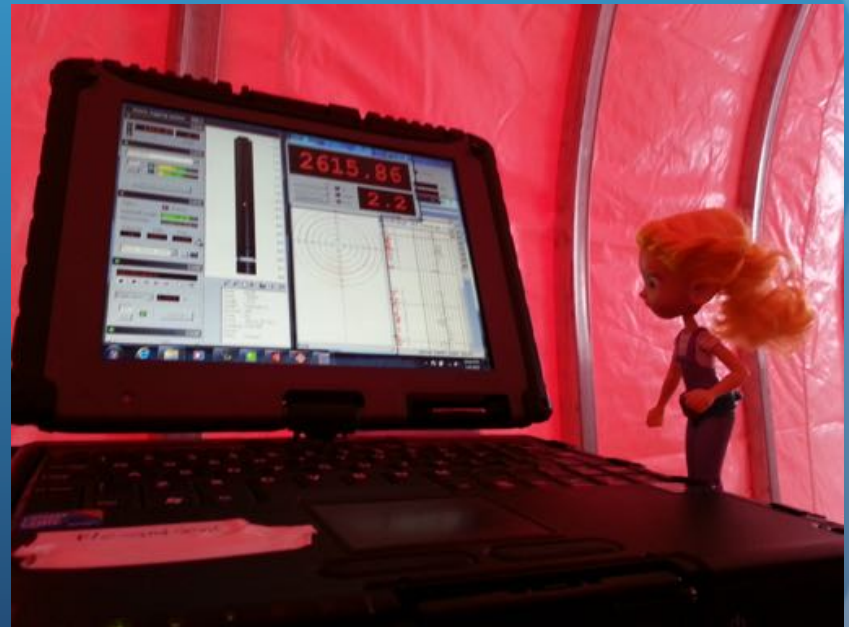
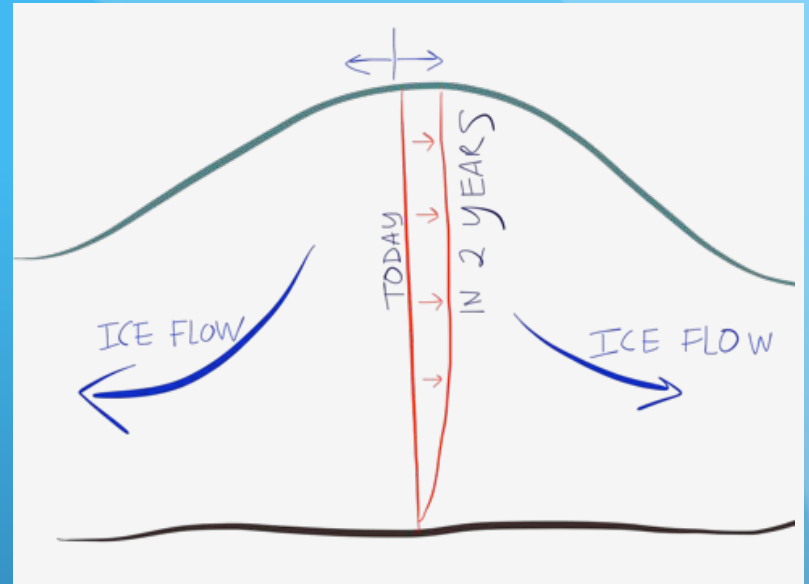
West Antarctic Ice Sheet Microstructures

