Objective 6 Education Team Outcomes for Year 5

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Introduction

The USDA AFRI grant "Climate change, mitigation, and adaptation in corn based cropping systems" involves more than 100 researchers focused on measuring GHG and carbon sequestration across the corn belt as well as building solutions that are resilient in times of drought, reducing soil and nutrient losses under saturated soil conditions, reducing farm field nitrogen losses, retaining carbon in the soil, and ensuring crop and soil productivity. The education component of the grant includes a goal to increase the climate change and agriculture knowledge of Grade 6-12 science and agriculture teachers. The grant also aims to engage CSCAP graduate students through increased knowledge of climate change, working across disciplines to solve problems in a systems analysis approach within the Corn Cap (CSCAP) project, and participate in activities with national and international organizations (e.g., AAAS, NCSE).

The Ohio State University, Stone Lab Course Climate, Agriculture, and Sustainability in the Corn Belt.

This week-long course, held at Stone Lab on Lake Erie, examines the linkages between climate, agriculture, and aquatic ecosystems. Seven undergraduate and graduate students participated in July 2015.

Learning from Farmers

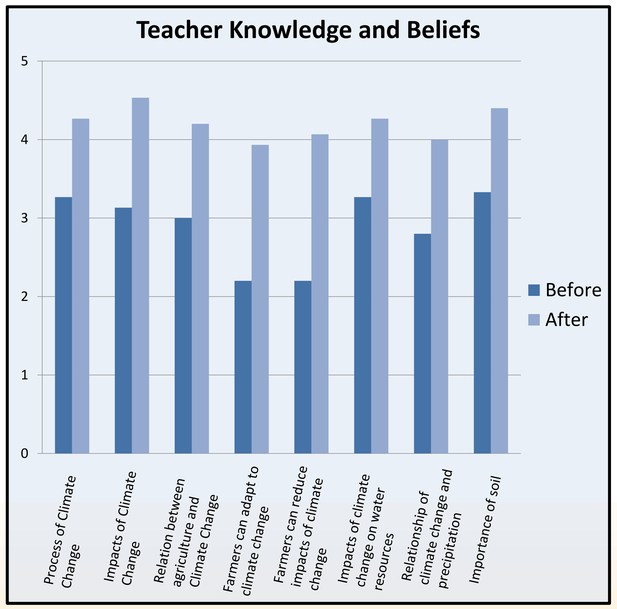
In stream sampling for HHEI measurements.

Invertebrate identification for HHEI measurements.

Measuring the Lake Erie alga bloom using a settchi.

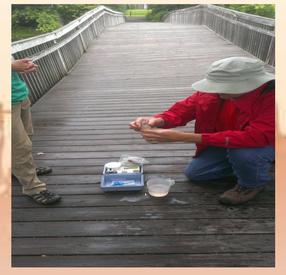
Agricultural Educators Climate Camps: South Dakota State University & Lincoln University

In an effort to train future scientists and 6th to 12th grade teachers, the CSCAP's Education Team conducted two separate climate and agriculture-orientated camps in June 2015, hosted through Lincoln University and South Dakota State University. Nineteen agriculture and science teachers attended the camps. They learned about the methods, purposes, and initial findings of the diverse studies, which are a part of CSCAP. Activities included classroom presentations, field and laboratory demonstrations, and hands-on experiences.



Number of Responses = 15. 1 - Not at all. 3 - Somewhat. 5 - Great Deal

Touring a large scale composting plant Bluebird Composting.



Test for dissolved oxygen in oxbow lake.

Webinars Series and Evaluation

The webinar series has been held the past three years with the goal of strengthening the ability of CSCAP graduate students to become transdisciplinary scientists. Speakers discussed their work and emerging needs within their specific fields. Students from the fields of sociology, statistics, agriculture, crop production, entomology, hydrology, soil science, climatology, plant pathology, and outreach and engagement participated in the one-hour webinars. Evaluations indicated a high level of satisfaction with the series. Participants reported learning about agriculture and climate change, different disciplines, transdisciplinary cooperation, career options, and new ways of viewing their work. In the Spring of 2015, a seven-week webinar series focused on professional development skills and knowledge for emerging scientists.

Evaluation of Fall Climate Change Webinar

Participants planned to use what they had learned in the course to:

- Better integrate climate change into research.
- Talk with others about climate change.
- Relate climate change to research and academic courses
- More vigilant in watching climate change news and debates.

Group of teachers touring FORCK Farms.

Teachers comparing different climate variables.

Career Development

Graduate students from the project in conjunction with project leadership and Dr. Todey are planning a two-day career development conference in Washington DC in October 2015. Students will showcase their research for various USDA and other partner agencies. They will also have opportunities to meet, network and learn about career opportunities in various fields and to interact with congressional staff.

NCSE CAMEL – Corn CAP (CSCAP) Partnership

The partnership between the National Council for Science and the Environment (NCSE), CAMEL, and CSCAP has included the following activities and outcomes related to climate education and awareness:

1. Education of CSCAP graduate students about climate science and the relationships between agriculture and climate change. In fall 2014, 12 graduate students participated in an abbreviated version of the introductory online course Climate Change: Causes, Consequences, and Solutions developed by Dr. Arnold Bloom, University of California Davis, at www.climatechangecourse.org

2. Presentation of a poster on CSCAP work at the NCSE conference of energy and environment in Washington, DC in January 2015.

3. Collaboration to develop an Agriculture and Climate Change Resource Collection that will be integrated into CAMEL and linked to CSCAP web resources. The collection will include high quality content and curricular resources based on CSCAP research and related content developed by others. This will include existing resources such as the Speed Science units and associated videos. See http://www.camelclimatechange.org/resources/view/226122/?topic=65976 and http://www.camelclimatechange.org/resources/view/225634/?topic=66135 for examples.

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