It's impossible for Chris Sorensen to speak without demonstrating.

He reaches for a jar of silica and shakes (“if it wiggles like Santa’s belly, it’s jelly”), he throws erasers across the room to demonstrate the transfer of energy, and he leaps up to grab a yellowing “For Better or for Worse” comic strip from his office door.

Sorensen, Cortelyou-Rust university distinguished professor of physics and 2007 CASE/Carnegie U.S. Professor of the Year, reads from the strip: “The way I see it, a teacher’s got to be an entertainer, you gotta have expression. Be excited about your subject. If you sound bored, they’ll be bored. Move around the room, explain stuff clearly — imaginatively, with a sense of humor.”

This is his teaching philosophy.

In an effort to dispel the monotony in lecture halls across the country, Sorensen and other Kansas State University professors are working diligently to keep their students enthralled — a growing challenge thanks to high-speed Internet and smartphones.

“Doing is so important. I’d love to do so many things that are more doing-oriented than sitting- or listening-oriented,” Sorensen said. “But even if the poor kids are sitting and listening, I like to at least get out amongst them — like the cartoon says — you gotta walk around and get expressive.”

Embracing technology

Michael Wesch, associate professor of cultural anthropology, is leading a teaching revolution. In 2007, Wesch’s Introduction to Cultural Anthropology class put together a video called “Visions of Students Today,” challenging the way large, introductory courses are taught in the United States. More than 4 million people have viewed it on YouTube.

The findings were eye-opening but not surprising: classes are too big, students are anonymous and standard chalkboard-and-PowerPoint teaching is not engaging.

But this was four years ago, a time when most students didn’t have BlackBerrys, iPhones or Androids giving them instant access to the universe. In 2011, college students are more wired than ever with 63 percent of them owning Internet-capable handheld devices, according to a recent study by the UCLA Higher Education Institute.

Wesch, 2008 CASE/Carnegie U.S. Professor of the Year, envisions a world where students can harness the power of Internet, computer and smartphone technology to learn more efficiently. He was recently named the 2011-2012 Coffman Chair for Distinguished Teaching Scholars, where he’ll work with faculty to incorporate new media into their teaching.

Think of it this way, Wesch said. What if we had this device just 30 years ago? We would see it as much more than just a device for connecting to friends via phone, email or Facebook, he believes. It would instead be used as a base for entire curricula, to reign in the power of the world’s largest database of information — the World Wide Web — all right from the palm of our students’ hands.

“We’ve collectively built, as a humanity, the world’s greatest collaboration machine and put the power of collaboration through this machine into the hands of all of our students here at Kansas State University — not to mention, 2 billion other people — and we see it as a distraction device,” he said.

We should not do away with large lectures, Wesch said, but it’s time to re-examine teaching methods.

“We have great lecturers on this campus who can transform a student in a single hour, if not in 15 minutes,” he said. “But I do think that all of us, faculty and students, need to recognize that this environment asks us to take charge of our own learning.”

Teaching to learn

But distractions or not, Dean Zollman, university distinguished professor of physics, believes, simply, if the students aren’t engaged, they’re not going to learn.

“It doesn’t sink in very well if they’re not actively involved
in what they’re doing. If physics is just this thing that they do when they’re in Cardwell Hall, they haven’t learned very much,” Zollman said. “But if when they put on their seat belt in the car and understand the reason in terms of the laws of physics, then they are starting to learn something.”

To better serve their students, these professors welcome the opportunity to teach undergraduate courses — they learn to be better teachers by teaching.

Zollman, former physics department head and Kansas State University’s very first U.S. Professor of the Year in 1996, has been with the university since 1970. In his four decades here, he’s proud to report that even while growing more dedicated to research, Kansas State University’s physics faculty has maintained an equally strong commitment to its teaching program. Zollman got his Kansas State start teaching introductory physics courses, which he thought would be a walk in the park, but he ended up learning valuable lessons himself.

“Teaching students who have a limited background in science and math is the best way to understand anything,” Zollman said. “Students at that level ask really good, hard questions — and they don’t even know they’re doing it! I think that as you get socialized into the physics community you learn what questions can’t be answered. But they haven’t had that socialization so they’re going to ask questions that just bring you to a stop, despite being asked in a naïve way.”

The secret to teaching undergraduates is to let the students — no matter how many — know that you’re on their side, according to the three teachers. Undergraduate teaching is not something these three Professors of the Year take lightly. There will always be grants to apply for and endless research to generate, but the students are at the core of it all.

“How do you connect with people? How do you share with people? How do people get stuck and how do you get them unstuck? You face all the most important challenges of being human and then you share those challenges with a large diversity of people,” Wesch said. “You’re also seeing them struggle through new ways of overcoming those challenges. It’s an amazing thing to be a part of.”

Strength in numbers

Wesch believes that large undergraduate lectures offer a wealth of learning opportunities.

“This is a time where we have 200 to 400 people together, isn’t that exciting? Let’s see what kind of potential we can find when we bring all these people together with a common cause,” Wesch said.

In fact, he is putting together a new version of 2007’s “Vision of Students Today” and gathering video contributions from his students and people all over the Internet. Unsurprisingly, the results are similar — students feel confined with no room to explore, discouraged from speaking, and uninspired by traditional teaching methods. “I learn by living,” one student writes on her bathroom mirror.

Wesch wants to take these life experiences and have students interact with and educate each other. He is continually thrilled watching his students evolve, and in turn, he evolves with them.

How two physicists and one anthropologist — all CASE/Carnegie U.S. Professors of the Year — are changing the way we teach

By Rachel Skybetter, Communications and Marketing