



Photo by Theresa Darna-Douglas

Great faculty are critical for student success

Putting all the pieces together to create student success: engagement, curriculum and support, is a team effort—but the effort hinges on having great faculty, according to Shannon Ellis, vice president for Student Services. “The University has terrific faculty—teachers students rave about,” she says, ticking off just a few: David Fenimore (English), Scott Casper (history), Paul Starrs (geography), Phil Boardman (English). But the rising stars among new faculty are something to get excited about, too. Nevada Silver & Blue profiles just two of the dynamic new faculty on campus.

—Melanie Robbins '06M.A.

Leang’s mechatronics research makes nano-sized things move

Since arriving at the University of Nevada, Reno from Virginia Commonwealth University this past fall, mechanical engineering professor Kam Leang has enjoyed the opportunities for outdoor recreation that northern Nevada offers. Although he has a passion for the great expanses of the Sierra Nevada, he is equally passionate about his work in the microscopic world of nanotechnology.

Professor Leang’s specialty is modeling and designing control and mechatronic systems. The term “mechatronics” is used to describe a

cross-disciplinary combination of mechanical, electrical and computer engineering—in essence the use of electronics and computer programs to control mechanical devices.

Leang’s specialty is controlling the behavior of active materials—special materials that respond to electrical signals, for applications at the nano scale. “I like to try to figure out ways to move objects and tools at the nano scale—one billionth of a meter,” says Leang. “Like the cranes outside my window that are building the Davidson Mathematics and Science Center, I’m trying to develop the control ideas for moving positioners at the nano scale.”

Since the majority of machines we use today contain embedded electronic control systems, mechatronics specialists can be involved with the design and construction of a huge range of equipment: video recorders and washing machines, traffic control systems and anti-lock brakes, medical scanners and artificial organs, data storage devices, industrial robots and computer-controlled machine tools.

Leang is developing a new technical elective course in mechatronics to be taught for the first time on campus in spring 2009. The course will include upper division seniors and first-year graduate students. “Mechatronics is my favorite course to teach because that’s what first got me interested in a career in mechanical engineering as an undergraduate,” says

Kam Leang, assistant professor of mechanical engineering, with civil engineering juniors Katie Ezell and Timothy Cecere-Waters.

Leang, who currently has a National Science Foundation grant to develop a curriculum for the teaching of mechatronics in engineering departments across the country.

Leang credits grants from NSF throughout his career with inspiring his teaching. “I was very fortunate to be a NSF K-12 Teaching Fellow while a graduate student at the University of Washington. Funding was provided to train graduate students in science so that they could better communicate with the public and bring research and science into the local K-12 school systems. I was able to learn pedagogy and bring research into the classroom and I credit that program with greatly enhancing my teaching skills. It was very enlightening.”

Leang says he enjoys working with his young students because of their energy, enthusiasm and hunger for knowledge. “I chose to go into teaching to make an impact. My profession is great because it allows one to have a significant impact not only in teaching but also in research. I like seeing light bulbs turned on when students grasp something they didn’t know before.”

Some of Leang’s students have gone on to graduate school at MIT and Virginia Tech, as well as other prominent engineering universities. “I like knowing that what I teach students now may well have a big impact on their future,” he says.

Student Success

In his short time on campus, Leang has already impressed his colleagues. “Many students are talking with enthusiasm about what a great instructor Dr. Leang is and how happy they are to have the opportunity to be in his courses,” says Kwang Kim, chair of the Department of Mechanical Engineering. “I have no doubt that he will become a star researcher at the national and international levels.”

Walsh deconstructs candidates' arguments

Lynda Walsh flips on the classroom monitor to clips from *Comedy Central's The Daily Show* or *The Colbert Report* for the “Campaign Stop” segment of her English 102 class last fall. She’s teaching persuasion in digital media.

Why the comedy shows? “Most news outlets are corporately owned and they’re spinning one side or the other,” says the recently hired assistant professor of English. “Stephen Colbert and Jon Stewart are doing the closest thing to classical rhetorical analysis right now on television.” Who knew?

The shows—which Walsh acknowledges are clearly liberal—are nonetheless known for illuminating politicians’ contradictions over time. With the presidential candidates, they ran video clips of current pronouncements and compared them to previous statements, getting big laughs from the mostly youthful audience. “They’re doing good solid argument analysis, doing deconstruction of these arguments, and showing internal contradictions,” Walsh notes, adding that she was careful to choose material that avoided injecting inappropriate political biases into the classroom. “I balanced the Colbert/Stewart clips with Republican ads and clips from *Fox News*.”

Classical argumentation has gone somewhat out of style with the explosion of cyberspace, she says. “People put up a blog and, in effect,



Photo by Theresa Damm-Doughlas

Lynda Walsh, assistant professor of English, teaches the “Campaign Stop” segment of her English 102 class the day after the November presidential election.

say, ‘If you like me, here’s my blog, be my friend. If you don’t, get your own blog.’ It’s fundamentally different from how classical persuasion was designed to work in a democracy. We’ve almost become tribal factions.”

Both President-elect Barack Obama and Sen. John McCain, however, are classically trained rhetoricians, Walsh notes. “Obama tends to be very textbook. He’s upfront: ‘I

believe (in this controversial thing)...’ and then he’ll give you his explanation of why he believes in it so that you will agree with him.”

McCain, on the other hand, “does this ingenious thing where he starts with a warrant [the often unstated value at the heart of an argument] that he thinks everyone will hold and he works his way to the more controversial claims,” she

says. “For example, McCain might start with a statement such as, ‘My friends, we all agree that the United States should be a role model for the world.’ Then he says that if we’re going to be

a role model we need to have other countries look up to us, and we need to be consistent in how we treat foreign nationals and therefore we should close the camp at Guantanamo Bay. He sneaks you through the backdoor into the policy argument he wants to make.”

Classical argumentation includes appeals to logic, emotion and credibility, also known as appeals to logos, pathos and ethos, respectively. But 21st century digital media persuasion can be something quite different.

On Nov. 5, Walsh holds the final Campaign Stop. She opens a browser to a New York Times page containing an “election word slider”—readers from far and wide are inputting words that express their feelings. The slider is updated every half hour. These words appear in a “cloud” format, with the most often used words displaying larger than less frequently used words. The Democrats’ words are blue and the Republicans’ are red. Not surprisingly, the large blue words are entirely positive: “Happy,” “Elated,” “Joyful,” while the red words are downright sad: “Depressed,” “Miserable,” “Fearful.”

“A display of emotion... just stating how you feel can be persuasive,” Walsh tells the class.

—Ken Kempcke and
Melanie Robbins ’06M.A.

“Professor Walsh is very direct, firm. She definitely knows what she’s talking about. She backs it up with evidence. She’s very knowledgeable and very positive, full of energy.”

Freshman Nadia Shabrin, who is studying international affairs and cultural anthropology.