With the new beef center in the final stages of construction, the first leg of the four animal science relocation projects is nearly complete.

The first of the new animal science facilities, the $3-million beef center received its first bulls July 28 and 29, to participate in the 50th Annual Bull Test and Sale to be held on Oct. 1.

“It’s great to have a new facility that takes advantage of the recent advances in animal handling and care,” said Mike Hall, professor and senior beef cattle specialist.

The new facility is equipped with two laboratories and 10 breeding stalls that will enhance the already successful bovine embryo transfer program. The beef center also includes eight lay-up pens, seven three-acre paddocks, a multipurpose building with a meeting room, a commodity barn and a student residence.

Situated on 20 acres at Cal Poly’s Escuela Ranch, the beef center now provides a central location for all beef programs - including production, teaching, research, and outreach.

The new facility will be showcased when it hosts the animal identification field day on Sept. 30, in conjunction with Cal Poly’s 50th Annual Bull Test and Quarter Horse Sale on Oct. 1.

Construction on the Animal Nutrition Center began in June and is expected to be completed by early March of 2007. The new mill will cost approximately $5.25 million and will allow for commercial feed manufacturing for all animals on campus, as well as for contract research conducted at the University.

Since the new center will use the most up-to-date feed technologies, the transition for students entering the feed industry will be much easier, said Casey Callaghan, Animal Nutrition Center manager.

“The most exciting prospect of the Animal Nutrition Center is the chance to see the dramatic change from old mill to new mill, and the opportunities that will be available for students,” Callaghan said.

When complete, the advanced equipment present in the new Animal Nutrition Center will allow students to manufacture many different types of animal food products, be involved in processing and animal nutrition research, and to better understand process management and Hazard Analysis Critical Control Points.

The new Animal Nutrition Center will be equipped with 10 commodity bins, separate processing equipment for nonruminant and ruminant products, truck scales, quality control lab, microingredient room, office and maintenance facilities.
The Vision Continues

“Change does not necessarily assure progress, but progress implacably requires change. Education is essential to change, for education creates both new wants and the ability to satisfy them.” - Henry Steele Commager

The Animal Science Department spent considerable time during the past year preparing for our Academic Program Review, which is required by the University every six years. In general terms, this is accomplished by conducting a periodic review of the program’s mission and goals as they relate to the mission of the University; our curriculum through which the program’s mission and goals are pursued; the extent to which we are achieving our objectives for student learning; the quality and diversity of our faculty and staff; and the quality of the infrastructure supporting the program. Following is a brief summary of some of the department’s successes in these areas over the past six years:

The learning and curriculum objectives were addressed and the result was significant reengineering of the animal science program curriculum. The outcome six years later: 27 new courses, 32 course modifications, 11 course deletions, and three new minors. Student reactions to the changes have been very positive.

The human resources area was improved with the addition of five tenure-track faculty and three full-time lecturers. Currently, recruitments are open for an equine nutritionist and technicians for the Equine and Poultry Centers. Great organizations are built on great people, so it is critical to recruit the very best people to the program.

Several facilities have been remodeled and new facilities have been constructed to enhance learning infrastructure and provide laboratories for teaching and research. Over $100,000 was spent to improve basic office space for new faculty and staff to support the student population growth over the past five years. Over $350,000 was spent to remodel old, non-functional laboratories into modern biotechnology teaching and research laboratories. The

The Cal Poly hosts Cattleman’s Boot Camp

Cal Poly was the chosen site for the second-ever Cattleman’s Boot Camp, put on by the American Angus Association and the Angus Foundation. Over 60 cattle producers turned up for the April 28-29 event, which provided in depth education on many aspects of the cattle industry.

“We compressed a lot of information into a short period of time,” said Joel Judge, lecturer and beef specialist. “We presented information that would normally take four-to-five weeks during class.”

The two-day camp covered everything from reproduction to freeze branding to nutrition, and attendees ranged from industry newcomers to industry veterans. A special Skills Lab was held prior to the Boot Camp to introduce new American Angus Association members to the fundamentals of permanent identification, performance information, and cattle handling and registration.

Animal Science professors Mike Hall and John Beckett both administered interactive sessions during the event. Hall covered “Reproduction” while Beckett covered “Interpreting a Feedlot Closeout.”

