

January 10, 1984

TO: Faculty and staff

The first issue of the animal science newsletter, "Tales and Trails," has arrived from the printer. Inside you'll find articles on the faculty, staff, extension personnel, alumni, students, and special groups of our department. Thanks to a lot of hard work, and technology shared by Illustration Services and Reprographics, the newsletter has a polished appearance. I think you will find it informative, yet easy to read. Copies are also being sent to animal science alumni.

I hope you'll enjoy the newsletter. It should fill you in on the people, research, and events that make up animal science, both here on campus and at field stations and outlying areas.

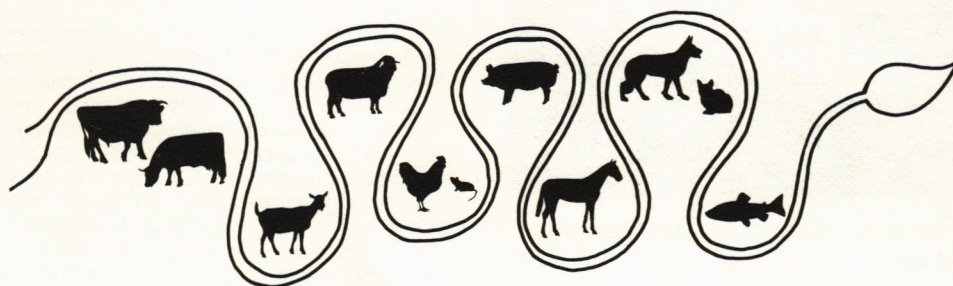
The newsletter will be a quarterly publication. We would be happy to have suggestions for articles for future issues. If you have an event you would like to publicize or know someone you would like to read about in the newsletter, feel free to stop by my office in Room 154 Hart Hall, or call me at 752-6786 mornings. A section on "Dates to Remember" will be available in future issues.



Suzanne Jones



# TALES AND TRAILS



Volume 1, Number 1

Department of Animal Science    University of California, Davis    Davis, California 95616    (916) 752-1250

Dear Friends:

On behalf of the department of animal science of the University of California, Davis I am happy to send you this first copy of our newsletter, "Tales and Trails."

The teaching and research programs of the department are concerned with the many issues related to the production and care of farm and companion animals. It is thus imperative that these programs be based on scientific and economic principles involved in the feeding, breeding, management, husbandry and care of these animals. Further we have a responsibility to assure that recommended practices provide a humane, sanitary, and comfortable environment for animals.

The faculty of the department consists of scientists with expertise in genetics, nutrition, physiology, biochemistry, management, and husbandry practices who are knowledgeable about animal production. The faculty research and teaching programs are supported by a highly competent and dedicated staff of associates, assistants, animal technicians, and herdspeople. The entire faculty and staff are also greatly dependent on an excellent office staff, and business officers specializing in personnel procurement and accounting.

Another group closely aligned with the department consists of animal science extension specialists. These specialists disseminate information and conduct research on animal production problems of a more immediate concern to animal agriculture. They have expertise concerning the production, management and care of farm, companion, and aquatic animals. These specialists are also supported by a fine technical and clerical staff.

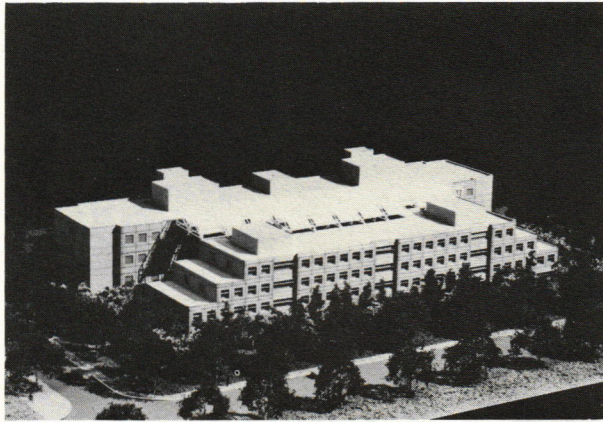
Each issue of "Tales and Trails" will contain articles about members of the faculty and staff of the department and members of animal science extension. In addition, there will be articles on various research, teaching and extension programs and other activities. Still another area to be covered involves students and alumni of the department, and their activities.

If you have suggestions for stories or personalities to include in future issues, please contact our editor, Suzanne Jones, or me.

Sincerely,

R. W. Touchberry, Chairman  
Department of Animal Science





**A model of the completed Food and Agricultural Sciences Building**

## **New Food and Agricultural Sciences Building underway**

Ground was broken for the new Food and Agricultural Sciences Building during a November 21 ceremony held at Freeborn Hall in which UC President David Gardner, Chancellor James Meyer, and other university officials participated. The groundbreaking was performed by a shovel-equipped robot arm located at the building site on La Rue Road and Bioletti Way when the officials typed their initials into a computer terminal. Cameras at the building site were used to convey the groundbreaking to large television screens at Freeborn.

During his keynote address, UC President Gardner said, "The relationship between higher education and agriculture has been one of the most fruitful chapters in California history." He also noted that agriculture is responsible for over 10 percent of the state's jobs and 25 percent of the nation's produce.

California State Senator Jim Nielsen, one of the speakers at the event, called UC Davis "a cradle of agricultural knowledge" and said the building "represents the acknowledgment of agriculture's continued prime importance in the California post-secondary educational system."

