The Animal Science Department continues to be a very popular program, having received over 1,000 student applications for fall 2011. The quality of students applying is outstanding, and nearly all students have two things in common — they love animals and they love science — a great combination many of us share. I believe the animal science program continues to gain success because of our unique vision of Learn by Doing. We blur the lines between teaching theory and teaching the application of science and technology.

Recently University President Jeffrey D. Armstrong and his wife, Sharon, accepted an invitation to see some parts of Cal Poly that are best seen from horseback. We rode from the Equine Center through the Peterson Ranch, out Poly Canyon and through the new Poly Canyon Village area via the equestrian pathway. Along the way, the Armstrongs had a chance to visit with students and faculty members and see just how beautiful Cal Poly is in the spring. President Armstrong is a keen supporter of science and technology, and a great advocate for agriculture and food systems.

I’m very pleased to announce that Aaron Lazanoff, beef operations manager for the Animal Science Department, was recently selected as the Outstanding Staff member of the College of Agriculture, Food and Environmental Sciences. Congratulations to Aaron.

The J and G Lau Family Meat Processing Center is about 70 percent complete. The $6.5-million facility will be completed in early October 2011, and we have scheduled the grand opening celebration for Friday, Oct. 21, for donors of the Animal Science Department and supporters of the meat processing center project.

We will also host an open house and facility tours on Saturday, Oct. 22, from 1 to 4 p.m. for the Cal Poly community, alumni and friends. Please mark your calendar and plan to join us for tours of the new J and G Lau Family Meat Processing Center.

Finally, as state budgets continue to be reduced, and Cal Poly expects to see a state budget cut of $20 million for next academic year, it is important that we continue to focus on student success and ensure our Learn by Doing model is not compromised. Our success will depend on the active involvement of stakeholders like you, who are passionate about Cal Poly and the industries and organizations we serve. I encourage you to partner with us to help supplement our limited state resources to develop a new generation of leaders.
October 21st & 22nd
Donor Appreciation Celebration & Open House

The grand opening and donor appreciation celebration for the J and G Lau Family Meat Processing Center will be held Friday, Oct. 21, 2011, for donors of the Animal Science Department and supporters of the meat processing center. The events are scheduled for late morning, followed by lunch and tours of the new $6.5-million meat processing facility.

On Saturday, Oct. 22, the Animal Science Department will host the Cal Poly community, alumni and friends for the meat processing center open house and facility tours from 1 to 4 p.m. Please mark your calendar and plan to join us for a tour of this state-of-the-art meat facility.

The 14,500-square-foot facility will be completed in early October. The building will contain large animal and poultry harvest labs, fabrication and processing rooms, an innovation kitchen for ready-to-eat product development, a packaging development lab, and a small sales room. In addition, the building will include a large conference room, three staff offices, a U.S. Department of Agriculture inspector’s office, student lockers and dressing rooms, dry ingredient storage, and a laboratory to support food safety research.

For more information on the donor appreciation celebration and open house, please contact the Animal Science Department at (805) 756-2419.
College costs are rising steadily, and many students are taking longer to graduate, but for some Cal Poly pre-vet students that’s soon to change.

Thanks to a new pact among Cal Poly, the University of London’s Royal Veterinary College, and the School of Veterinary Medicine at the University of Glasgow, Scotland, Cal Poly pre-vet students can shave up to two years off a typical American veterinary degree program, save upwards of $90,000, and enjoy an extended stay in the United Kingdom.

Noland says the economy is helping to drive this innovation. “This streamlined program makes more sense, costs less, and is less redundant,” she says.

The education system in the United Kingdom differs from that of the United States. In the U.K., high school is more like junior college, and students graduate one or two years younger than Americans.

Vet schools in the U.K. differ as well. It takes five years to earn a degree, yet is equivalent to U.S. programs lasting seven or eight years (when combined with a bachelor’s degree). Their programs are equivalent to our doctor of veterinary medicine degree, explained Animal Science Professor Jaymie Noland.

A memorandum of understanding between the three universities would have students attend Cal Poly for three years, then attend a U.K. school for an additional four years. After their first year in the U.K., they would earn a Cal Poly bachelor’s degree. When they complete their fourth year in the U.K., they earn a degree in veterinary medicine.

