

■ James Farrar, 2005

For James Farrar, a professor of chemistry, it's all about clarity.

"When I can explain something clearly to a student, I understand it better," he says. "As a teacher, I'm also a learner."

Teaching freshman chemistry—a large lecture course, with only a small fraction of students who go on to become chemistry majors—has given Farrar much occasion to think about how to make an often difficult subject clear, comprehensible, and even fun.

He models himself on favorite teachers he himself had. "My teaching style comes from taking things I admired in them. They were very good at connecting words and equations. They wrote good explanations. And they had a sense of humor."

Farrar tries to put a "more human face" on science by sharing jokes and stories about eminent chemists, figures who'd otherwise just be names in textbooks for the students.

"The freshmen come in with boundless enthusiasm," he says. "They're interested in everything."

And whether they become majors or not, "the way of thinking about science, and logical thinking about science, will be part of their lives."

To help students master that thinking, he uses peer-led workshops—crediting the late chemistry professor Jack Kampmeier with inspiring him to bring that method into play. He relies on them, too, in his physical chemistry and other upper-division courses.

"I learned I could improve my teaching through workshops, and for that I'm grateful to the culture of this department," he says. "Workshops are an arena where people have to make their thinking visible to others. And that's where the real learning gets done—explaining and defending your thinking to other people."

Farrar's father was a chemist, "and he'd say I became one despite his advice." But he finds the challenge of science irresistible.

"I like thinking about atoms and molecules and how they interact with each other," he says simply. In his research, he uses molecular beam techniques to investigate where energy goes in chemical reactions.

But while he's proud of his research, he finds more fulfillment "when I think about the people I've worked with over the years."

"I take satisfaction in watching people succeed. I think that's the bottom line."