The Food and Agricultural Sciences Building will provide approximately 129,800 square feet for teaching, research and extension activities for the departments of animal science, avian sciences, environmental toxicology, nutrition, and the food protection and toxicology center. The space will be composed of laboratories, laboratory support, animal facilities, teaching laboratories, faculty offices, administrative and administrative support areas.

The laboratories, laboratory support, animal rooms and support areas, and the teaching laboratories are to be located in one structure, and the offices, administrative areas and their support areas will be in a separate, connected building. The laboratory structure will be a five-level building, and the office administrative structure will be a four-level building. The animal science animal space will be located adjacent to existing facilities at the Cole Facility in a single-story structure.

The conclusion of a 1975 College of Agricultural and Environmental Sciences study was that a major new facility would be needed if the campus is to meet its obligations to a progressive agriculture

industry. This space is considered essential to maintenance of the campus' research, teaching, and extension roles in support of California's agriculture and consumer needs.

## **Faculty profile: Robert C. Laben**

Dr. Robert Cochran Laben was born and raised on a 218-acre dairy farm at Darien Center, in Western New York State. It was there that he first became interested in animals, plants, and agriculture. Laben completed grades one through eight at a one-room country school house, and attended high school at nearby Alden High, where he graduated as class valedictorian. In high school Laben was active in 4-H, FFA, and livestock judging teams. He entered Cornell University's College of Agriculture and graduated in 1942 with a B.S. in animal husbandry.

Says Laben, "My undergraduate advisor at Cornell was Dr. Glenn Salisbury, and I give him a great deal of credit for making me prepare for alternative careers to farming, which was my intent at the time." Laben also specialized in military science during college, and graduated with a commission in the U.S. Army.

Shortly after graduation, Laben received orders to report for active duty at Fort Niagara, N.Y. After training at Fort Sill, Oklahoma, he was assigned to the 311th Field Artillery Battalion of the 79th Infantry Division. The division embarked for the European theater a few weeks before the American invasion of France. Laben was battery commander of "C" battery of his battalion. His division followed the early invasion forces on the Cherbourg Campaign.

Laben was wounded in action and taken to England for surgery and recuperation. He returned to action and fought until fall of 1943, when he was again wounded, this time seriously. He was evacuated first to Paris, then England, and finally to the United States. Laben held the rank of captain and was awarded the Bronze Star for combat action as well as the Purple Heart with Oak Leaf Cluster.

Laben spent the next two years at the Rhodes General Hospital in Utica, N.Y., where, he says, "They did an excellent job of patching me up." He applied for detached service and taught military science and coached the men's and women's rifle teams at Cornell University during this time.

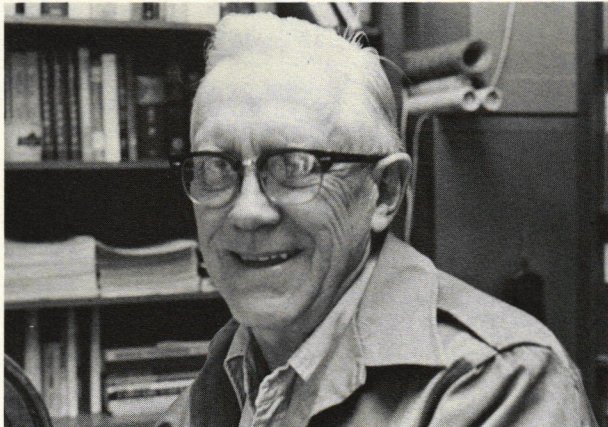
Laben also met his future wife, Dorothy, at Cornell, where she was a graduate student in nutrition. Dorothy joined the United States Department of Agriculture in Washington, D.C., and she and Laben corresponded for a year. Laben was discharged from Rhodes General Hospital in 1946 and was accepted for graduate work at Oklahoma A & M University in Stillwater, Oklahoma. He and Dorothy were married that November in Kansas City, Missouri.

At Stillwater, Laben completed his Master's degree, working under the direction of James Whatley with the regional swine breeding project. His work there involved the inbreeding, linebreeding, and linecrossing of Duroc-Jersey swine. Upon completion of his degree, he accepted an assistantship at the University of Missouri, where he earned his Ph.D. in animal breeding and genetics. Laben's major professor at Missouri was Dr. Harry Herman, and Dr. Gordon E. Dickerson served as his advisor. Laben was also fortunate to study under two other well known scientists,



Dr. C. W. Turner, an endocrinologist, and Dr. Samuel Brody, author of the classic text, "Bioenergetics and Growth."

Laben came to UC Davis in 1950 after completing his Ph.D. He was hired by Dr. Elmer Hughes of the animal husbandry department for a position working with professors Tom Mead and Bill Reagan. With Mead and Reagan, Laben worked on the dairy breeding project concerned especially with the effects of inbreeding, outcrossing, and genetic gain in dairy cattle.



**Dr. Robert Laben**

During his career at UCD, Laben has taught dairy production, lactation (along with Dr. Baldwin), and animal breeding (along with Dr. Bradford and Dr. Gall). Laben's research interests have been in the area of genetic and environmental factors affecting milk composition, and the relationship between the stress of high yield in dairy cattle and reproductive efficiency. During a sabbatical leave at Iowa State University in 1976-77, he worked with Dr. Gene Freeman investigating the relationships between yield and reproductive efficiency.