Noland says the economy is helping driving this innovation. “This streamlined program makes more sense, costs less, and is less redundant,” she says.

Department Head Andy Thulin and Noland traveled to the U.K. last summer to tour the universities, both of which are accredited by the American Veterinary Medical Association, allowing graduates to practice almost anywhere in the world, including the United States.

Cal Poly students are up to it academically because of the heavy load of science-based and hands-on classes. “I looked at the universities’ curricula, class by class, objective by objective. There are no holes,” Noland said.
A Matter of Life

Two Alumni Turn Couples into Families

When Catherine Welch Mi (ASCI ’04) and David Hill (BIO B.S. ’74, M.S. ’76) were undergraduates, neither one thought they would one day be responsible for starting a life … or for having the potential to save one.

But they are doing just that.

Mi is a relative newcomer to the field of in vitro fertilization (IVF), yet since her graduation, she has worked in a variety of assisted reproductive technology (ART) clinics; earned an M.B.A. degree; started a consulting firm, Fertility Tomorrow; and just this year, returned to Cal Poly to teach the class that started it all: applied animal embryology.

The class teaches advanced techniques in animal embryo manipulation, including oocyte and embryo micromanipulation along with other current technologies in the field, such as embryo culture, IVF, and cryopreservation. “It’s a very intense 10 weeks,” Mi said.

When Mi took the class as an undergraduate, she “fell in love with it and spent hours and hours in the lab.” She tells her students they will be shocked at how much time they’ll want to spend in the lab. “It’s so interesting,” she said. “We can take an embryo from the time of fertilization and watch it grow. We can biopsy and test a growing embryo to determine if it has the potential to develop a certain disease. It’s just amazing.”

Mi founded Fertility Tomorrow to support women who want to postpone having children, whether for career purposes or for health reasons. “Fertility decreases greatly after age 35, so women can choose to have their eggs frozen and stored for later use,” Mi explained. She educates women and connects them with fertility clinics.

Hill, who went on to earn a Ph.D., has directed IVF programs for 25 years. He co-founded ART Reproductive Center in 2000 along with two physician partners who are fertility specialists. The clinic, surgical center and laboratory complex employs some 70 people in one of the largest ART clinics in the country.

About five years ago, Hill found a new interest when he and physician-researcher Nissim Benvenisty began working together at Cedars-Sinai Medical Center on research investigating the possibility of creating human stem cell lines from discarded human pre-embryos. Human embryonic stem cells, considered the gold standard for stem cell lines, can develop into every cell type of the body and might offer a renewable source of replacement cells to treat a variety of diseases and disabilities.

“During the IVF cycle, humans generate more pre-embryos than they can use,” Hill explained. Hill and Benvenisty’s research team succeeded in creating over 20 embryonic stem cell lines and have applied to the National Institutes of Health’s Embryonic Stem Cell Registry to make them available to researchers throughout the United States.

Hill witnessed another medical breakthrough that came about through advanced IVF techniques — techniques that allow researchers to determine if a pre-embryo is carrying a heritable disorder such as cystic fibrosis, one of over 900 heritable disorders identifiable at the pre-implantation stage of development.

Both Mi and Hill say Cal Poly helped spark interest in the growing field of embryology. Cal Poly is the only university in the nation to offer undergraduates such a hands-on course. “This course sets the students apart,” Hill said. “Graduates who have completed the course often are selected over those not having this hands-on training. It is not unusual for clinical embryologists to enjoy a healthy income, plus be able to practice anywhere in the world.”
On the final day of 2010, Animal Science Department faculty, staff and students joined family, friends and members of the community for Cal Poly’s annual branding day at Escuela Ranch. Located in the foothills of the Santa Lucia Range about four miles northwest of the Cal Poly campus, Escuela Ranch is the largest of Cal Poly’s ranches, with 1,820 acres. “It was a glorious day,” Department Head Andy Thulin recalls. “It was the first day the sun had come out in quite a while, and everyone had a great time.”

Beef Operations Manager Aaron Lazanoff explained that the main goal of the day is to give the calves their first set of vaccines. They also get their electronic identification. “We handle the cattle humanely and efficiently,” he says.