- **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*

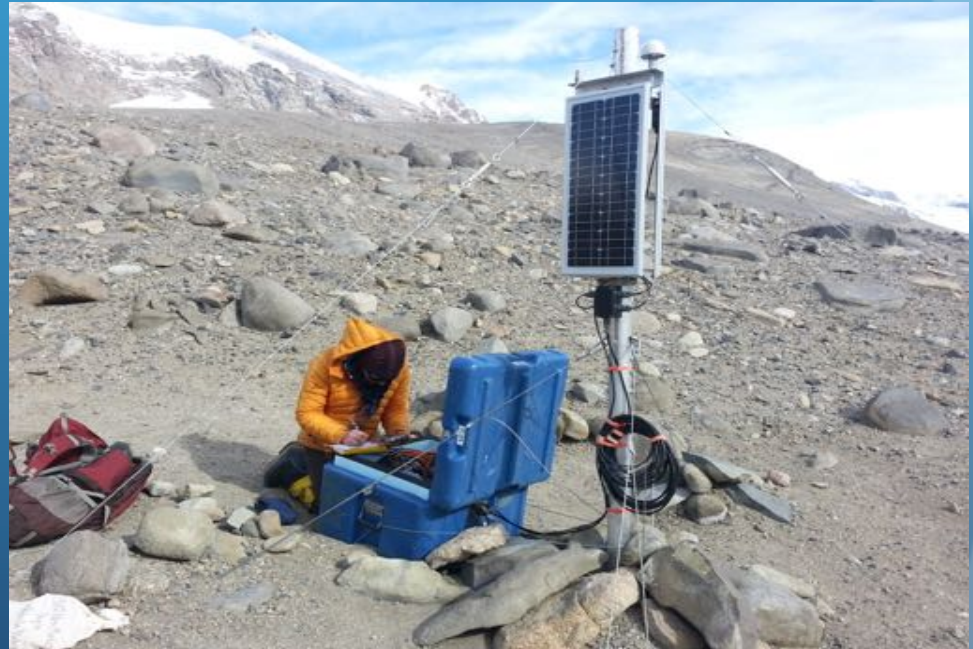


Teacher – Yamini Bala
Researcher – Erin Pettit
Researcher – Rachel Obbard
Research Assistant – Tiffany Green

