SUSTAINABLE CORN.ORG
CROPS, CLIMATE, CULTURE AND CHANGE

THE OHIO STATE UNIVERSITY

Science Teacher Education

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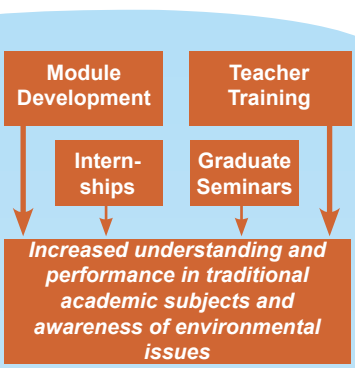
Our hypothesis: Place-based educational opportunities that incorporate inquiry and interactive (constructivist) learning strategies are effective for increasing student understanding and performance in traditional academic subjects (e.g., STEM) as well as fostering awareness of environmental issues.



Photographs shown, from top to bottom, are: Location of the Ohio State Stone Lab class, July 2012; Jamie Benning, Principal Investigator, uses a web-based exercise with high school students at the Iowa State University (ISU) Climate Camp; Jose Pantoja (left) and Scott Lee (right), graduate students, demonstrate the water infiltrometer during the ISU Climate Camp.

In order to each our goals

- Grade Band 9-12 Educational "Climate Discovery" Modules are being developed by the project targeting grades 9-12 high school students with the goal of increasing their content knowledge and understanding.
- Teacher training classes are being held to increase teacher content knowledge and awareness of environmental issues.
- Graduate students are being offered opportunities to increase their awareness and breadth of knowledge of environmental issues by participating in seminars developed by the project, exchanging ideas, and working with the team.
- Undergraduate students and high school students are increasing their awareness and breadth of knowledge of environmental issues and awareness of careers in the field by participating in research internships and/or climate camps.

Synopsis of the Education Team projects

At Iowa State University, Wade Miller led an asynchronous, distance education seminar on the science of climate change for project-associated graduate students. The seminar was developed to increase awareness of climate change, possible causes, and strategies to cope with these changes. Matt Shultz was the Camp Coordinator for the first Climate Camp at Iowa State University, June 9-17, 2012. Eighteen high school and college students from Iowa and Missouri participated in the camp. The camp's purpose was to educate students about issues related to climate and agriculture, using hands-on activities.

The Ohio State University developed modules for use with 9-12th grade science classes; developed a class, "Climate, Agriculture, and Sustainability in the Corn Belt: Focus on the Lake Erie Watershed," for undergraduate and graduate students and teachers; and mentored summer interns. Four teachers worked on developing lessons, activities, and companion information for modules on phenology and food. Eighteen high school and college-age interns are doing grant-supported independent research. A class for teachers, undergraduate students, and graduate students, July 29-August 4, 2012, focused on corn production in Ohio and the effect on Lake Erie and other Ohio waters.

In South Dakota, Dennis Todey and Laura Edwards provided several teacher education opportunities including two water classes, a teacher education session and a state science teacher session. Currently one teacher is working with the team, and several more have expressed interest as a result of recruitment efforts and a partnership with the South Dakota Discovery Center. The first two climate education modules are in development, one on our changing climate and crops to be grown in South Dakota. The second module, which was used at the climate camp, focuses on measuring surface conditions and relating those to climate.

For more information, contact:

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USDA United States Department of Agriculture National Institute of Food and Agriculture

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