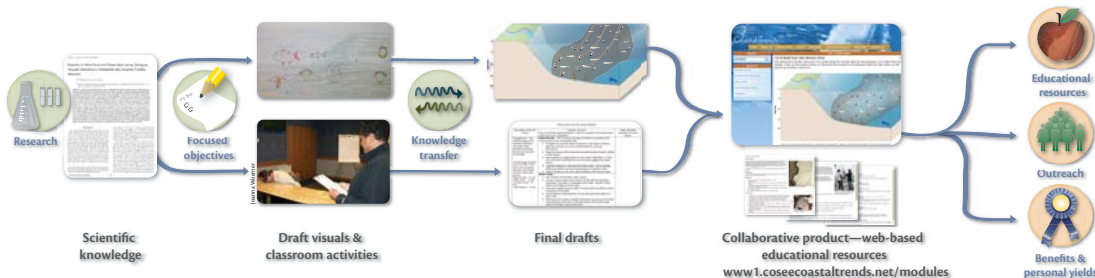
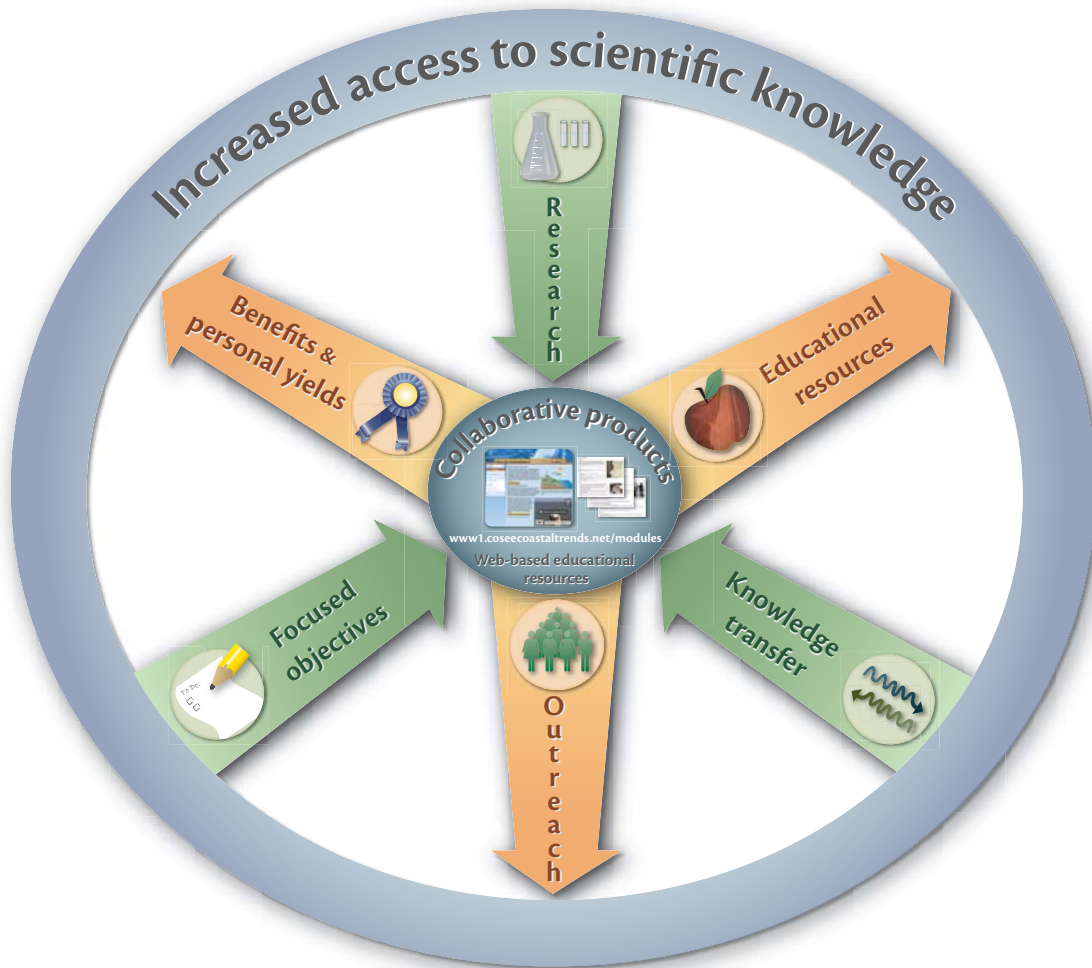


