Chemistry has been a big part of MaryLee Southard's life since an junior high experiment opened her eyes to the discipline’s importance. Southard is a professor of chemical and petroleum engineering at Kansas University.
The recipe card listed the ingredients, but it wasn’t enough for Marylee Southard.

When the Kansas University professor of chemical and petroleum engineering was growing up, she began experimenting with simple elements.

“I couldn’t leave a chocolate chip recipe alone,” she said. “I was always tinkering with it.”

By the time she reached junior high, she had taken her science projects into the lab, and in ninth grade hit upon the experiment that shaped her career.

“We were working in a lab, creating fragrances,” she said. “I created a rotten egg smell and my neighbor created a banana smell. It hit me that chemicals are not just things on a shelf we mix together when there’s nothing better to do; they’re there all through our lives. I made the connection that chemistry was going to be a part of my life.”

What she didn’t know then was that teaching would also play a major role in her future.

Never-ending story

“When I graduated with an engineering degree, I went to work,” Southard said. “I was glad to be working and I vowed to never, never, never get a Ph.D.”

A few years later when she and her husband, Jeffrey, decided to start a family she asked the company she was working for if she could work half time. The answer was “no.”

“I was devastated for about 24 hours,” she said.

“Until I got a call from a professor who asked if I wanted to teach a class. I had most of my master’s thought about it for 10 seconds and said ‘yes.’”

The class was Basic Thermodynamics, and once Southard took the helm she knew she had made the right decision.

“All of a sudden my never, ever ever started fading away,” she said. “After a year of teaching, I said no to it so I could get the credentials to do it permanently.”

She earned her master’s degree in 1983 and her Ph.D. in 1989, both from KU.

Connections

After returning to the head of the class, she took the role of observer as well as educator. The result was an innovative program that pairs university students with elementary school science programs.

“This would probably never have happened if I hadn’t had children of my own,” Southard said. “I saw them enjoy programs at the Natural History Museum. Science is fun when you can do it, not read or listen to it.

“My students are doing science but they don’t have a connection outside of the university; and science teachers are sometimes afraid, so there were three needy populations, like three sides of a triangle not together. I just put the triangle together, that’s all.”

The program started with one university student in one elementary classroom, Southard said.

“It was a resounding success,” she said. “That student said the experience changed his life. When you have a pilot test like that, you can’t just stop.”

The program has grown and includes 15 students each semester who spend time in a local classroom every week.

Leawood senior Zach Schmidt taught science and chemistry to a group of fourth-graders last semester.

“We talked about simple machines, pulleys, levers and force,” he said. “And part of the curriculum was water. That’s part of my curriculum and I really liked that.”

But it wasn’t just Schmidt’s students who went away from the experience with more knowledge.

“I learned to think faster on my feet and to react quicker to questions,” he said. “And patience. It was a really good group of kids.”

Schmidt, who will graduate with an engineering degree next spring, might one day take over as head of his own classroom.

“I’ve thought about teaching,” he said. “And after this I might pursue it more.”

Honor roll

It’s reactions like Schmidt’s that earned Southard the 1995 HOPE Award, given annually by the senior class. HOPE stands for Honor for the Outstanding Progressive Educator. Southard added it to her growing list of accolades, including the School of Engineering’s Miller Professional Development Award and the Ned N. Fleming Trust Award.

“There’s no greater shot in the arm than to be recognized by the people you work with and for,” Southard said. “Everyone should be recognized for teaching as I have.”

Southard was recently recognized again. She was one of 20 KU faculty members who received a $5,000 check last month from the W.T. Kemper Foundation. The awards were given based on excellence in teaching and advising.

“It truly was a surprise,” Southard said. “I’m very thankful.”

Not everyone was as astonished by her award. Carl Locke Jr., dean of the School of Engineering, has worked with Southard since coming to KU in 1986.

“She’s an outstanding faculty member,” Locke said. “It’s not a surprise at all.”

It’s Southard’s dedication to her students that sets her apart, Locke said.

“The attention she gives to her students and the concern she has for her students sets her apart,” he said. “She has that high energy level and a desire to do a good job.”

Locke said that Southard is surrounded by good company. When she received the HOPE Award, two of the other five finalists were from the School of Engineering.

“For an engineering professor to be chosen for the HOPE Award is a stunning accomplishment,” he said. “When our faculty receive an award, I get excited. I’m glad to see them get that recognition.”

Southard is on sabbatical for the 1996-97 school year, but isn’t spending her time altering more cookie recipes. Instead, she’s working on a patent for an atrazine corn pellet pesticide and plans to learn animal surgery for another project dealing with bone agents.

Next fall, she’ll be back in the classroom.

“I’ll be working with students,” she said. “And that’s what I like.”