When environmental contamination with pesticides became a concern in the early 1960s, Laben worked with Dr. Andy Peoples of the School of Veterinary Medicine's department of pharmacology, and at legislative committees and present their findings at several conferences and scientific meetings.

Laben has been involved in the undergraduate curriculum from the late 1950s until the present. He was master advisor in charge of the administration and development of the undergraduate teaching program of the department from the initiation of the position until this year. He has also been vice-chairman of the department since about 1978. Laben was the director of the UCD Computer Center between 1964 and 1969, a period when the center expanded in its capacity and ability to serve the campus. Says Laben, "One of my responsibilities during that time was to introduce people on campus to the computer and the methods of adapting it to their research and teaching needs."

In the community, Laben has been active in Davis Community Church, where he is a Presbyterian elder and deacon. He has spent a number of years in active committee work with the Boy Scouts of America, and has worked as a volunteer hunter safety instructor for the California Department of Fish and Game for over 22 years.

The Labens have four children, two boys and two girls. Their son John is a UCD grad in landscape and park administration. He manages a motel with considerable grounds at Williamsburg, Virginia.

Their second son, Robert, graduated from UCD with an animal science degree before joining the Peace Corps and serving in Ecuador for four and a half years. He and his wife and their two sons now reside at Mesa, Arizona, where he is herdsman for a large dairy. Elizabeth Laben graduated from the UCD agricultural economics department. She is a vice-president in Lloyd's banking system and lives in Fairfield. The Laben's youngest daughter, Catherine, graduated from UCD with a double major in animal science and nutrition. She is currently a medical technologist at a hospital in Bishop, California.

## 1983-84 ASAS President

Animal Science faculty member William N. Garrett served as president of the American Society of Animal Science during 1983-84. While the ASAS presidency is a one-year term, it is really a three-year commitment. In addition to their year as chief officer, ASAS presidents also serve a year as president-elect and a year as past president. This provides time for adequate training to take place and facilitates a smooth transition in leadership. Garrett explains the purpose and concerns of the organization as:

1) to provide for more effective research and teaching in animal science, and

2) to disseminate scientific and educational information, and publish the Journal of Animal Science.

Garrett describes the Journal of Animal Science as "a forum for research, while ASAS itself has four sections: Northeast, Midwest, Southern, and Western. Each has its own meetings and officers; ASAS is the parent organization."

An item of concern for the members and officers of ASAS during Garrett's term as president has been the activity of animal rightist organizations and the controversy over the health aspects of animal products.

Says Garrett of these concerns, "We at ASAS want to be leaders in determining guidelines for quality animal care and do the research to provide additional information where current knowledge is limiting."

Members of ASAS believe it is very important that issues involving diet and health be pursued with rigor to resolve any controversy regarding the role of animal products in the human diet. Garrett is critical of individuals who extrapolate study results to make recommendations regarding human dietary changes.

## Baldwin returns from sabbatical in England

Dr. R. L. Baldwin returned to Davis in July, after spending 10 and a half months abroad. Baldwin left the United States for a sabbatical leave at Grassland Research Institute in Hurley, England last September. He chose GRI, about 30 miles from London, because of its strong bio-math and ruminant nutrition groups.

While at GRI, Baldwin constructed a mathematical model of the lactating dairy cow which allows evaluation of factors which determine nutrient partition. Among the researchers he worked with were John Thornley, Jim France, David Beaver, David Thomson, and Margaret Gill.



Mary Ellen Baldwin and Robert (16) and Randy (20) accompanied Lee during his stay in England. Baldwin's previous sabbaticals have taken them to Australia and New Zealand. Says Baldwin, "They enjoyed it. Now they know all forms of English."



**Dr. Lee Baldwin**

The Baldwins visited many European countries, including Scotland, Wales, Ireland, France and Belgium. In England, Baldwin was invited to speak at the University of Newcastle, the University of Reading, the University of Leeds, and the National Institute for Research in Dairying in Reading. He was also a guest speaker at the University of Aberdeen and Rowett Research Institute in Aberdeen, and the Hannah Research Institute in Ayr, Scotland; the University of Wales at Aberystwyth; the Institute de la Recherche National Agronomique (INRA) in Paris-Grignon, in Rennes, and in Paris, France; and the University of Ghent in Belgium.

The cities Baldwin most enjoyed visiting were Bath and York, England. Says Baldwin, "They're small towns with all the historical accouterments. Of course the cathedral at York is extremely famous and has the oldest stained glass windows in Europe. We saw it just a few weeks before it burned. I liked Bath because of the Roman ruins. Again, it's a nice, small city."

Baldwin has already submitted several papers for publication as a result of the work he conducted in England. However, he adds, "I'm always glad to return home."

## Oscar Lang Memorial Scholarship established

For more than 22 years, Oskar Lang was supervisor of the animal science small animal colony. From 1961 until his death in February, 1984, he provided quality animals for research and teaching.

Lang was born in Yugoslavia and had a veterinary degree from the University of Vienna. When he and his American wife, Lillian, moved to California, Lang was unable to practice veterinary medicine without an American degree. For a while he worked for another veterinarian, and then enrolled at the UC Davis School of Veterinary Medicine.