The event also gives Cal Poly students an opportunity to practice their horsemanship and stockmanship skills around cattle. Students from the Escuela Enterprise Project, as well as students from other areas of campus, are welcome. Local experienced ranchers were on hand that day to help the less experienced students.
“It was the first day the sun had come out in quite awhile, and everyone had a great time.”
Newcomer Amanda “Mandy” Myers is helping breathe new life into the Cal Poly Swine Center. Brought on board in January by Department Head Andy Thulin, Myers has her hands full teaching swine production and the Swine Enterprise class, managing the Swine Center, and, together with Thulin, developing a new strategic vision for the Swine Center.

The Swine Center is in transition, with plans to acquire a large enough herd that would allow farrowing to occur once a month. “We are in the process of getting pig flow down, determining how many sows we will breed at a time,” explained Myers. “Our goal is five groups of eight sows. Once we are up and running, that would give us monthly farrowing.”

Toward that end, Smithfield Foods recently donated 40 gilts and plans to donate 40 gilts every year. Smithfield Foods, a leading global food producer of pork products and gourmet foods, is also known as a company with a conscience and is committed to environmental leadership, community involvement and animal welfare, not to mention producing high-quality food.

Myers is preparing the gilts to breed, making sure they don’t grow too fast. “When they hit 300 lbs., we breed them. Ideally they farrow when they hit about 400 lbs.,” Myers said.

She is also establishing a computerized production records system to keep track of the pigs. How many were born, how many were treated — statistics that will create a good, effective database.

Every Friday Myers and her students head to the Swine Center to clean and organize it and to survey the supplies to build an inventory.

Students are also busy working on a procedure manual: “We are getting to the point where the student managers will have all the information they need at their fingertips,” Myers said. “We want to make the Swine Center the best it can be.”

"We are in the process of getting pig flow down, determining how many sows we will breed at a time," explained Myers. "Our goal is five groups of eight sows. Once we are up and running, that would give us monthly farrowing.”
Swine

Step outside in Iowa during the summer, and it is hot and humid. Inside a barn full of farrowing sows, it’s even worse. Fourth-year animal science student Shelby Curry can attest to that because that’s where she spent summer 2010 — in a sow barn as a production intern at Handlos South in Iowa. And she would do it again in a heartbeat.

Her internship was with AMVC Management Services, a company that manages many aspects of swine production. AMVC assigned her to the farm in Shelby County. She lived in nearby Audubon, a small town of about 3,000, where “everyone knows everyone and everyone’s stories.”

When Curry arrived, she knew just enough about swine to know she wanted to know more. And with 6,400 sows at the farm, she had plenty of opportunity.

At the sow barn, Curry spent 8 to 12 hours performing tasks on both the farrowing and the breeding side of production. In farrowing, she processed piglets; monitored and treated sows; treated piglets; and moved, fed and cleaned the sows. In breeding, she heat checked sows in gestation; bred weaned sows; fed, checked and treated sows for injuries; and heat checked and bred gilts and opportunity animals.

She said working on the farrowing team involved a lot of “grunt work,” giving one-day old piglets shots and processing two-day old piglets by castrating the boars, and cutting the tails in both males and females.

“We had 30-50 litters a day with 10-14 piglets in a litter,” says Curry. Teams of two administered the shots and processed about 300 piglets a day. “We got tired, and we got sweaty.”

Her favorite job was monitoring the farrowing sows. “I got to watch piglets being born and help the moms if they needed it,” she says. Sometimes Curry had to “sleeve” a sow who was having difficulty giving birth. Donning an elbow-length glove, Curry would reach inside the laboring sow and pull the distressed piglet out.

During rounds she observed the sows’ progress. “If a piglet gets stuck in the birth canal, it could become a stillborn,” Curry says. “I had to decide whether to administer drugs, sleeve or simply leave her be until the next round — all in under two minutes.”

The internship solidified her desire to go into the swine industry. “This internship was an overview. Now I need specifics,” she says. She advises students looking for internships to find where they are and go after them. “There aren’t any pigs in California,” she remarks, “I had to take the initiative. Don’t be afraid to take risks.”