“The best part of the Cattleman’s Boot Camp was that most of the sessions were hands-on, in the tradition of Cal Poly education, and discussions were very interactive,” Beckett said.

“Producers were encouraged to challenge the speakers, and topics were tailored to offer the most applicable information for producers to actually use.” -P

www.animalscience.calpoly.edu
The third relocation project for the Animal Science Department, the new Meat Processing Center, is in the final stages of the planning process.

Plans for the new 13,000-square foot facility include a multi-purpose conference room, a Hazard Analysis Critical Control Points (HACCP) and food-safety lab, harvest and processing areas for both red meat and poultry, freezers, equipment and dry storage, ready-to-eat processing and packaging and two offices.

“Our focus will be on food safety and HACCP, our current strengths, and on our future strength for innovation of ready-to-eat (RTE) products. This development area is a major challenge to most suppliers and retailers that specialize in RTE meat products, and is one of the fastest growing areas in the food industry,” Department Head Andy Thulin said. “The industry has recommended we increase the area dedicated to the RTE processing and packaging areas.”

The Animal Science Department is also networking in order to receive added funding for the building. The department has raised $2 million of the needed $5 million thanks to a $1 million donation from the Modesto-based Lau family, owners of Yosemite Meat Company, and $1 million of state funding.

The project is set to be bid on June 1, 2007, and construction is expected to take 18 months.

Funding still needed for Meat Processing Center

The Animal Science Department is perfecting plans for the updated and relocated Meat Processing Center.

Morro Bay protection efforts include Cal Poly

Cal Poly agriculture land at lower Walter’s Creek is showing vast improvement after a three-year makeover headed by the Morro Bay National Estuary, the Department of Fish and Game, the National Fish and Wildlife Service, and Cal Poly. The restoration process included bank stabilization using rock structures, as well as revegetation of land surrounding the creek.

Walter’s Creek is a tributary to Chorro Creek, which then flows into Morro Bay. In the past century, increased sediment has greatly threatened Morro Bay, making the Walter’s Creek Restoration Project important in protecting the Morro Bay Estuary.

In order to prevent further erosion into the creek, the California Conservation Corps planted over 2,000 native trees in the area surrounding the creek and established stability on the creek’s banks.

To assist with the project, Animal Science professor Mike Hall created a riparian pasture with a rest rotational grazing program in the upland area, which will be implemented as soon as the new vegetation can withstand the presence of cattle.

“The whole principle is to increase the uniformity of grazing to allow for additional rest, which will increase the number of plant species present and the overall health of the landscape,” Hall said.

Resource management undergraduate and graduate students within the Natural Resource Management Department were enlisted to assist with the restoration efforts. An Advanced Applications in Watershed Hydrology class developed a plan for hydrological improvement in the region.

Lower Walter’s Creek, located on Walter’s Ranch, was originally owned by Camp San Luis Obispo National Guard, where the land was used for shooting practices, before it was acquired by Cal Poly in the 1980s. Prior to the restoration efforts, Walter’s Creek was the subject of a 10-year watershed study funded by the US Environmental Protection Agency (EPA) which concluded in 2002.

“Lower Walter’s Creek was a control site, so we had to wait until the study ended to secure funding to repair the area,” Hall said. “It probably took us about three years worth of planning and preparation.”

In another attempt to protect the Morro Bay Estuary, Cal Poly may turn over 17 acres of floodplain located on the Chorro Creek Ecological Reserve to the Department of Fish and Game in return for 430 acres of grazing land. With access to the floodplain, which was previously used for farming, the Department of Fish and Game is hoping to transform it back into a natural floodplain in order to trap sediment headed toward the Morro Bay Estuary. Watch for updates in future Stock Report issues.
Cal Poly is working hand-in-hand with the Charles Paddock Zoo in Atascadero and the Santa Barbara Zoological Gardens to prove that animal science can extend beyond just domesticated animals. Introducing students to the world of exotic animals are Animal Science professors Bill Plummer and Elizabeth Koutsos, who work with the local zoos to give students unique opportunities. Plummer has been taking his Reproductive Physiology classes (ASCI 351) to the Charles Paddock Zoo since Fall Quarter 2005 to give students an understanding of reproduction as it occurs in zoos around the world.