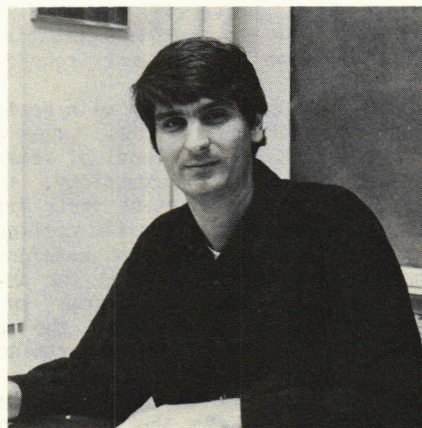
Lang, however, had a heart problem, and doctors warned him that it would be unwise to pursue a degree. Veterinary Medicine's loss was animal science's gain when Lang came to manage the department's small animal colony in 1961.

Says Dr. Eric Bradford, "A few months after Oscar had been here, the weaning weights of the animals had gone up 50 percent. The use of laboratory animals for research and teaching in the department has expanded greatly over the years, partly because we have had such good animals."

Bradford also praises Lang's surgical ability. Says Bradford, "If anyone needed adrenalectomized animals, Oscar could do the operation with great skill. He was expert in all aspects of laboratory animal husbandry, and maintained colonies widely known for their excellent health status. People from across campus, including the School of Veterinary Medicine, would send students and visiting scholars to him to learn special techniques and about laboratory animal management generally. He also received many requests for information from people outside the university, and always gave generously of his time and knowledge."

Lang's teaching skills were formally recognized in 1975 by his appointment as a lecturer, and he served as an instructor in animal science 49, 92 and 192 and for the laboratory section of animal science 140, the department's senior level course in laboratory animal management.

Animal science faculty, staff, students and friends of Oskar Lang who had the privilege of knowing and working with him have established a scholarship in his memory. The award has been titled the Oskar Lang Memorial Scholarship in Laboratory Animal Science, and it will be given to academically qualified undergraduates who have demonstrated an interest in and an aptitude for work with laboratory animals. Contributions are still being received at this time. The scholarship will be offered for the first time next academic year (1985-86).



**Dr. Dan Brown**

## New faculty: Dan Brown

Dr. Dan Brown joined the faculty of the animal science department in 1983. Brown received his Ph.D. in nutrition from Cornell University in 1981. He earned a B.S. in animal science from UC Davis in 1976.

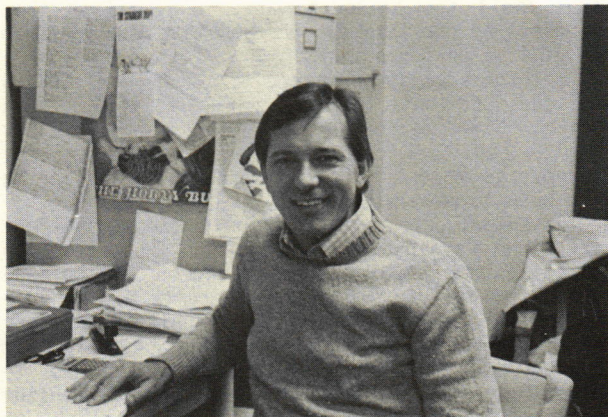
Brown grew up just outside Sacramento. He developed an interest in animal science as an undergraduate during an internship at the Sierra Foothill Range Field Station. Says Brown of the internship, "It's an opportunity that students have here for a practical, hands-on, live-in experience with livestock, either commercial or research. It's a chance for people to get the total immersion effect in animal science."



After receiving his doctorate, Brown worked with the Small Ruminant Collaborative Research Support Program in Western Kenya. During his two years in Africa, he conducted forage and livestock nutrition management research, built labs, trained people, did on-farm development, and worked on goat husbandry. Brown also married his wife, Kathryn Boor, in Kenya. The couple returned to United States in 1983, and moved to Davis within a few months.

Brown is currently conducting research in two main areas: the control of body nutrient reserves in lactating animals, and the factors limiting livestock production from tropical forages.

Along with Dr. Nancy East of the School of Veterinary Medicine, Brown heads the UCD Dairy Goat Research Facility. He will teach animal science 1 next year, along with a new animal nutrition class.



Dr. Gary Anderson

## Anderson wins Magnar Ronning Award

Professor Gary Anderson is one of three winners of the 1983-84 Magnar Ronning Awards for Teaching Excellence. Philosophy Professor Michael Wedin and chemical engineering Professor Pieter Stroeve were also honored with awards.

The awards are named after the late Magnar Ronning, former associate dean of the College of Agricultural and Environmental Sciences and chairman of the animal science department. Each of the award recipients received an individual plaque, and their names have also been inscribed on a permanent plaque on the fireplace in the Memorial Union lobby.

Anderson is the first animal science faculty member to be honored with the award since it was instituted in 1977. Award recipients are selected by Student Viewpoint on the basis of student nominations.

Anderson received his undergraduate degree from Michigan State University, where he majored in dairy science. He earned a Ph.D. in vertebrate physiology from Cornell University. Anderson joined the UC Davis animal science faculty in January, 1974.

Anderson says he spends a lot of time organizing for the classes he teaches. With often more than 200 students enrolled in animal science 2 and as many as 175 in physiology 121, Anderson values opportunities to get to know his students outside of class.

Says Anderson, "It's sometimes very difficult to get to know the very good students, because they don't have problems with the material so they don't come in for help. It's sometimes only after class that an association of a name with a face comes about."

"I think it's very important that instructors have a certain philosophy that invites students in," says Anderson. "An instructor can provide cues to students that it's O.K. to come in and talk. The message one wants to give is 'I'm available to you.' I try to give that message. An instructor doesn't do it just with office hours."