WAIS Divide

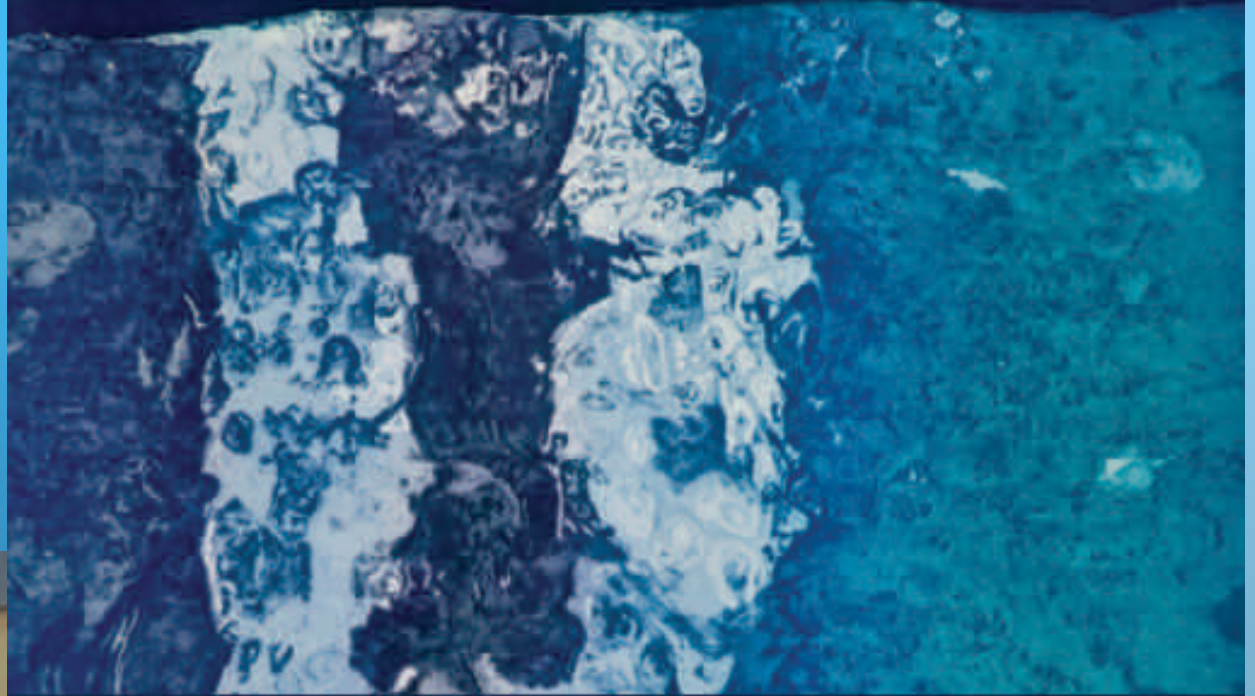


Extra Projects



Education!

ANTARCTIC ART CONTEST



*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.

Un boricua en la ANTÁRTIDA

El profesor de Astronomía Armand Caussade pasó 18 días en el Polo Sur como parte del programa PolarTREC

CIENCIA 59

Geographic South Pole

Armando Caussade

El profesor Armand Caussade, boricua, viajó a la Antártida para participar en el programa PolarTREC. Allí, durante 18 días, estuvo en el Polo Sur, donde se encuentra el Observatorio IceCube. Caussade, profesor de Astronomía en la Universidad de Puerto Rico, fue uno de los pocos boricuas en participar en esta expedición científica. En la imagen, Caussade es visto en su traje naranja de invierno, sosteniendo una bandera puertorriqueña.

PUBLICACIÓN OFICIAL DE LA SOCIEDAD DE ASTRONOMÍA DE PUERTO RICO, INC.

El Observador

29 AÑOS ESTUDIANDO EL FIRMAMENTO! FEBRERO 2015 • VOL. 30, NÚM. 2

NASA

Geographic South Pole

Robert F. Scott
January 17, 1912
"The Pole. Yes, but under very different circumstances from those expected."

elevation 9,301 feet

Armando Caussade

Armando Caussade, profesor de Astronomía, viajó al Polo Sur para participar en el programa PolarTREC. En la imagen, Caussade es visto en su traje naranja de invierno, sosteniendo una bandera puertorriqueña.

• **Ciencia@NASA: "Buenas noticias sobre los bosques y el dióxido de carbono"**, pág. 2-3
• **Buscapalabras**, pág. 5
• **"Asteroide que pasó cerca de la Tierra tiene un satélite"**, pág. 8
• **"Accionado a la astronomía o astrónomo aficionado"**, pgs. 10-11
• **"La Constelación Tauro"**, pgs. 12-13

URL: www.ASTRONOMIAPR.ORG • FACEBOOK: www.FACEBOOK.COM/SAAPRINC • TWITTER: @SOCIEDADASTROPR

IN NEWS

Armando Caussade compartió sus experiencias únicas en el Polo Sur

EXPERIENCIA ÚNICA

Armando Caussade

Armando Caussade, profesor de Astronomía, viajó al Polo Sur para participar en el programa PolarTREC. En la imagen, Caussade es visto en su traje naranja de invierno, sosteniendo una bandera puertorriqueña.

EDP University

- Enfermería
- Terapia Física
- Diseño de Moda Digital
- Programación de Computadoras

NUEVO Centro de Estudios MANATI con ofertas académicas de "Grados Asociados" en las siguientes áreas:

Calla Mc Keeley 9111 787-621-3652
1-855-999-3378 (EDPU)

