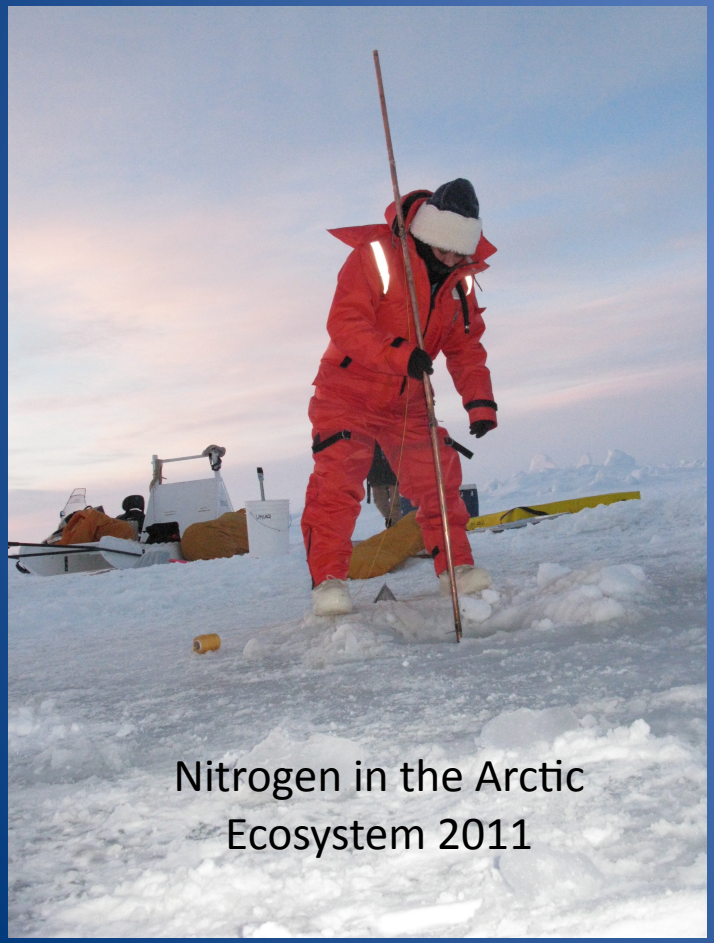
The Broad-Spectrum Benefits of Research Partnerships Between Teachers and Marine Scientists

