



Creating an Alliance of Scientists and Educators in Virginia

Project Overview

This project addressed two barriers to the advancement of public understanding of science. First, there is a need for more K-12 teaching resources and professional development designed to help teachers demonstrate scientific research practices and teach critical thinking skills. Second, while the best source of authentic, current, and topical research is scientists themselves, research scientists are not often trained to communicate their science to a broad audience. This project sought to address these challenges by the following:

- Enhancing K-12 science curricula by providing teachers with resources that offer authentic examples of the research process and how science is applied to solve problems.
- Enhancing graduate students' science communication skills by providing formal training and an opportunity to translate their research into activities for secondary classrooms.

Project Benefits

The Virginia Scientists and Educators Alliance project successfully supported the transfer of graduate student science to K-12 educators in Virginia, bolstering graduate students' communication skills and the educational resources available to teachers.

- Graduate students cited improved outreach and communication skills and lesson plan development as benefits of their involvement in the project, and believed the lesson plans would be useful to them in future endeavors.
- Ninety-eight percent of educators found the alliance's Lesson Plan Expo, held in April 2017, to be a valuable experience, noting effective communication by graduate students and the usefulness of having access to lesson plans developed directly from current scientific research. Seventy-five percent of educators said they would use four or more lesson plans in their classrooms.
- Project staff, students, and teachers have shared Virginia Scientists and Educators Alliance lesson plans in a variety of other ways, including at professional conferences, teacher training workshops, and community outreach programs. This has allowed the program to reach a much wider audience than the initial 55 teachers who attended the Lesson Plan Expo—an unanticipated benefit of the project.

Project Location

Chesapeake Bay National Estuarine Research Reserve in Virginia

Project Duration

September 2015 to August 2017

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Products

Fifteen environmental and marine science lesson plans for K-12 students, created by the Virginia Scientists and Educators Alliance, were published [online](#) and are publicly available for educators

Project Partners

- Chesapeake Bay National Estuarine Research Reserve in Virginia
- Virginia Institute of Marine Science, Marine Advisory Services
- Virginia Sea Grant

Project Approach

Educators at the Chesapeake Bay National Estuarine Research Reserve in Virginia and the Virginia Institute for Marine Science Marine Advisory Program collaborated to create and pilot the Virginia Scientists and Educators Alliance. Modeled after a similar network in North Carolina, the alliance connected educators and graduate student researchers through a variety of opportunities.

- Graduate Student Training – The project team recruited 14 students from Virginia Sea Grant-affiliated universities who were interested in climate change, water quality, and other topics relevant to coastal systems. Local K-12 teachers assisted project educators in training the students in lesson plan development, teaching skills, and communication during a one-day workshop.
- Lesson Plan Development – With guidance from the project team, graduate students developed inquiry-based lesson plans related to their research interests. Fourteen mentor teachers from local schools reviewed, pilot tested, and offered feedback on the lesson plans.
- Sharing of New Resources – Graduate students discussed and demonstrated their lesson plans with 55 Virginia educators at a Lesson Plan Expo held in April 2017. The lesson plans were made available to participating teachers and published online for dissemination to other teacher networks.

What's Next

The lesson plan website is formatted to accommodate the development of additional future lesson plans and will be a reference for teachers to look up new science activities for their classrooms in years to come. Participating graduate students have also shared the Virginia Scientists and Educators Alliance program with their networks, increasing the interest and potential for the program to grow over time.

About the Science Collaborative

The National Estuarine Research Reserve System's Science Collaborative supports collaborative research that addresses coastal management problems important to the reserves. The Science Collaborative is managed by the University of Michigan's Water Center through a cooperative agreement with the National Oceanic and Atmospheric Administration (NOAA). Funding for the research reserves and this program comes from NOAA. Learn more at coast.noaa.gov/nerrs or graham.umich.edu/water/nerrs.