EDP UNIVERSITY

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

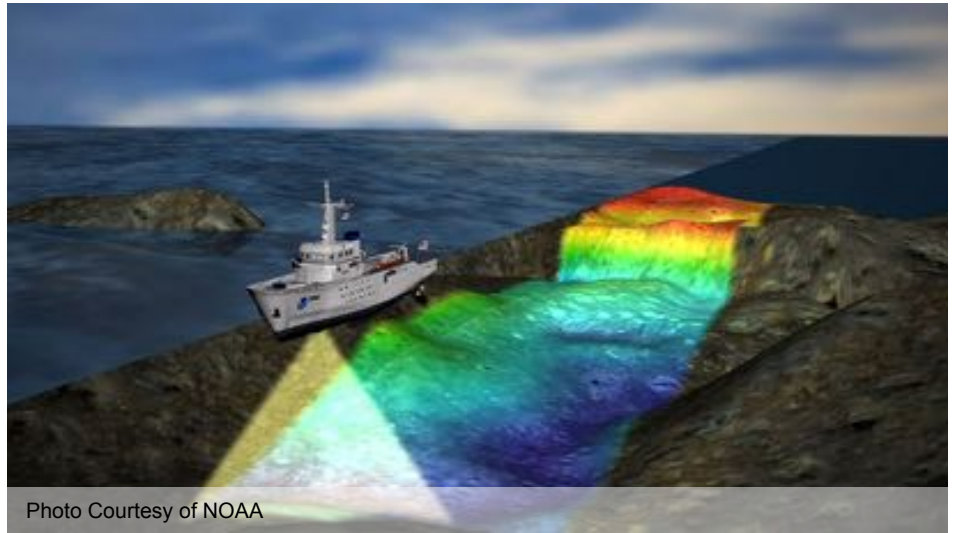
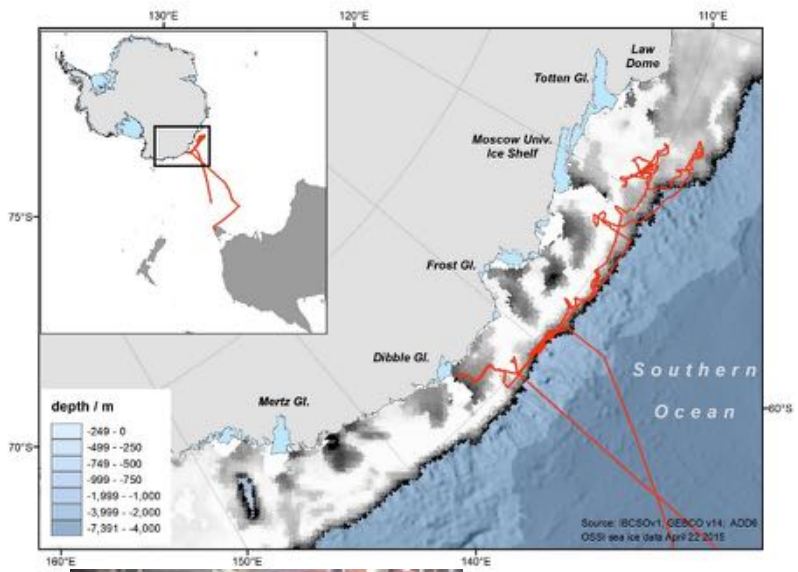


Photo Courtesy of NOAA

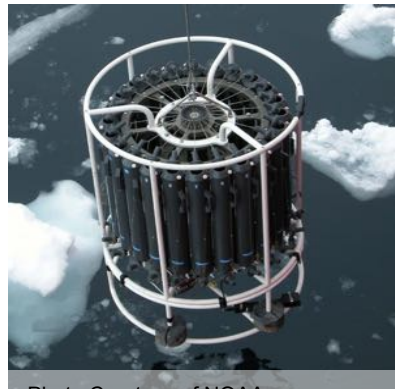
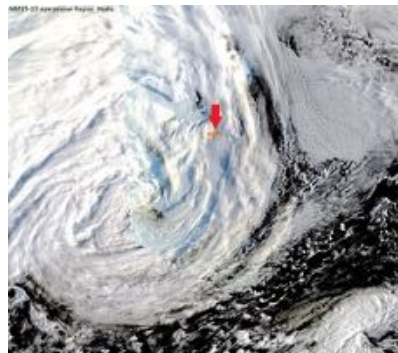
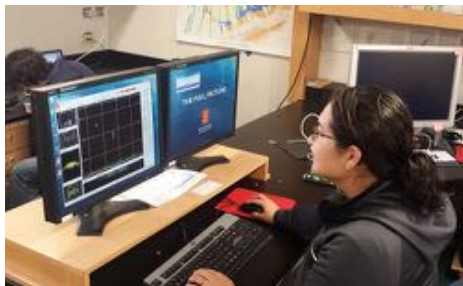
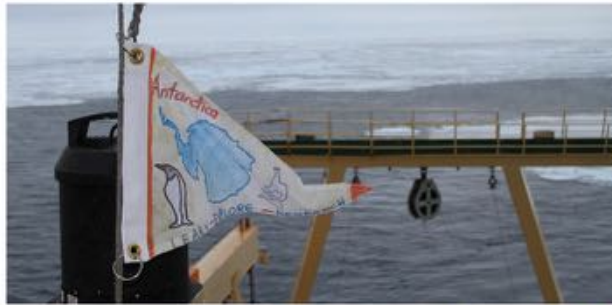