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

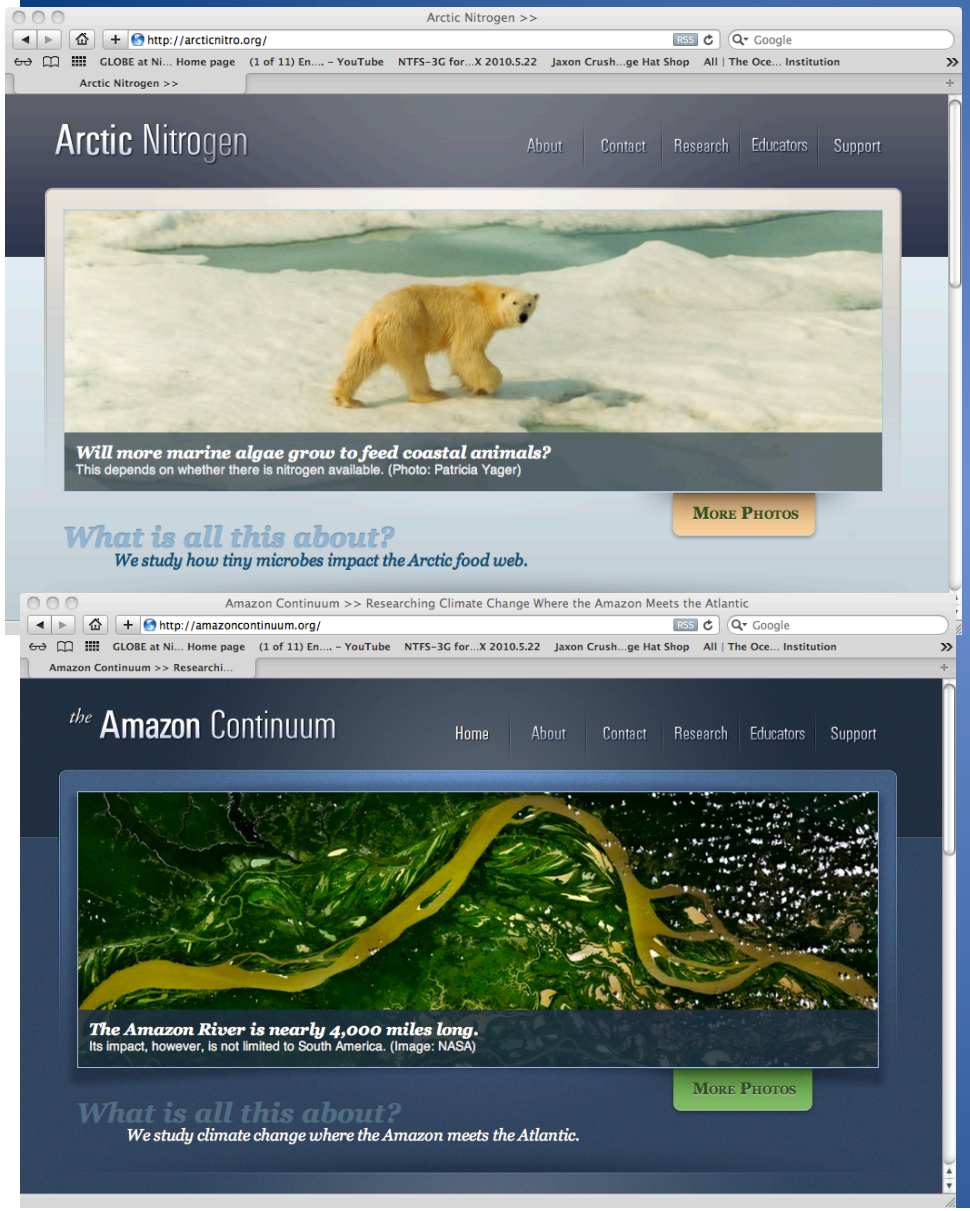
So who benefits the *most* from these teacher-researcher collaborations???

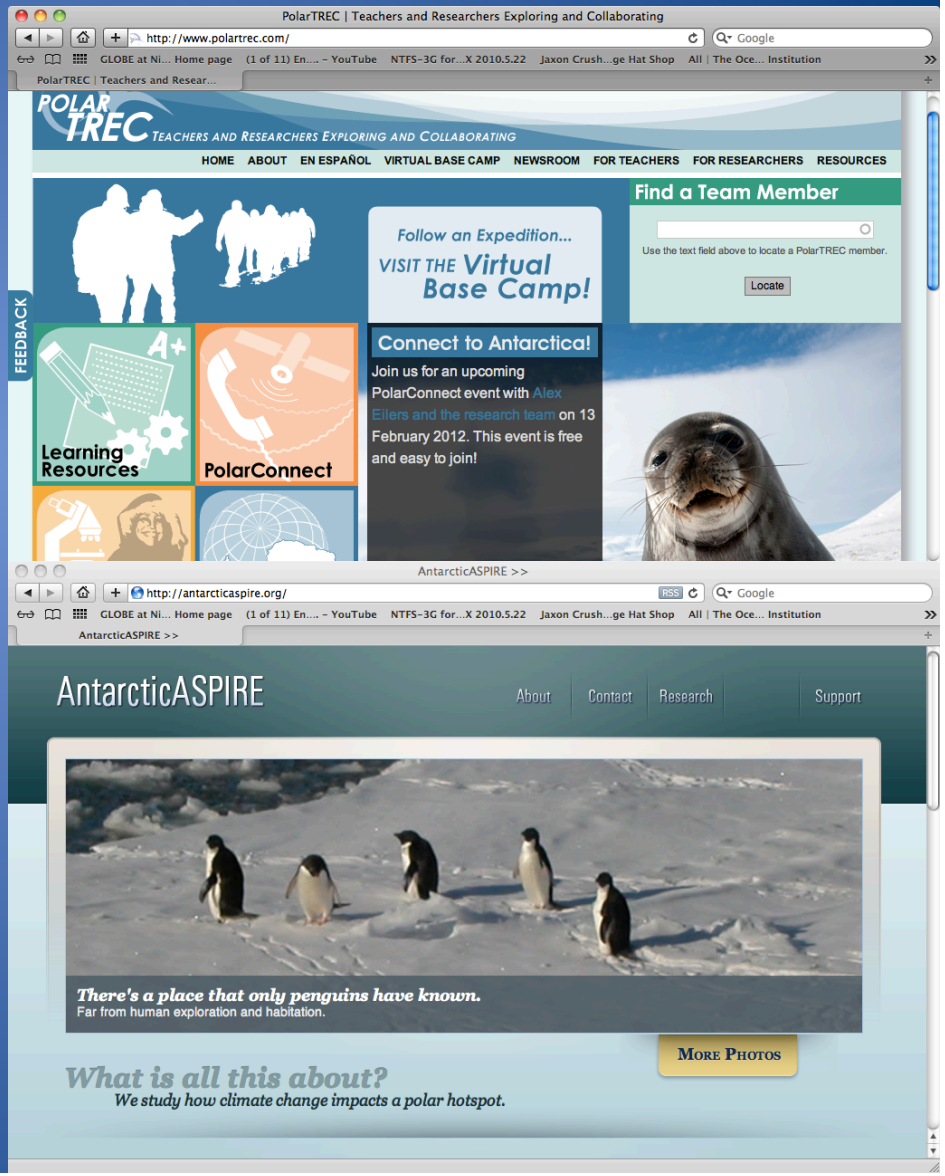
Researchers benefit from working with teachers by:

