

Year Two Progress Report: 7/1/17 – 6/30/18

“Building Youth Conservation Leadership Capacity through Project-Based Learning”

Leopold Center for Sustainable Agriculture Special Project

Prepared by Melissa Miller, Iowa Water Center Associate Director (millerms@iastate.edu)



The WATERSHED PROJECT *Iowa*

Introduction. “Building Youth Conservation Leadership Capacity through Project-Based Learning” is a three year pilot program that will create a framework that will provide engaging and authentic hands on learning experiences with the flexibility necessary for integration into the variety of high school classrooms and communities across the State of Iowa. Using a multidisciplinary project based approach, students would conduct research, personal interviews, field studies, analyze and interpret data, and ultimately communicate their findings to the public and industry professionals through multimedia presentations.

The program seeks to address the following needs:

1. Many students in our classrooms are disconnected from the natural world.
2. Many of our traditional classroom practices are disconnected from the way we learn.
3. Many Iowans are disconnected from the human impact upon our watersheds.

By addressing these needs, the program hopes to inspire youth and the community to play more active roles in civic engagement, particularly related to environmental sustainability.

The pilot project features three distinct phases:

1. Development of a framework that transfers the basic processes and experiences of The Bluestem Institute faculty to an instructional format that can be adopted by any teacher in the state.
2. Instruction and continuing education in project based learning for the teacher who will develop and implement the program, including attendance at an intensive seminar at the Buck Institute for Education in Napa, California specifically for project-based learning.
3. Implementation of an academic year long project with a group of high school students as described above.

Year Two Progress:

1. Work with Davenport North for pilot/pilot implementation for students/student presentation at Iowa Water Conference: Davenport North High teacher Laura McCreery and Davenport Public Works employee Robbin Dunn attended PBL World 101 in Napa, California in June of 2017, with the City of Davenport contributing \$1,150 in match for Dunn’s attendance. In August of 2017, McCreery began the first of three, 9-week classes (an environmental science course that earned students dual credits with the high school and Scott Community College) to implement the framework. This course concluded in October 2017, with students pitching projects to

Davenport Public Works, who selected projects for funding and implementation. These projects included: constructing litter stations at local elementary schools (a partnership with Hy-Vee, Signs Now, and the North High School art department) and fundraising for a rain garden at Nahant Marsh (eventually turned into purchasing plants for nutrient-removal floating islands). This class also took a local elected official on a tour of a farm to learn about cover crops. The next class (different students, same course) occurred in the third term of the school year. This class planned a Watershed Expo at the RiverCenter in downtown Davenport in March of 2018. Teams of students were responsible for researching a topic relevant to the Mississippi River watershed, like Gulf of Mexico hypoxia, and designing an interactive booth. This class also invited community partners like the Rock Island US Army Corps of Engineers, Iowa Water Center, Iowa Soybean Association, and more to exhibit at the event. Local elementary schools created art for an exhibit during the expo, and all major local media outlets covered the event (the local NBC affiliate broadcasted the weather live from the classroom while the students were preparing their exhibits). Around 300 people attended the event. Also in March of 2018, McCreery and several of her students presented in a panel during the Iowa Water Conference in Ames. The fourth term course worked to rehabilitate the rain gardens in the front of the school. This included securing a significant in-kind donation of manual brush clearing from the City of Davenport, and coordinating a group of volunteers from the student body to pull weeds, reseed, and maintain the rain garden. This group of students also contacted a local elementary school to bring a class onsite for a field day involving the rain garden and other outdoor, water-related activities.

2. Recruitment and identification of third pilot school/announcement of third pilot school/work with third school for pilot: Storm Lake High School in the North Raccoon River watershed was selected as the third pilot school. Angela Mesenbrink worked through the school board to create a course called "Advanced Ecology" that would meet the entire 2018-2019 academic year. Enough students registered to necessitate two sections of this course. In June 2018, project staff visited Mesenbrink in her classroom to work through her proposed course outline. Following this meeting, Mesenbrink attended PBL World 101.
3. Evaluation of and refinements to framework: Project staff made significant updates to the website that was launched in Project Year One (www.thewatershedprojectiowa.org). The website now hosts the framework in its entirety, organized by the four steps of the Project Cycle: Define, Plan, Do, and Review. The framework includes exemplars, templates, toolkits, models and other resources for teachers implementing the project to use and to contribute their own. There is an option to support the project by signing up as a partner organization or to donate to the project. IWC project staff conducted three evaluative interviews with McCreery during the project year and will do the same in year three with Mesenbrink.
4. Publicity/marketing/outreach: The updated website serves as a constant source for publicity and marketing. Additionally, tweets from the Iowa Water Center twitter account direct to the website. In June 2018, Miller presented the program at the national University Council on Water Resources annual conference in Pittsburgh, PA. Additionally, Miller has met numerous times one on one with organizations and individuals with mutual interest in
5. Transitional plan development for program: In April 2018, Iowa Water Center and Iowa Lakeside Laboratory jointly submitted a grant to the EPA Environmental Education grant program that would create a local workshop modeled after PBL World. This grant would also have enabled the

pilot program to expand to ten schools per year. Unfortunately, this proposal was unsuccessful. Lakeside Laboratory and Iowa Stormwater Education Partnership are still in discussion to pursue the methodology in the proposal to continue the program past year three.