Anderson describes his teaching philosophy as having two complementary premises. "On one hand very high standards should be set for your students," he says. "It's important to have high expectations and reward those who meet them." But Anderson says just setting high expectations isn't enough. "Students should also be treated like human beings," he says. "Just being open and understanding of their problems isn't enough, but on the other hand, just giving them a high-quality academic course isn't enough either."

Anderson recommends that new UCD students take advantage of the many opportunities for assistance available through advising centers, peer advisors, and instructors. "Rather than trying to do everything completely by himself or herself," says Anderson, "students should involve some of these other individuals. That would include getting to know faculty members. These are people that can have a lifelong impact, but that's not going to happen unless they are given an opportunity."

Of the late Magnar Ronning, Anderson says, "One of my first exposures to UCD was through Ronning. He supported the development of the embryo transfer program here, which was why I was hired. As a young faculty member, he provided both moral and financial support to get programs going. He was a person who everyone knew and liked, which also reflects why I think the award is something special. It was established in memory of someone I think was special."

## Touchberry named ASAS Fellow

Dr. Robert W. Touchberry, Sesnon Professor and UC Davis animal science department chairman, was recently elected as a fellow of the American Society of Animal Science. A specialist in dairy cattle breeding, Touchberry was selected on the basis of his "distinguished service to animal science and the livestock industry over a long period of time."

Touchberry received a B.S. in animal husbandry from Clemson University in 1945, a master's degree in animal breeding in 1947 and a doctorate in animal breeding and genetics in 1948 from Iowa State University.

He joined the University of Illinois, Urbana, department of dairy science in 1948, and in 1970 was appointed head of the department of animal science at the University of Minnesota, St. Paul.

In 1956, Touchberry was awarded a Fulbright Fellowship for research and lecturing in Denmark and in 1971 received the American Society of Animal Science Award in Animal Breeding and Genetics. He has served as consultant to several international livestock projects and on numerous state and national committees and task forces.





**Dr. Robert Touchberry**

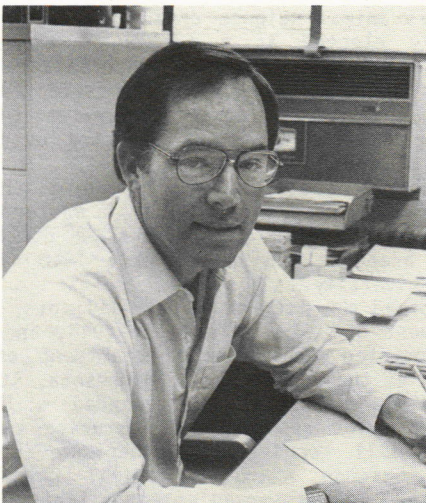
Touchberry became a faculty member and chairman of the department of animal science at UC Davis in 1982. He has been a member of the American Society of Animal Science for more than 30 years.

## Price assumes new post

Dr. Edward O. Price will serve as the animal science master adviser for 1984-85. The master adviser oversees the undergraduate advising and teaching programs, including making sure that courses offered are the courses students need to meet their career objectives, making sure professors and TA's are available to teach classes, and academic problem-solving for students.

The master adviser is also the chairman of the department undergraduate committee which acts on matters related to the curriculum of the animal science major. Says Price, "The master adviser and undergraduate committee hopefully provide leadership for the department in matters relating to teaching and advising students. They act as sort of a watchdog to see that the needs of the students are met."

Price is supportive of progress in curriculum development. "There should be a natural evolution in the kinds of courses that we're offering," he says. "As certain subject matter (aquaculture, genetic engineering, etc.) becomes more prominent



**Dr. Edward Price**

in the animal industry, we should respond by offering courses which prepare our students to work in these areas. Our newly developed aquaculture program, for example, has given the department a great deal of visibility."

The position of master adviser has been set up as a post that changes every year. Each new master adviser will assist one year and take over the following year. The position will be rotated among the senior faculty in the department. As a result of the rotational nature of the position, Price points to the importance of support staff in providing continuity from year to year. Says Price, "The support personnel, Jim Robb and Tricia Yates, are the key to the success of the rotational master adviser system."

Price has set forth some areas in which he hopes to see progress during his term as master adviser. "I would like to see faculty take more interest in students," he says. "I think in a lot of cases that's all the students want. We need to show students by our interest in them that they're free to utilize our expertise.

"I think some students are reluctant or afraid to contact their faculty advisers, too," says Price. "Some may be shy and others may think they don't need their adviser's help. We also may discourage interaction with students by appearing too busy to meet with them."

The animal science faculty and academic offerings are a valuable resource for students. In addition to teaching and providing advice and insights into plans of study, faculty may be able to direct students to job opportunities as they near graduation. Says Price, "Many times faculty hear about job openings through colleagues in other universities and in industry. Extension personnel also help us to keep abreast of employment opportunities for students."

## Faculty profile: William N. Garrett

Dr. William Norbert Garrett was born in Cresson, Pennsylvania. He grew up on a small farm which raised crops and livestock in the Appalachian Mountains of Western Pennsylvania. After high school, Garrett joined the naval air corps and had just completed training as a radio/radar operator and reargunner on a torpedo bomber when World War II ended. He served briefly on the aircraft carrier Tarawa in the Atlantic.

