Professors of the Year: They Put Students in Charge of Learning

By Paige Chapman

To spark their interest in geology, one professor traveled more than 300 miles with his undergraduates so they could gain fieldwork experience. Another professor got his students to do a puppet show based on a literary classic.

Those two academics, and two others, are being honored today as U.S. Professors of the Year for excellence in teaching by the Carnegie Foundation for the Advancement of Teaching, and the Council for Advancement and Support of Education.

"What matters to them is learning, not lectures; inspiring, not processing; exploring and not just explaining," said John Lippincott, president of the council.

Nominees were evaluated on their scholarly approach to teaching and learning, their involvement with students, their contributions to undergraduate education at their colleges and in their communities and profession; and their support from colleagues and current and former students. Each of this year's four honorees received a $5,000 prize.

The winners are:

Ping-Tung Chang
Professor of mathematics, Matanuska-Susitna College

At his small community college near Anchorage, in southern Alaska, about 75 percent of the 1,650 students take remedial math classes. Mr. Chang uses what he calls the "grow your own problem-solving approach," a method developed by the Hungarian mathematician George Pólya in the 1940s, to help stimulate their interest in the subject.

"If you let three different students solve the same problem, you see different ways they approach solving it," Mr. Chang says. "If I let the student do it their own way, they really think about what they're doing. By also letting students continue the debate for 20 minutes afterward, it helps them understand the ways they got to..."
the answer and learn from each other."

This emphasis on self-correction also translates into his attitude toward testing, which he does not use for grading. Instead he gives students the option of taking tests repeatedly if they don't pass the first time around. This, he says, gives them the chance to learn from their weaknesses and master the material before moving on to the next lesson.

Mr. Chang has provided math-instruction lessons to teachers at Alaskan high schools, as well as to professors in China during his sabbatical in 2009. A group of his former students have started a scholarship fund in his name, which awards at least $500 every year to an in-state student attending either Matanuska-Susitna or its parent institution, the University of Alaska at Anchorage.

John Zubizarreta
Professor of English, Columbia College (S.C.)

In one of his English classes, when his students read "A View of the Woods," a short story by Flannery O'Connor, they were appalled by a murder at the end. Mr. Zubizarreta devoted his next session to O'Connor's comedic writing style, but the students still couldn't see much humor in the story.

Three weeks later, the professor challenged his students to represent what they had learned in a creative way. When a group of them performed the same story as a puppet show, the rest of the class laughed.

"It was interesting that they laughed when the story was presented in a different medium," he says. "I wanted them to see the value of turning a short story into another medium, whether it was a puppet show or dance to music. That was one of those magical moments of teaching."

After seeing another presentation, a dance version of O'Connor's "The River," he encouraged two of the students who did it to present the work at the annual conference of the National Collegiate Honors Council.

Mr. Zubizarreta, director of faculty development and of the honors program at Columbia, says moments like those are what inspire him to teach at least one or two English classes each semester.

He calls this style of teaching "the reflective learning moment"—he wants students not only to think about class material, but also to monitor their own learning. For example, he requires them to keep in a portfolio all of their class assignments, whether a short quiz or
a draft of a lengthy essay. Each week the students are required to turn in a 300-word reflection about the work they are producing. Mr. Zubizarreta, who learned of the method in a professional-development class, has used it as a component of his courses for 10 years.

"A lot of time, the process of learning is as important as the final product," he says. "I'm trying to plot a course for learning. I want students to be able to examine how they've acquired the knowledge and see where they are strong and where they are weak, so they can take those lessons with them into the future."

*Teresa C. Balser
Associate professor of soil science, University of Wisconsin at Madison*

Ms. Balser won't tell you what qualities make soil a good habitat. Rather, she'll ask students to develop a list of their own.

"If you ask a question, students take more ownership in their learning," she says. "It's representative of the process of science. If you don't know the answer, you have to ask questions and be creative."

Framing her classes around questions is her go-to teaching style, she says. That includes bringing in guest lecturers, like environmentalists to windmill builders, when questions arise that she can't answer. She has been doing that for seven of her nine years at Madison.

"It's amazing what happens when you invite in others to come to the table," she says. "They bring a wide range of real-world experiences that extends far beyond the classroom. It's important to realize that it doesn't have to just be me standing in front of a class to create learning."

One of Ms. Balser's goals is to cultivate an interest in environmental issues within all her students, even those who aren't biology majors.

"They are the citizens who will be voting, and I would love for all of my students to have a better understanding of what science is and understand where it fits in society," she says. "If they can realize they actually enjoy learning even in a class about dirt, they will have a better handle on how to deal with the complexities and change that will come up in their lifetime. They won't just accept climate change at face value, but will ask why."
Professor of geology, Minnesota State University at Moorhead

Students in Mr. Colson's geology course don't learn about rock stratification in his classroom. They learn about it more than 300 miles away, at Theodore Roosevelt National Park, on the far side of North Dakota.

"The book of nature is always open," he says. "I want my students to work step by step to figure out scientific puzzles—and they have to observe how nature behaves in order to be successful."

Recalling his own research experiences in graduate school, Mr. Colson says he was inspired to incorporate "thought puzzles" in his classes. He includes field trips in 75 percent of his classes because they allow students to test the knowledge they've acquired in the classroom. For example, they can apply textbook lessons on examining sediments to see whether a glacial lake existed in what is now the national park.

When the class isn't on the road, students see how geysers work by using a syringe and water. When they observe what happens as they push the syringe, Mr. Colson says, they learn how pressure affects water temperature.

Mr. Colson goes beyond teaching basic scientific rules. He teaches how the rules can be applied on a practical level, he says. This is why he works alongside his students when they are in the field conducting scientific research. In fact, he has helped write reports and peer-reviewed journal articles with his students for the past 10 years.

"For me, graduate school was where the light bulb went on," he says. "But I don't want my students to have to wait. Solving puzzles is simply what real scientific thinking is all about."