- 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





- 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

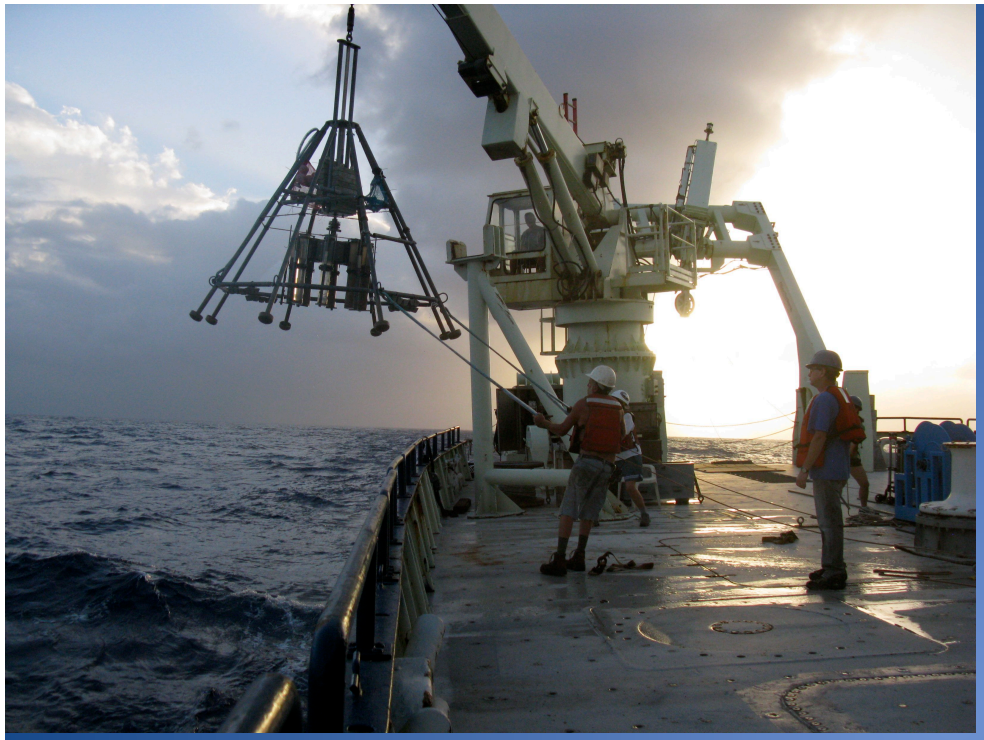
Ongoing case studies will determine the long-term changes on how teachers teach as a result of these experiences.

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