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Undergrad Shelby Curry Experiences
Eye-Opening Internship in Iowa
Sally Venn Wears Many Hats:
Equine Supervisor, Teacher, Mentor, Horse Trainer and Student

Sally Venn (in red cap) showing student Kelsey Kiley how to vaccinate a mare.
Sally Venn

Multitasking has become a way of life for Sally Venn, a newcomer to the Animal Science Department. In addition to teaching beginning riding, equine behavior modification, and the Foaling Enterprise and Breeding Enterprise classes, she also supervises the campus’s Equine Center, overseeing a staff of 10 students, including three student managers.

The 30-year-old Fresno State graduate is also analyzing data and writing the thesis for her master’s degree, also from Fresno State.

Oh, yes, she’s engaged, too, and planning a spring 2012 wedding to Cal Poly agribusiness alumnus Brian Fischer (AGB ’03). Venn will work at Cal Poly through the Performance Horse Sale at the end of August, then return to the Fresno area to be with her fiancé.

The opportunity to teach at Cal Poly came up quickly, Venn said, and she grabbed it. She came on board in July 2010 to help with the Thoroughbred and Quarter Horse enterprises and has been going at a full gallop ever since. She hopes to give students a true taste of the horse industry so they can function when they get out of school. “I don’t want to sugar coat anything,” she says.

Cal Poly’s enterprise system is vertically integrated, Venn explains. “The mares are bred in the Breeding Enterprise class; the babies are born in the Foaling Enterprise, and those foals are used in the Halter Breaking class. Then the Thoroughbreds go to the Thoroughbred Enterprise to get ready to sell as race horses. Quarter Horses are turned out for a year; then, as 2-year-olds, brought into the Quarter Horse Enterprise, where students break them to ride and sell them at auction.

The Animal Science Department never lets a teaching or learning opportunity go to waste.

Foaling Enterprise

The 35 students enrolled in the Foaling Enterprise class work hard. They feed the animals, clean the stalls, and spend long hours watching the mares to determine when they are about to deliver. But Venn insists all that work gives students a connection to the Equine Center.

“Handling the mares and foals is a challenge,” Venn says. “Mares are protective, and foals might look little, but they can really push you around. Watching and helping a mare give birth gives the students a sense of ownership.”

Sally Venn (far left) and Foaling Enterprise students with mare and first foal of the season.
Tricia Harlan was completely out of her element in Chicago last summer, and cherished every minute of it. She was one of five students selected as an intern at Sara Lee headquarters in Downers Grove, Ill., a 35-minute metro ride from the Windy City.

Harlan, who grew up working on her small family farm in Riverdale near Fresno, came to Cal Poly to study animal nutrition, but switched to meat science after taking an introduction to meat science class. It was love at first bite. “I enjoy cooking and barbecuing, and knowing where the meat comes from and why it’s so tender is interesting.”

At Sara Lee, Harlan worked on the Jimmy Dean line. She worked with product color and analyzed the ingredients that go on the nutrition label. She worked to improve the quality of the breakfast sausage sandwich croissants and biscuits when microwaved and experimented with reducing the amount of sodium in sausage to see how it affects taste and texture.

Harlan lived with the other interns in a large building on State Street near Michigan Avenue, which, she explained, is also called the Magnificent Mile, “where you find the best shopping, restaurants, everything!”

On weekends she tried to tour as much of the city on foot as possible, sometimes putting in 15 miles. But her absolute favorite part of the internship was going to work every day. “It was different every day. I was trying to improve something,” she said, “and I was constantly being challenged.”

The experience was more than she expected. “I was given my own projects and told to move forward. If I needed help, I got it. This tested what I knew, it tested what I could learn from others and what others could learn from me.

“The most significant thing about Sara Lee was the family we created. I would go to work and see smiling faces every day. They looked out for me.”

While there she developed a real passion about the industry. “It makes me that much more excited to go back in industry and work,” she said.

But first, grad school.

Pictured right: Ten with Przewalski’s horses (a critically endangered species of wild horses), among camels and in a traditional Mongolian dwelling.
Fourth-year animal science student Allison Ten loves — practically lives — to travel, especially to places she has never been. So when an opportunity arose to intern in Mongolia, she jumped at the chance.

In July 2010, Ten embarked on her unusual journey to Ulaanbaatar, Mongolia’s capital, where she spent over a month working in a basement vet clinic, treating a variety of animals with an array of ailments.

