Cornell Students Lead Environmental Science Research in Local High Schools

Rainer Asse, a Cornell graduate student in Natural Resources, spent part of last semester helping students in an urban Rochester high school teaching courtyard ecology projects. Joy Chen, a Cornell undergraduate, engaged Ithaca High School students in a 9-day case study on the issues surrounding deer management in residential neighborhoods. Andrew Barton, a graduate student in Oceanography, helped Cortland High School earth science students to develop their own microclimate-related research questions, then conduct experiments and present their results in a poster session attended by Cornell scientists, high school administrators, and CEIRP staff.

Rainer, Joy, and Andrew carried out these activities as teaching fellows in Cornell’s Environmental Inquiry Research Partnership (CEIRP), a National Science Foundation (NSF) sponsored program designed to connect university-level scientists with primary and secondary schools. Cornell is one of the first thirty-one colleges and universities nationwide to receive funding through this new NSF initiative called Graduate Teaching Fellows in K-12 Education. Led by Marianne Krasny, CEIRP provides scholarships to Cornell graduate and undergraduate students who are working on degrees in science or engineering and are interested in educational outreach. Over the 3-year life of the grant, CEIRP will provide fellowships for twenty-seven graduate and fifteen undergraduate students. Typically, the fellows spend approximately ten hours per week in science classrooms. They bring their content expertise and research experience to the classroom and work together with the teacher to facilitate students developing their own research projects. CEIRP is part of Environmental Inquiry (EI), a CfE and Department of Natural Resources program dedicated to enabling students to conduct authentic environmental science research.

High school and middle school teachers who worked with CEIRP fellows during the 2000-01 school year appreciated the scientific expertise that fellows brought to their classrooms. One teacher reported that his participation in CEIRP helped him to transform his ecology course from a policy orientation to a focus on scientific inquiry. Another said that she found it empowering to see that experiments do not have to go according to plan and that unexpected results can lead to wonderful learning opportunities. Several teachers mentioned that CEIRP fellows provided positive role models to their students, especially those students who are wrestling with the question of whether they want to go to college. Participating high school students reported that they had “really learned” how to conduct experiments and would remember this experience because they had done the work themselves. They described how they had learned how science really works by coming up with their own hypotheses, determining how to go about answering their questions, working through mishaps with equipment, and collecting and analyzing their data.

Fifteen CEIRP fellows are on board for the current school year, including ten graduates and five undergraduates from several departments including Natural Resources, Crop and Soil Sciences, and Civil and Environmental Engineering.

— Nancy Trautmann, Environmental Inquiry

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