Photo Courtesy of NOAA



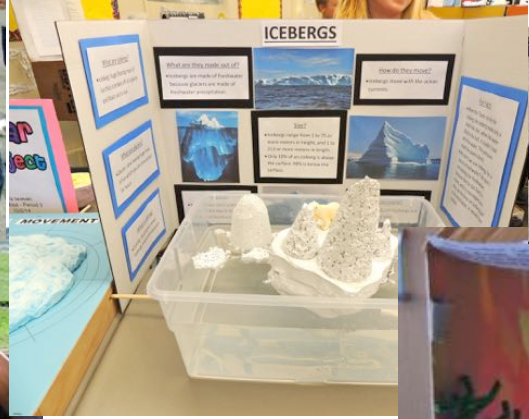
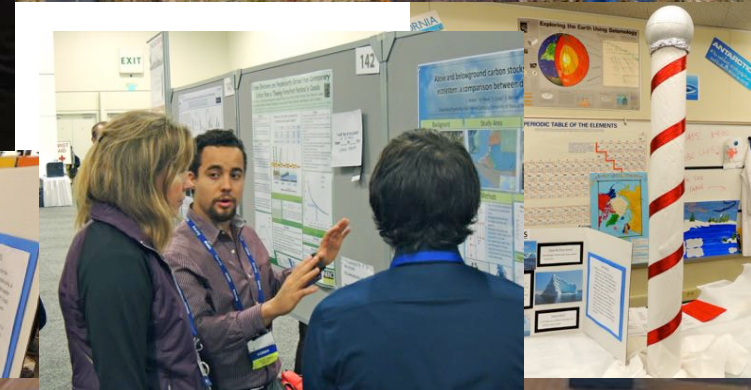
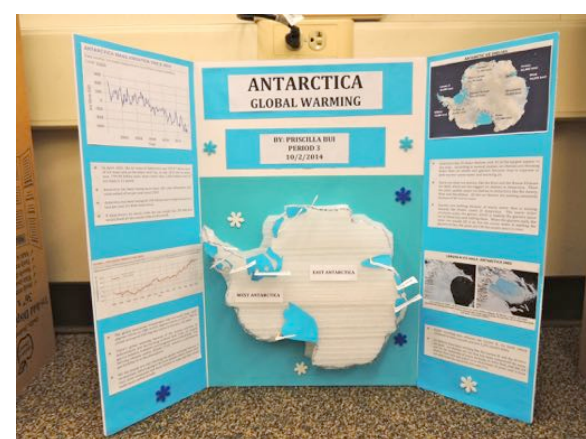


PolarTREC Alumni Advice

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.