After the war, Garrett attended Pennsylvania State University, where he received his B.S. and M.S. degrees in animal husbandry. Courses taught at Penn State's Institute of Animal Nutrition, which housed the famous Armsby calorimeter, sparked his interest in animal energetics. The Armsby calorimeter was one of the few in the world at that time which could measure an animal's heat production. It was also one of the few large enough to accommodate an animal as large as a cow.

"In order to follow the energy balance of an animal," says Garrett, "You need to measure directly or to estimate how much heat the animal produces. There are two types of calorimeters. One is a respiration calorimeter with which you measure oxygen consumption and CO<sub>2</sub> production, and from those measurements calculate heat production. Or you can measure heat production directly. The Armsby calorimeter could do both.

Garrett came to UC Davis for his Ph.D. "My interest in animal energetics led to the development of a comparative slaughter technique



for determining the energy balance of animals based on body composition," he says. "This is done by using carcass density as the key to determine the amount of fat and protein in the animal's body. The fatter the animal, the less its carcass weighs in water. I worked out a relationship between carcass density and body composition. By knowing the body composition of an animal, you can determine how much energy is deposited or expended from a given amount of feed consumed over a known time period. We determine how much energy is stored from the feed the animal consumes, and by the difference calculate how much heat is produced. We use mathematical techniques to partition the energy from the feed into major categories of use or loss."

Garrett's Ph.D. thesis compared the energy metabolism of sheep and cattle using this comparative slaughter procedure. After completing his advanced degree, he worked at the Imperial Valley Field Station as an animal husbandman for over five years. Part of the work he conducted there continued the comparative slaughter investigations of energy metabolism. The other major research he was involved in at Imperial Valley was the effect of the hot environment on feedlot cattle production. Along with university and USDA agricultural engineers, he worked on designing corrals, shades, and pen space which would keep cattle cooler.



#### **Dr. William Garrett**

Along with Dr. Glen P. Lofgreen, Garrett helped develop the net energy system. At that time it was primarily for growing fattening beef cattle. Says Garrett, "The system we developed has been used for 15 years, and was adopted by the National Research Council as the means of listing energy requirements for beef cattle. The California feedlot industry was very supportive of our work to establish a new system of feed evaluation because they realized that the system then in use did not properly evaluate feed." One of the ways the California Cattle Feeder's Association showed support was by donating money for the construction of the university feedmill.

Garrett has continued to work on the bioenergetics of livestock and has refined the net energy system to be somewhat more suitable for different types of cattle. As a natural adjunct to studying feed use and the requirements of animals, Garrett says two other areas were important. One of these areas is the influence of breed, sex, size of the animal, and management factors on body composition, that is, the proportion of fat and protein deposited during the growth and fattening period. The other important area is the

utilization of agricultural byproducts for animal feeds.

Says Garrett, "A lot of byproducts are available in California, and many of these are suitable and have been used in feedlot diets without much information as to how valuable they actually are. In our research, as we studied energy utilization we also evaluated many byproducts available in the state: almond hulls, tomato pomace (skins and seeds), rice straw, wheat mill run (leftovers from making flour), hominy, cottonseed hulls, and other products from California's diverse agricultural industry. Many of these byproducts are of little or no use to humans, but can be useful sources of nutrients for ruminants." Garrett cautions that such byproducts must always be fed in a balanced diet.

Another area of Garrett's research has been improving the nutrient value of wheat, rice, and barley straw through chemical treatments. This work was done in cooperation with the USDA. The USDA Western Regional Research Center at Albany, California conducted the chemical treatments, and Garrett evaluated the results.

Says Garrett, "The research findings show that using either sodium hydroxide or ammoniation procedures, the digestibility of these straws can be improved. These techniques are being used in some other countries, particularly in Northern Europe and other areas which are short of feed. However, the use in this country is very limited because of the availability of much higher quality feeds at reasonable prices."

Garrett adds that although treated straw cannot compete with other feedstuffs under current economic conditions in the United States, large quantities of these straws are available. Perhaps with additional research straws can become more competitive feedstuffs. One of the reasons for Garrett's study was to find an economical use for these straws. Large quantities are currently burned in the field, occasionally creating smoky conditions which some people find objectionable.

Garrett's teaching duties include courses in animal nutrition, animal growth, and meat animal production. He has been awarded the American Feed Manufacturers Award for his research in the area of animal nutrition. Garrett has also been a member of the American Society of Animal Science for 27 years, and has served as vice president, and most recently, president.

In 1954, Garrett married Ida, a native Californian whose parents were from Denmark. The Garretts have two children, Joan and Karsen. Joan is married and is completing a Ph.D. in biochemistry from UC Davis. Karsen is a certified public accountant working at South Lake Tahoe.

## **New staff: Nancy Martin**

Working at a field station with hundreds of cattle may not be every young woman's idea of the ideal job, but for Nancy Martin, SRA at the Sierra Foothill Range Field Station, it's a dream come true.

Martin landed the job at the station after completing coursework and research for her master's degree in animal science. Says Martin, "I saw the notice for the position and just realized as I was looking at the job requirements that everything in my background matched."

Martin was unsure whether there was a chance that a woman would be chosen for the position, but



after she and several other candidates were interviewed (including one other woman), Martin was offered the job. Says Martin, "I think I got the position because I have had the practical experience and had some research background with UCD."

