

UO gives area schools the gift of science

As part of the K-12 Outreach Science Program, graduate student Mary Smeller teaches science to fourth and fifth-graders every week

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In the small, quiet town of Lowell, 40 fourth-graders and fifth-graders stream into room 15 of Lundy Elementary School chatting energetically over the sound of chairs dragging across the floor. It is a scene of chaos.

Amid the commotion, Mary Smeller seems completely removed from the confusion. She holds up her hand and starts counting down: "Five, four, three, two, one..." By the time she reaches "three" the students are holding up their hands and counting with her. By the time she reaches "one" the class sits attentively. At 1 p.m. Wednesday, the room is silent.

Even though she is not a normal teacher, Smeller knows how to get her students' attention. A University chemistry graduate student, Smeller is working her second year in the University's K-12 Science Outreach Program, which sends University graduate students out to elementary and middle schools across Oregon to teach science lessons and demonstrations to young students. The graduate fellows also bring science kits with materials to aid the lesson, which then stay at the school.

The program comes at a time when science is becoming less of a focus while teachers scramble to meet the reading-heavy requirements of the No Child Left Behind Act.

"I've made it my mission to improve Oregon science instruction statewide," said University physics professor Dean Livelybrooks, who helped organize the program in 2002. "It's been very positive so far, and we're still trying to build this thing."

Smeller is one of nine University fellows teaching in Oregon schools this term for the program, ranging in location from the Bend-area to schools just outside of Eugene. Schools within city limits fall under the jurisdiction of another similar state program. Some visit their schools once per week, as Smeller does, while others teach every day for two weeks once during the term.

Realizing the potential consequences of telling the name "Smeller" to a group of imaginative elementary school children, she hasn't revealed her last name to any of her four classes. Instead, she is known as "Dr. Mary" to most of her students.

For Smeller, who hopes to later become a college professor, the program offers a great chance to gain experience teaching in a setting that is challenging right from the start, she said.

"I can't even describe how many things I've learned in these classes," Smeller said. "I figure that if I can explain something to a student who's nine, I can explain it to a college student no problem."

Even with less than two years in the program, Smeller has made large gains in the area of teaching and communicating with her students, she said.

"When I first started teaching first graders, I was over time every time," she said. "At the beginning of the term it was awful."

She said a key technique to reaching her students is to show them a concept, not tell them. On Wednesday, Smeller used her science kit with batteries, magnets and coils to illustrate concepts of magnetism and energy to her fourth-graders and fifth-graders. The equipment is also provided as a donation to the school.

"What we've found is that teachers often use the science kits even after we've left the building," Livelybrooks said. "The most important thing to me as a working scientist is that they teach science as a process of understanding. I think they're state of the art."

For the teachers and the schools, the program offers an expert perspective on science their students might not otherwise get .

"The kids love (Mary)," said Katy Mallatt, whose fifth-grade class is taught by Smeller every Wednesday. "They look forward to doing science with her. They think I'm boring."

Mallatt said the program also helps emphasize science to Lundy Elementary as a whole, which is in its first year with a University graduate student. Schools are given a three-year period with a graduate fellow under the program. Eventually, the actual teachers take over the program.

"When I started it, I thought it would be interesting, but I didn't know how much it would benefit us," Mallatt said. "What I love is that it takes it into real-world applications."

Ginger Shultz, a chemistry graduate student who teaches at Danebo Elementary School in the Bethel School District once each term this year, said she didn't

realize how little her curriculum is being taught in some schools before joining the program.

"It's helped me to recognize the need for science and scientific inquiry in elementary schools. I think it's needed," she said. "Some classrooms are getting no science at all."

Smeller will continue visiting Lundy Elementary once per week for the rest of the school year, after which she will continue to pursue a career in teaching science, she said.

For students, Smeller's lessons are a rare chance to get hands-on science experience with an expert.

"She teaches us a lot," said Seabastion Miller, 10. "The only bummer is that we don't get to blow stuff up."

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[Photos from article below. Larger versions not available in this PDF.]

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