“My hope is that students will gain an appreciation for the complexity of reproduction as practiced by zoos, while at the same time coming to understand that it is really not that different from everything they have come to learn about farm animals,” Plummer said.

The Charles Paddock Zoo and Santa Barbara Zoo are two of only 211 accredited zoos in North America, putting them in the same company as the San Diego Zoo and the Bronx Zoo. Upon arrival at the Charles Paddock Zoo, ASCI 351 students are met by zoo director Alan Baker, who then leads a tour of the zoo's wide array of animals, ranging from a 14-foot Burmese Python to a pair of Indochinese Tigers.

After the tour is completed, Baker lectures on animal reproduction in a zoo and how it differs from animal reproduction in the outside world. Since many zoo animals appear on the endangered species list, the mating process is very restricted, Baker said. An expert on each species is assigned a Species Survival Plan (SSP) studbook, which allots the responsibility of deciding which animals will mate, in order to prevent animal inbreeding and ensure diversity.

Even with experts in charge of the mating process, animal reproduction within zoos can be very complicated, Baker said. He highlighted the Fossa, a carnivorous mammal from Madagascar, as a species that is particularly difficult to breed, due the female’s limited duration in heat, and the species’ territorial loner personalities. In other species, female pickiness can often complicate the breeding process, Baker said.

The Santa Barbara Zoo too deals with breeding difficulties. Koutsos is advising a number of students working with the zoo through the summer in an attempt to determine why flamingos on exhibit have not successfully reproduced in the past few years. The students will observe the birds weekly and then report the animals' behavior back to the zoo.

In the same way that reproduction in zoos is a closely-watched process, so is animal nutrition. For another project with the Santa Barbara Zoo, graduate student Lori Gutzmann is working with Koutsos to study the affect of altering meerkat diets. She will determine whether a diet designed for an insectivorous mammal will make the meerkats healthier than the cat/dog food mixture previously used.

“There is something very rewarding about participating in a project that might help an endangered or protected species,” Koutsos said. “For those animals, anything we can do to enhance their management, health and well-being is a major impact, and that is a really rewarding thing to be a part of.”

In 2006, Cal Poly once again hosted the Future Farmers of America (FFA) State Judging Finals, keeping with a tradition over 60 years in the making.

High school students from all over California traveled to San Luis Obispo to display their judging skills in one of 18 different categories, including Farm Records, Forestry and Marketing.

Each high school judging team is made up of four contestants, but only the top three scores are counted. Once the team scores are tallied, the winning team in each category advances to the National Judging Finals in Louisville, Ky.

Beef specialist Joel Judge called it a privilege and an honor to host the state finals because “California is always a major player at the national competition.”

The Animal Science Department is in charge of administering the Light Horse, Livestock, Specialty Animals and Poultry categories of the competition, preparation for which begins at the end of Winter Quarter. The responsibilities include feeding, clipping and hauling all of the animals that will be used in the judging competition, a process that involves both Animal Science students and faculty.

“We want to put on a good contest with quality livestock,” Judge said.
Student creates award-winning curriculum

Animal Science graduate student Sarah Barnum teamed up with school teacher Tina McEnroe to create an award winning curriculum that gives seventh and eighth graders an inside look into the cattle industry.

“Bringing animal production into the classroom helps kids understand the process of how animals are raised in this country,” Barnum said. “With constant urban growth, children are not learning about industries that we depend on for survival, such as the production of beef.”

Barnum created the curriculum for her senior project as an agriculture science undergraduate student. McEnroe, the Santa Barbara County Farm Bureau’s GAATE Foundation Outstanding Educator of 2006, then implemented the project, entitled Home on the Range, into her class at Vista de las Cruces, a K-8 school in Gaviota, Calif. As part of the curriculum, McEnroe’s students were faced with mock scenarios, which forced them to make industry decisions. Students also completed mini reports in order to learn cattle breeds and the history of cattle brands.

The curriculum was originally written for, and ultimately received, a disseminator grant, which makes it widely available for implementation by other interested teachers. Barnum said the biggest challenge in creating Home on the Range was making the curriculum fun and interesting while continually meeting state standards. She said through the curriculum students will understand the ways in which beef cattle depend on for survival, of how animals are raised in this country, “Bringing animal production into the classroom helps kids understand the process of how animals are raised in this country,” Barnum said. “With constant urban growth, children are not learning about industries that we depend on for survival, such as the production of beef.”

