

The Broad-Spectrum Benefits of Research Partnerships Between Teachers and Marine Scientists



In 2007, the NSF funded PolarTREC program managed by ARCUS chose me to join a US/Swedish oceanographic expedition to the Antarctic Southern Ocean.



Dr. Tish Yager and I met during that expedition, and began what was to become a lasting collaborative partnership.

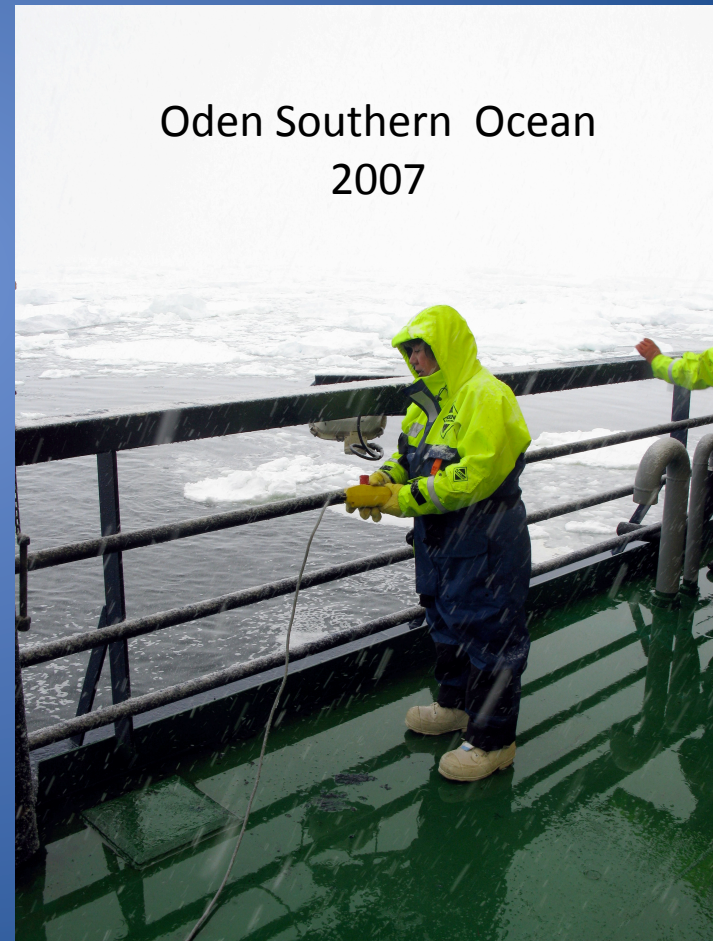
During the International Polar Year grant period from 2007-2010, **PolarTREC** teamed 48 teachers with polar researchers, with a potential impact on over 5000 classroom students.



The current 2010-2014 PolarTREC grant will place an additional 48 teachers in the Arctic and Antarctic regions to conduct research with scientists.



Nitrogen in the Arctic
Ecosystem 2011



Oden Southern Ocean
2007



So who benefits the *most* from these teacher-researcher collaborations???

Researchers benefit from working with teachers by:

- Gaining perspectives on how science is taught



- Having their research explained in ways that the broader public can understand




• Public outreach to US and International audiences

Arctic Nitrogen >>

http://arcticnitro.org/

Arctic Nitrogen >>

About Contact Research Educators Support



Will more marine algae grow to feed coastal animals?
This depends on whether there is nitrogen available. (Photo: Patricia Yager)

[MORE PHOTOS](#)

What is all this about?
We study how tiny microbes impact the Arctic food web.


Amazon Continuum >> Researching Climate Change Where the Amazon Meets the Atlantic

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The Amazon River is nearly 4,000 miles long.
Its impact, however, is not limited to South America. (Image: NASA)

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What is all this about?
We study climate change where the Amazon meets the Atlantic.

PolarTREC | Teachers and Researchers Exploring and Collaborating

http://www.polar-trec.com/

PolarTREC | Teachers and Resear...

TEACHERS AND RESEARCHERS EXPLORING AND COLLABORATING

HOME ABOUT EN ESPAÑOL VIRTUAL BASE CAMP NEWSROOM FOR TEACHERS FOR RESEARCHERS RESOURCES


Follow an Expedition...
VISIT THE Virtual Base Camp!

Find a Team Member

Use the text field above to locate a PolarTREC member.

[Locate](#)

Connect to Antarctica!
Join us for an upcoming PolarConnect event with Alex Eilers and the research team on 13 February 2012. This event is free and easy to join!



Learning Resources

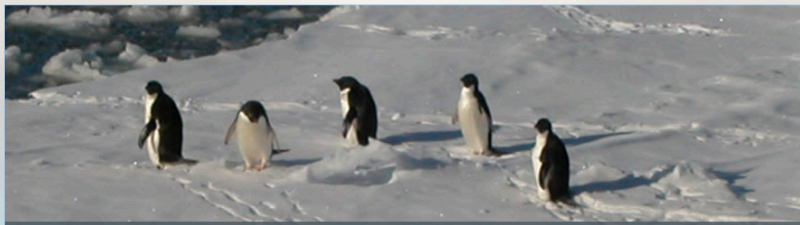
PolarConnect

AntarcticASPIRE >>

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There's a place that only penguins have known.
Far from human exploration and habitation.