# Unlimited Access: Using collaborative products to make current scientific knowledge more accessible

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## Why are collaborative products effective at increasing access?

An ever growing number of scientists recognize the need to increase awareness about ocean science research, especially in regard to policy initiatives on climate change. However, scientists may find it difficult to reach an audience outside of their community. At the same time, educators are searching for accurate and engaging science education resources to inspire students to become interested in scientific discovery. Collaborations between scientists and educators can meet both of these needs and provide unlimited access for students to learn about science. If increased access to scientific knowledge requires research, focused objectives, and a transfer of knowledge between

scientists and educators, then scientist-educator fellowship teams are a way to bring the appropriate people together around a specific project that can help bring scientific knowledge to a broader audience. The scientist-educator fellowship teams, sponsored by COSEE Coastal Trends, have an ocean science researcher, a 7<sup>th</sup>–12<sup>th</sup> grade educator, a graduate student, and an undergraduate student. Team members collaborate to develop web-based educational resources. These resources include lesson plans, online activities and assessments, self-contained visuals, and videos—resources that support outreach and broader impacts initiatives.

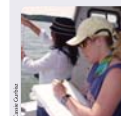


## How do collaborative products support outreach?

The educational resources (the collaborative product) were incorporated into teacher professional development workshops. Feedback from participants indicate that the resources are useful—as illustrated by the following comments:

- "I plan to incorporate components of each [topic] into my program and I believe my students will benefit greatly."
- "The hands-on activities are tremendous."
- "The information I got from the workshop made me appreciate the importance of maritime ecosystems."

Educators can help students explore ocean science themes by using the lessons and activities. In addition, parts of the educational resources were also included in public displays and hands-on activities at the Coastal Trends Weekend hosted by the Virginia Aquarium. This event drew over 2,700 people. Through workshops and public events, the scientific knowledge contained in the collaborative product is disseminated to a broad audience.



Teachers from 11 states and Bermuda attended professional development workshops focused on using the resources in the collaborative product.



Coastal Trends Weekend showcases parts of the collaborative product at the Virginia Aquarium, and 6<sup>th</sup>–12<sup>th</sup> students explore the product on the web.



## What benefits result from collaboration?

Interviews with scientist-educator fellowship teams reveal that participants received numerous benefits and personal yields from working collaboratively. The following direct quotations and

outcomes illustrate some of these benefits. How, and if, team members continue to be rewarded by these benefits will be monitored.



Scientist

- "Educators have helped open my eyes to communication methods for teaching complex ideas."
- "I have learned the challenges involved in distilling science information into a coherent package that can be used in a classroom."
- Team scientists reported that the collaborative products were used to meet grant-required broader impacts.



Educator

- "I've gained tools which will make my classroom better (scientific methods, lab skills, knowledge)."
- Educators agreed that the educational materials they helped produce will assist them in teaching science topics.
- Educators agreed that they gained useful field experience that they will draw on to teach ocean sciences.



Graduate student

- "I developed skills to communicate environmental processes and analyses in a more effective fashion."
- "I have benefited by learning about the use of the Adobe® programs, PowerPoint® tips, and the principles of science communication."



Undergraduate student

- "I learned how to boost my technical skills by analyzing data and models."
- "I have a better perspective about the processes in the lab, and I can take that back to my work at school and my future endeavors as a graduate student."
- Two students presented work they did with the team at ASLO's Aquatic Sciences meeting in 2009.