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A student project that Barnum created was awarded the Outstanding Educator of the Year Award at the 2006 GAATE Foundation National Conference.

The curriculum was designed to teach students about the production of beef. Barnum and McEnroe at the McEnroe’s Ranch La Purisima.

Awards Banquet 2006

Above left: Teacher of the Year Jaymie Noland accepts her gift. Above: Students mingle at the Santa Margarita Ranch location. Left: The 2006 Outstanding Senior Award recipients pose with Department Head Andy Thulin. From left: Danielle Albini, Sarah Vonbrandt, Laura Shuey, Erin Lewis. Kimberly Villines, Wendy Bruce, Leoma Box, Kate De-Schryver and Andy Thulin.
Embryology class opens doors for students

Cal Poly Animal Science is leading the way when it comes to embryo technology.

For six years Debbie Beckett has been teaching Applied Animal Embryology, giving students an in depth look into micromanipulation and making Cal Poly’s undergraduate program the only in the nation to offer such a course.

In the class, students work with a $60,000 micromanipulator to biopsy, split, and clone embryos. Students are also given experience in the creation of embryonic stem cells, Intra Cytoplasmic Sperm Injection (ICSI), and embryo freezing, called cryopreservation.

“The students receive a set of real embryos for each lab, practice the procedures and monitor their embryos for development each week,” Beckett said.

“Th e enthusiasm of the students is overwhelming.”

- Debbie Beckett

Since introducing Applied Animal Embryology, ASCI 406, to Cal Poly, Beckett has watched as 10 of her students have gone on to work in human fertility clinics across the country, and another two found employment in the animal reproduction field. Although the class works solely with mice, cow and horse embryos, the research is directly applicable to human embryos.

Danielle Albini, who earned her animal science degree in June 2006, decided on a career in human fertility after she was referred to ASCI 406 by a friend. After completing the course, Albini couldn’t get enough, so she decided to hone her embryology skills by working as a teaching assistant for two quarters. Before graduating, Albini landed a job at the Beverly Hills based ART Reproduction Center.

Animal Science major Tessa Berwald hopes to follow in Albini’s footsteps and find work in a human fertility clinic post-graduation.

“This is the first class that showed me something I’d like to do after graduation,” Berwald said. “It’s the first class that got me excited about a career that related to the classes I was taking.”

Recently graduated animal science major Dana Alexander, who plans to continue her education in veterinary school, said ASCI 406 gave her a better understanding of the reproductive side of being a veterinarian.

“This class helped me to see the potential and possibility of this type of work in the animal industry,” Alexander said.

Beckett said her goal in teaching Applied Animal Embryology is to provide students with the skill-sets needed for work in a laboratory environment. ASCI 406 students have an advantage when entering the human fertility field because of their in depth experience with mammalian embryos.

“The students develop marketable hands-on laboratory skills that are extremely valuable to research institutions and human fertility clinics,” Beckett said.

A number of students are focusing senior projects and special problems on embryonic stem (ES) cells. ES cells are an exciting prospect for those with a variety of physical maladies. With the transfer of ES cells, researchers are hoping to treat such diseases as diabetes, spinal cord injury, Parkinson’s disease, muscular dystrophy, heart disease, vision loss and hearing loss.

Those enrolled in ASCI 406 get hands-on experience in embryo technology. The class, offered only in Winter Quarter, has an intense lab section, which consists of at least six hours each week. But Beckett said the subject matter trumps the workload, and the students have responded to Applied Animal Embryology with excitement.

“The enthusiasm of the students is overwhelming,” she said. “They are so thrilled to be performing such cutting edge techniques. When they master these techniques they are empowered and develop a self-confidence that wasn’t there before.”

Dana Alexander works on the micromanipulator while Tessa Berwald looks on.
Wash Rack constructed at Equine Unit

Thanks to the Advanced Agriculture Mechanics class, the Animal Science Department has a new equine wash rack. The rack was primarily constructed by a group of 12 Agriculture Education majors enrolled in the BioResource and Agricultural Engineering 481 class. “The students received practical experience in construction by actually constructing a large project,” said Dr. Bill Kellogg, the project’s advisor.