Three veterinarians — affectionately referred to as Big Mogi, Medium Mogi and Little Mogi — worked there, but only Medium Mogi spoke English. “He was supposed to be there during my entire stay, but he was only there for two days. That’s when I got really good at charades,” she laughed.

At the Amar Pet Hospital, Ten worked alongside the vets, restraining animals, assisting in surgeries, drawing blood, giving vaccines, applying gauze and stitching up wounds.

When supplies were not available, they improvised, making their own gauze out of cotton fabric and repurposing plaster that was used to repair the building earlier in the day as a cast for a dog.

Because the clinic does not have much in the way of diagnostic equipment, including an X-ray machine, the vets use touch. “They also rely on traditional treatments such as yogurt to re-establish the gut in treating dogs with parvo,” she explained.

Ten lived with a Mongolian family in an apartment. “It was about a 10-minute walk to work,” she recalled, “but it was a maze, through back alleys and buildings. The roads are poorly paved, and when it rains, the streets turn to rivers.”

She describes the Mongolians as friendly and open. “It is one of the last places on Earth where the people’s entire livelihood depends solely on horses,” she noted. “It is a nomadic community, and people are very open to strangers coming in to share a meal.” But the meal wasn’t always Ten’s cup of tea.

“The food is very salty and high in fat, with few vegetables in sight,” she explained. “Their favorite beverage, ‘airag,’ is fermented mares’ milk. And their culture demands that you at least taste something that has been offered to you.”

She learned a great deal during her stay and met some amazing people. “It was a big learning experience, personal growth-wise,” she said. “I learned how independent and resourceful I am.”
Alumnus Jeff Clark: Heeding the Cattle Call

Jeff Clark (ASCI ’10) is on the job at his desk in Yuma, Colo., by 4:15 a.m., and that is just fine with him. Because he likes what he does: feeding cattle. Lots and lots of cattle.

What started out as a summer internship at JBS Five Rivers Cattle Feeding, LLC, has turned into a full-time position with the world’s largest animal protein processor.

As an intern, Clark worked in every department, rotating every one or two weeks. He learned the ins and outs of the Feed Delivery Department, Mill Department, Cattle Department, and Yard Department. Before the internship was over, Clark had received a job offer as a management trainee in Feed Delivery.

Now first thing every morning, he fires up his computer to find out which pens have new cattle in them.”Then I grab my laptop and a cup of coffee and head to my work truck,” where he connects wirelessly to the company’s network.

He’s off to “read bunks;” even though it is still pitch black outside. With the touch of a button, he can turn on the “bunk reader” light and direct the beam to the feed bunk. “It can get below negative 10 degrees outside, so it makes a huge difference to be able sit in the truck and check bunks,” Clark said.

Clark’s job is to find out where the cattle will max out their feed intake. “We want to get the most performance out of the cattle. We find the maximum point of intake. I use the information in my laptop to make a judgment call everyday on what they eat.”

He credits Cal Poly with giving him the tools to get the job done. “I can’t tell you how blessed I feel to have gone to Cal Poly,” Clark said. “Professor Mike Hall has built such a great program, which encompasses the whole industry as close to real production in size and standard as you can get.”

“I can’t tell you how blessed I feel to have gone to Cal Poly,” Clark said. “Professor Mike Hall has built such a great program, which encompasses the whole industry as close to real production in size and standard as you can get."
With a Nod to Food Safety, Cal Poly is 1st University to Earn USDA PVP & HACCP Certifications

**Safety Claims**

In the future, Lazanoff wants to expand the university’s PVP to include source and age verification for outside cattle and wants to go for natural certification (no hormone treated) cattle, as well.

For the time being, he and Alford are pleased with what they and Nelson have accomplished. “It was hard,” Alford said, “working and going to school. It was my senior project ... and a whole lot more.”

**Food Safety Starts Here**

Animal Nutrition Center Manager Casey Callaghan (ASCI ‘05) reports that the Hazard Analysis and Critical Control Point (HACCP) program they established in 2009 “continues to structure how we operate and is evolving to fit our needs and functions.”

HACCP systems are intended to document and verify that a product is consistently high quality and safe. Cal Poly has the only HACCP-certified university feed mill program in the country.

“We went through our second yearly audit in August and passed with flying colors,” Callaghan says.