Plants don’t function in a vacuum. And neither do teachers.

With those two facts in mind, Alaska EPSCoR brought secondary and primary school teachers from throughout the state to Fairbanks this summer for a new class in biogeography – basically, the relation of plants to their environment – with a special emphasis on the symbiotic nitrogen fixers and mycorrhizae which make plant roots their home. The idea was to train the teachers in the subject so they could in turn create related lesson plans for their classes.

“We thought that maybe the best way to get at this was to educate teachers more about what is happening with plants,” said UAF Associate Professor of Ecology Christa Mulder, lead instructor on the project. “It’s not something that is usually covered very well in most introductory biology courses, or for that matter in schools in general, and we thought the best way to do that would be for people to actually come on campus and look at stuff and get excited about it.”

The four-credit University of Alaska course, entitled “Alaska Biogeography: Plants and their Symbionts,” was held in June and July 2009 and consisted of two weeks of distance education followed by two weeks of hands-on learning on and around the Fairbanks campus. The six teachers who took the class came literally from across the state: one each from King Cove, Juneau, Wasilla, Wainwright, Point Hope, and White Mountain. With the exception of a $100 fee each, their participation in the course was entirely funded by Alaska EPSCoR. They received continuing education credits and, more importantly, the chance to expose their students to science rooted in their local environments.

“We have pretty limited resources, so this is a chance to get hands-on science to engage the students,” said participant Dave Green, who teaches middle school in Point Hope. “Most of the science they get, it doesn’t connect to them at all.”

The teachers received instruction in Fairbanks from a number of biology faculty members, including Mulder, associate professors Lee Taylor and Matt Olson and Professor Roger Ruess. The teachers learned how to locate and identify n-fixers and mycorrhizae on different Alaskan plants through field sampling and lab examination and also studied related plant topics. After a week of on-site study, the teachers were tasked with translating their new knowledge into lesson plans for their home districts.

One project that emerged from the class was a common garden experiment: teachers from each of the six schools sent local low-bush cranberry clippings to all of the other schools for cultivation. Students at the schools will keep detailed information on their own plants and share them with the other schools, and lessons will grow out of the differences between the plant sets. “Those are questions that make people think about why things happen,” Mulder noted. “Which is part of the idea behind science, of course.”

EPSCoR is providing continuing funding for the project, meaning faculty and staff members will be available for site visits. “We have a budget written that would allow someone to travel out to these sites, just for whatever help or support they need,” said Alina Cushing, an EPSCoR-funded science outreach professional who helped run the course. “Whatever is most useful to them.” There are also plans to offer the class again in June 2010.

Teachers gave the course high marks. “Whatever we do (here at UAF), I’ll try to be able to reproduce it with my students,” said Jack Adams, who teaches high school science in White Mountain. “If my students could, they would have lab-type activities every day of the year.”