Each year the BRAE 481 class undertakes a hands-on project, and when Animal Science Department Head Andy Thulin suggested a wash rack for the horse unit, Kellogg agreed. Project costs totaled under $3,500, less than three-times what the cost could have been if professionals were hired.

The Animal Science Department funded the steel and gravel needed for the base and the lumber needed for forming. However, Union Asphalt Inc. donated the most expensive material, the concrete. Over the last 21 years, Union Asphalt has donated over 250 yards of concrete to the College of Agriculture.

The new wash rack, ideally located for views of Bishop’s Peak and the San Luis Obispo landscape, is open to all students. “If they are washing or grooming horses they are welcome to use the wash rack,” Kellogg said. -P

Koutsos lands ‘dream job’

The Animal Science Department bid farewell to assistant professor Elizabeth Koutsos during summer, as she left Cal Poly to pursue other career goals. After over three years in the department, Koutsos accepted a division management position with Mazuri Zoo Foods, which allowed her to move back to her home state of Maryland.

“The Mazuri job was the point of my Ph.D,” she said. “The reason I went to graduate school is that I wanted to do zoo nutrition.”

At Mazuri Zoo Foods, Koutsos will be responsible for developing and testing animal diets for major zoos and private collections nationwide. While she is exited about the new position and the move home, Koutsos will greatly miss her students here at Cal Poly.

“I’ve gotten so much out of teaching and advising, so much more than I ever thought,” she said.

During her time in the Animal Science Department, Koutsos saw a number of her students enter Ph.D programs and enroll in Veterinary schools. She also assisted three graduate students and one undergraduate student with papers that appeared in publications. In 2004, Koutsos was honored with the Milton L. Sunde Award for excellence in avian research published in the Journal of Nutrition.

Koutsos came to Cal Poly in 2002, soon after earning her Ph.D in nutrition from UC Davis, where she also earned her master’s degree in immunology. She attended University of Maryland to gain her bachelor’s degree in animal science. At Cal Poly, Koutsos taught applied monogastric nutrition, physiological chemistry of animals, immunology and avian diseases. Her position also included management responsibilities at the poultry unit as well as a 25 percent research appointment.

“Professor Koutsos did an amazing job at engaging undergraduate students in applied and basic research during her time at Cal Poly,” said Department Head Andy Thulin. “We are looking for a replacement that can carry on her dedication to students and can further build the immunology program that she began.”

The Animal Science Department is currently in review of candidates to fill the position, with the replacement scheduled to begin early-to-mid fall. -P

Fall 2006/Winter 2007 Calendar of Events

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Cal Poly Suffolk Disbursal Sale

Last Day of Classes

Mid-year Commencement

“A Century of Heritage” is available for purchase at the El Corral Bookstore for $35. Log on to www.elcorralbook-store.com or call 1-800-367-0771
Cal Poly records high sell at prestigious sale

Animal Science professor Mike Hall made a mark for Cal Poly at The Signature Collection XIV sale by recording the high selling lot at the prestigious invitational event. Cal Poly’s top lot, Poly 1407 Princess ET, 9/8/02 by Bon View New Design 1407, with a 4/5/06 heifer calf by BR Midland, sold for $15,500 to Tres Hojas ranch in Buenos Aires, Argentina.

The heifer and her calf will remain at Cal Poly in order to enter the embryo transfer program, increasing the number of Tres Hojas heifers in the program to six. “With participation in the embryo transfer program, Tres Hojas is able to incorporate new genetics into their beef program,” Hall said.

Cal Poly sold four Spring Pairs and one Bred Heifer, averaging at $6,890 a sell, at The Signature Collection XIV sale, which took place June 24 in Wilton, Calif.

Mike Hall can be contacted at mhall@calpoly.edu.

For bull information, call Mike Hall at 805-756-2685 or Joel Judge at 805-756-6751. For Quarter Horse information call Pete Agalos at 805-756-7414.

National Reined Cow Horse Snaffle Bit Futurity
6 two-year-old Cal Poly Quarter Horses will be sold at the Selective Sale on Sept. 30 in Reno, Nev.