Discovering Science on the Range in the Field of Energy (DSRFE)

By Joel Haskard • August 2013

Director and Instructor of the Center for Renewable Energy Education & Demonstration, Roger Aiken recently took some time to sit down with CERTs own Joel Haskard to talk about the Discovering Science on the Range in the Field of Energy (DSRFE) project, one of the statewide 2012-13 seed grant recipients. (The DSRFE group poses at the Duluth Seaway Port Authority in photo on right)

Joel Haskard: Tell us a bit about your project.

Roger Aiken: The overarching goal of our work with DSRFE is to provide science, mathematics and technical education teachers at the middle school and high school levels with STEM-rich energy content materials to enable them to become familiar with and direct their students towards careers in the energy efficiency and renewable energy industry. It is all about jobs. Preparing today’s kids with the skills needed to ultimately fill the openings for new hires in the industry. CREED is the only organization in Minnesota doing this critical energy education work at the grade 6-12 level to get kids from K-12 to college to the workforce “pipeline.”

Joel: What part of your project was particularly unique or successful?

Roger: First, the live-in situation at the Laurentian Environmental Center enabled teachers from different parts of the state rub shoulders with each other, get to know each other, share teaching ideas, and demonstrate to each other labs and teaching methods that they found successful in their individual schools. Second, feedback from the teachers themselves. Third, the site visits. These were the single most important aspect of our training according to teachers. These they said were where the “rubber hit the road” and what they had learned in lectures, discussions and presentations finally made sense in the real world. Many teachers resolved as a consequence to take their own students on similar site visits. (Note: site visits included a wind farm, solar panel manufacturing plant, combined heat and power plants and an on-farm anaerobic digester).

Joel: What challenges did you experience?

Roger: By far our biggest challenge was the area of fund raising. Also some difficulties were experienced in getting site visits and expert speakers lined up to fit our schedule; there was a great deal of juggling and moving items to accommodate the visits and people we wanted involved.

If you were going to help someone do a duplicate project, what would you suggest?

1) Don’t leave things until the last minute.
2) Look long and hard for a continuing funding.
3) Listen to and act on feedback from teachers.

Project Snapshot

**Location:** Statewide Minnesota

**Technology:** Energy Education

**Total Project Cost:** $47,500

**CERTs Funding:** $4,500
Joel: In what ways do you see this project engaging your community?

Roger: Our project impact communities in the following ways: We provide content materials to middle and high school teachers and they pass this on to their grade 6-12 students. Students take this information home to their parents and other members of their communities.

For example, one teacher initiated a project for his students to see how much electrical energy they could save. The kids took home kilowatt meters to record before and after changes their families made using their electrical appliances. The kids got into this in a big way to see if their families could achieve the greatest savings.

Another teacher designed the plans for her family’s new home. She made a cutout model of it that she used in her class to talk about energy savings available using conservative design practices. What we noticed about education is that the results are not always immediately apparent but they are ultimately life changing and long lasting.

Joel: What do you enjoy most with your work with CREED?

Roger: Teaching. This beats hands down all the other tasks like fund raising, teacher recruitment, scheduling, lecture writing, lab equipment collection, site visit arranging and assignment grading. Teaching is where it all comes together and you get feedback from the teachers.

Joel: Finally, how do you see the work that you do affecting renewable energy and energy efficiency across Minnesota?

Roger: It is key. Education is absolutely vital to the success of the EERE industry and its implementation. Our work is a key part of the K-12-College-Workforce education “pipeline.” It is at the middle and high school levels that most kids make their future career decisions and unless they have teachers enthusiastic about energy efficiency and renewable energy they will not even think about the field!

To learn more contact Roger Aiken at rogeraiken@creedproject.org or 651-644-8318.