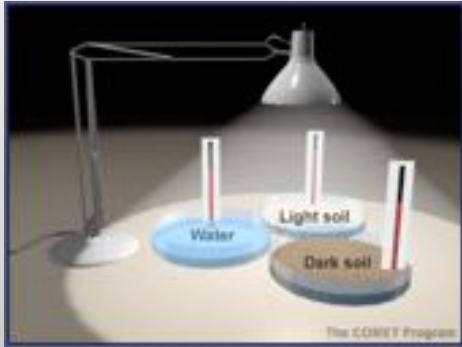


Your relationship with your research team doesn't end at the airport.

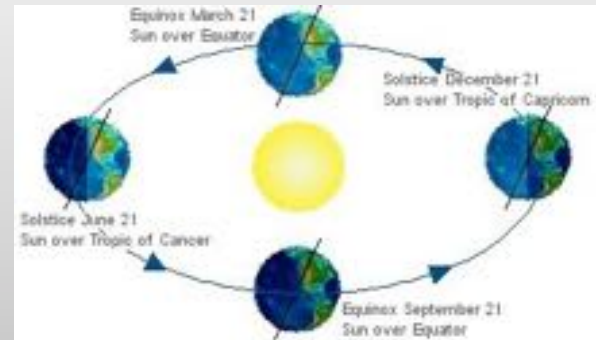
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	me, Andy, robert (11)	inbox	Monday, June 22 -- meet up for dinner? - bobmelville1@gmail.com> >>>> > wr	Jun 22
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (2)	inbox	separate topic - bobmelville1@gmail.com> wrote: Michelle Big deal Hungarian :	Jun 16
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me, Andy (8)	inbox	summer plans - gmail.com> >> > wrote: >> > >> >> Hi Bob & Andy!! >> >> >> :	Jun 11
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (8)	inbox	fyi - bobmelville1@gmail.com> wrote: >>>> >>>>> It would be super for you to	Apr 28
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (3)	inbox	Space weather material from Haystack - bobmelville1@gmail.com> wrote: http:	Apr 25
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (4)	inbox	Fwd: Education webinar - bobmelville1@gmail.com> wrote: In Montreal at danc	Feb 15
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (2)	inbox	Fwd: PL Hueneme Auction - bobmelville1@gmail.com> wrote: Forwarded mess	Feb 6
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	me, robert (5)	inbox	Reference? - bobmelville1@gmail.com> wrote: RU home now? Phone number'	Feb 5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	me		PEI Application - Hi Gary, Sorry for the delay--I had a pretty serious hand injury on Mon	Feb 5
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (4)	inbox	update - bobmelville1@gmail.com> wrote: We are now in NZ hoping to fly tomc	11/8/14
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (2)	inbox	science toys - bobmelville1@gmail.com> wrote: Michelle You left all you stuff hi	10/5/14
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me, Andy (5)	inbox	Weekend - Michelle: Bob's shop, probably the best place to meet, is around bai	10/4/14
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	me, robert, Andy (13)	inbox	Visiting New Jersey? - gmail.com> >>> >> wrote: >>> >> >>> >>> > Also, I hav	10/3/14
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	robert, me (4)	inbox	P.S. - bobmelville1@gmail.com> Date: Mon, Sep 29, 2014 at 11:15 PM Subject	10/1/14
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	me ... Andrew, Andrew (6)	inbox	PolarTREC program is losing its funding! Please help! - gmail.com> wrote: Hi a	9/29/14

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

What happens now?!

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

What happens now?!

- Evaluation
 - Expedition pages
 - Social networking
 - Travel Requests
 - Requirements 
 - ECW Gear Checkout
 - Continued Collaboration
- Polar Education Email List
 - FB: PolarTREC (Teachers and Researchers Exploring and Collaborating)
 - Twitter @PolarTREC
 - 2 lessons, vetted by science team
 - Public Science Report
 - Return Gear/Photos
 - Updating requirements list online
 - Update E&O plan – 1 year later



- Bill Schmoker on Healy Aug-Oct
- 2015-16 Antarctic Expeditions



Upcoming...



- 2016-17 Apps Open in July!
- Looking for Selection Committee



Ideas, Needs, and Questions



Thank You!

An archive of the event will be available.