Martin received her B.S. in animal science from Cal Poly in San Luis Obispo after transferring from Modesto Junior College. A native of Modesto, Martin gained valuable experience by managing the game bird unit and the sheep unit at MJC. She also worked summers for the U.S. Forest Service fighting fires on 20-man fire crews. At Cal Poly she worked at the campus veterinary hospital, on the Cal Poly yearling bull trial, and with the herd management and beef feedlot projects.



**SRA Nancy Martin**

Martin came to Davis in 1982 and began work on her master's thesis on maternal behavior in sheep under Dr. Edward O. Price. Says Martin, "One reason I was interested in domestic animal behavior was because the research in this area directly relates to improving production."

At the Sierra Field Station, Martin works in conjunction with about a dozen people, most of whom are men. Martin is responsible for designing the cattle schedule coordinating the staff's work schedule with seasonal changes in research. On a typical day, she may help the herdsman give medical treatment to sick animals, participate in gathering cattle, or assist in collecting biological samples for research. Her duties also include presenting information at field days and taking students on tours of the station.

"I really enjoy every day of the job," says Martin. "I really like working outdoors half the day. I like being involved with farm advisors, public relations, and the teaching aspect of the job. It's also great to be able to keep abreast and be involved in current research and range beef production and all aspects of herd management. I don't think I could duplicate this experience anywhere."

## **Alumni profile: Tom Remington**

When Tom Remington, manager of Hartman & Williams Cattle Feeding Company in Calexico, California, received a degree in animal husbandry from the UC Davis animal science department in 1956, he probably had no idea how far it would take him.

Remington describes the animal science department then as rather small, and a close-knit group

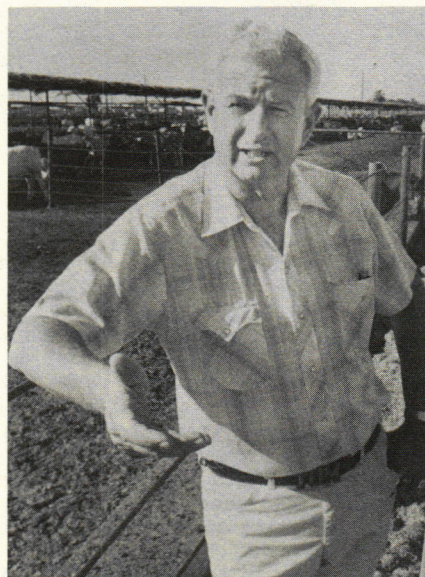
of people. "We had the opportunity to know all the professors directly," he says. "I think the chance to rub elbows with faculty was certainly something good. I had earned a B.S. in civil engineering from UC Berkeley before coming to Davis. On a campus as large as that, the only time I saw the dean was at commencement. The experience at Davis was very different. Dean Briggs was a living part of the campus, and was available to students."

Dr. Harold Cole was department chairman when Remington came to UCD, and Dr. William Weir was his adviser. "One of the professors I enjoyed very much was Dr. Perry Cupps," says Remington. Another faculty member in the department at that time was Dr. Max Kleiber, who was widely known for his work in energy studies.

In his senior year, Remington took a course from Dr. Glenn Lofgreen, and ran a feeding trial for credit and income. This association began a continuing friendship which prospered when Lofgreen became the resident animal scientist at the Imperial Valley Field Station.

Dr. James Meyer taught animal nutrition to Remington and his classmates. "I think that over the years," says Remington, "to see Dr. Meyer move to the position of dean of the College of Agriculture and then to the chancellorship is something that sits well with all animal science majors. It is also something that assures farmers and livestockmen that agriculture will maintain a strong and appropriate role on the Davis campus."

After graduating, Remington went to work for Hartman and Williams. "When I came here," he says, "the feedyard had a capacity of around 12,000 head of cattle, and feeding in Imperial Valley was still somewhat seasonal, with large numbers of cattle coming into the yards in the fall, feeding through the winter, and marketing in the spring. Feedlot occupancy was annually somewhat low in the summertime."



**Alumnus Tom Remington**

"Since that time," says Remington, "the cattle feeding industry in this area has started fattening cattle for market at calf weights beginning from 7 to 10 months of age, so feedlot occupancy is at a higher level year-round. During that time, we have rebuilt our feedmill, which is now computer-controlled. We've seen grain processing changed from the grinding of barley and



milo to steam-flaking of all grains, with wheat and corn being the principal grains nowadays."

The Hartman and Williams feedyard now has a capacity of about 24,000 head. Remington is also a partner in nearby Tamarack Feedyard, which feeds about 25,000 head of cattle.

Over the years, Remington has been president of the California Cattlemen's Association, a director of the National Cattlemen's Association for about 10 years, chairman of their marketing committee for 4 years, and chairman of the livestock committee of the Imperial Valley Field Station for about 13 years. In 1983, he was named "California Livestock Man of the Year" by the California State Chamber of Commerce.

Remington is married to the former Paula Williams, a music graduate of Mills College in Oakland. The couple has five children, two of which have attended UCD. Their oldest daughter, 25-year-old Pam Fonseca, is a nurse at El Centro Community Hospital in El Centro. Mark, 24, is a UCD graduate with a degree in agricultural economics and is employed by the Bank of America in Modesto. Todd, 21, is currently a civil engineering major at UCD, and is an aspiring member of the Aggie Football Team. 20-year-old Lori Remington is a ballet major at Texas Christian University in Fort Worth, and Wendy, 16, is a junior at Central Union High School in El Centro.