[MORE PHOTOS](#)

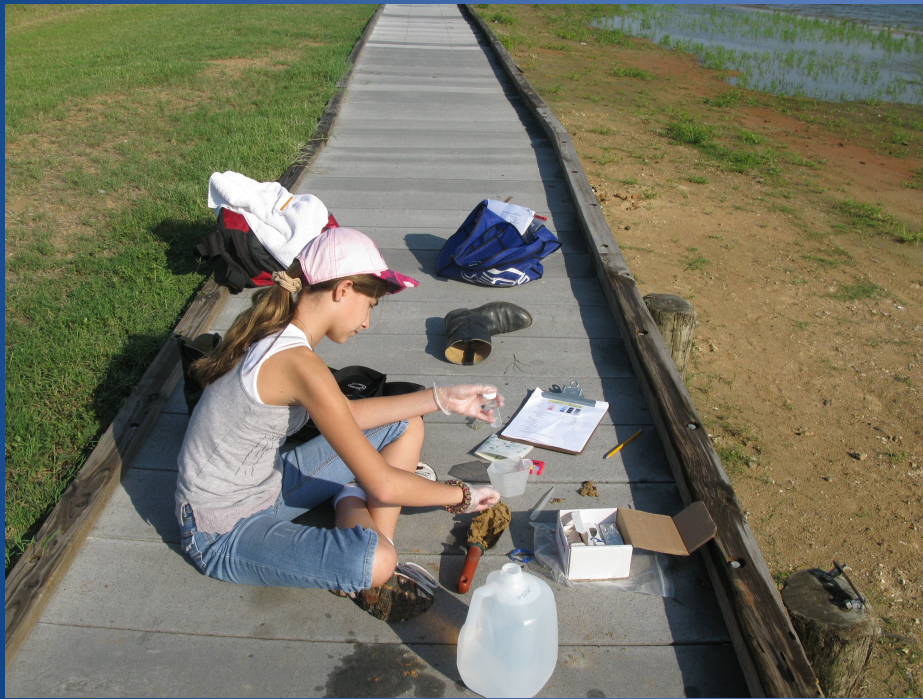
What is all this about?
We study how climate change impacts a polar hotspot.

- Collaborations that produce lessons based on their research



For teachers:

Collaborations are transforming classroom education by using authentic research as a platform for STEM-based learning.



Hands-on experiences develop new skills and knowledge that energize their classrooms!



And, sustained collaborations can result in new opportunities and support networks, for both teachers and researchers !



SMORE: Students Monitoring Ocean Response to Eutrophication



Texas



Alaska



Georgia

Ongoing case studies will determine the long-term changes on how teachers teach as a result of these experiences.

SMORE Alaska



What about the students?



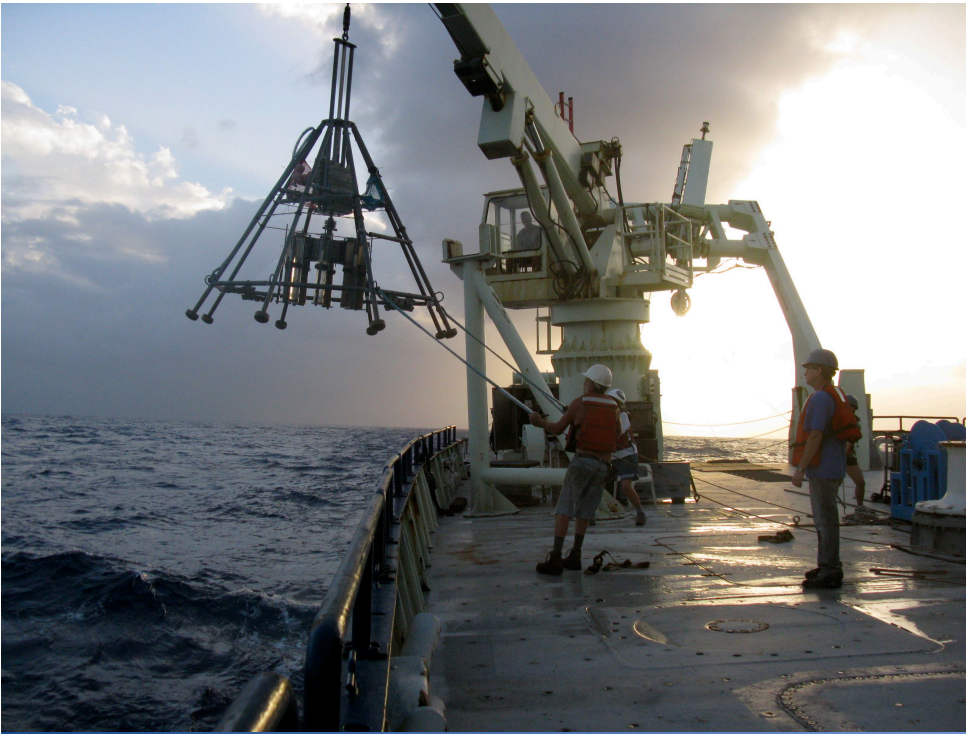
Using real-time research in place-based ocean science gives students

- new opportunities in experiential learning
- access to expert mentors
- and classroom studies on marine science topics generally not covered in school!

Moreover, teachers report:
Increased student understanding based on pre/post
and on-going assessments



Positive change towards
STEM-based learning...





...and careers in science,
especially among
underrepresented groups.

And Expressed interest in exploration and the scientific process!



The ultimate goal? INSPIRING THE NEXT GENERATION OF SCIENTISTS !!!



SMORE Texas