Of his degree, Remington says, "I really believe that it's done what the professors and advisers used to tell us it was going to do. It provided me with a background to understand the scientific approach to animal management and production. It taught me where to find answers, enough scepticism to require good proof of the efficacy of different products and methods before we tried to implement them here in the yard. Frankly, it has provided me with a great deal of pride that I was able to complete a degree at the University of California.

"It also provided me with avenues of ready communication with members of the animal science department and other members of the Davis faculty, which have helped me in my business over the years. I hope these avenues have also allowed me to provide some beneficial feedback to the campus and to the department since I left."



*Photo by G. Eric Bradford*

**A view of the Hopland Field Station**

## **Hopland Field Station**

The University's principal sheep research facility, the Hopland Field Station, is located in the brush-covered hills of the Coastal Range 100 miles north of San Francisco. Researchers use Hopland's substantial breeding flock to study the

effects of pasture management on meat and wool production, to develop better breeds, and to improve the survival of newborn lambs.

The station is also the site of long-term studies on range improvement, brushland management, and watershed maintenance. More than 500 species of plants and 200 species of wildlife populate the hills, woods, and meadows that make up the 5,300-acre facility.

A captive population of coyotes has been kept at the station to test scent compounds which might be used in coyote control programs to help alleviate sheep predation. A herd of some 600 to 800 deer has also provided valuable information on deer parasites and management practices beneficial to sport hunting.

Dr. G. Eric Bradford is one of the animal science faculty conducting research at Hopland. Bradford is a geneticist and has concentrated his genetics breeding experiments in two areas: the effects of selection, and crossbreeding.

Says Bradford, "The first thing we worked on at Hopland was selection for growth rate. Sheep producers and cattle producers tend to buy (select) breeding males from purebred breeders that feed their animals better than range producers. We had just such a typical purebred herd environment in the Davis campus flock, and a typical range flock at Hopland. We compared a group in which the rams were selected for high weaning weights at Hopland with a second group in which rams were selected for the same trait in a situation where feed was not a limiting factor. Both groups were compared with an unselected control group.

"We found that the environment in which selection was practiced didn't affect the outcome," says Bradford. "Lambs in both selected groups were considerably heavier at weaning than the control group. The more important result is that the selected lines declined somewhat in reproduction rate over time. We got bigger lambs but fewer of them; fertility and lamb survival were both lower. We had found the same thing in mice. Anytime you get extremes in size, etc., reproduction seems to go down."

The second main area of Bradford's research has been selecting for twinning (multiple births). Says Bradford, "Response has been slow, but we have increased the number of lambs born, weaned, and the total weight of lambs weaned per ewe. The sheep aren't as big as our growth-rate selected lines. They don't look as impressive, but they produce more. That's important because it is total lamb production per ewe that has most effect on income. There has been no selection for wool production in these lines, not because wool is not important, but because we know how to select for wool traits. Much less is known about the effects of selection for growth rate and reproduction."

Bradford's current work involves a line-crossing experiment between the weight-selected and multiple birth-selected lines to see if the characteristics of both can be combined without the disadvantages of either.

The other kind of work Bradford has done over the years at Hopland involves comparisons of different breeds and crosses, including Hampshire, Suffolk, and crossbred rams, and evaluations of Finnish Landrace crossbred ewes. "We showed that half Finnish Landrace ewes were very prolific but didn't survive very well," he says, "whereas quarter Finns were more prolific than other sheep on the station and were also well adapted. The quarter Finns are being used by some producers very successfully now."



Bradford is also looking at the ability of sheep to breed early in the season, and at different management methods. Dr. Adams of the animal science faculty and Hopland's Martin Dally are also involved in the work on seasonal breeding at Hopland and at Davis.

Bradford is appreciative of the Hopland facility. "Having a field station like that has provided an opportunity for continuity in a research program," he says, "and for doing long-term studies. It has given us good numbers of animals to work with in an environment more representative of industry conditions than is possible on campus."



**Dr. Patricia Berger**

## **New faculty: Trish Berger**

Dr. Patricia (Trish) Berger joined the animal science faculty in 1983. Berger received her master's and Ph.D. degrees from Purdue University in West Lafayette, Indiana, and her undergraduate degree from the University of Kansas in Lawrence.

During her senior year as an undergraduate, she studied the physiology and biochemistry of farm animals at the University of Reading in Great Britain. "Education in England was totally different; much more independent," says Berger. "We had an hour of lecture a day, 18 hours of lab a week, and the rest was library work. It was good preparation for graduate school."

Before coming to UC Davis, Berger spent two years as an Assistant Professor in the department of obstetrics and gynecology at USC in Los Angeles. Her research there focussed on the in vitro fertility assessment of human sperm, and in vitro fertilization and embryo culture.

Berger's present work for the animal science department involves the in vitro fertility assessment of sperm using heterologous ova (ova from a different species). In her work with human sperm, her research emphasis is possible biochemical differences in membrane proteins and acrosomal enzymes between fertile and subfertile sperm samples. The heterologous assay system is being adapted for use with porcine sperm. Berger is also involved in research concerning the transplantation of sperm and embryonic nuclei.

Berger hails from Stafford County, Kansas. Her husband, Stephen Berger, is an electrical engineer for ESL in Sunnyvale. They live in the country near Winters. The couple was recently blessed with the birth of their first child, Christopher Stephen Berger.

## **Judging Team wins honors**

Animal science Judging Team Coach Dana Van Liew is pleased with the success of the teams since they were revitalized in 1978. Van Liew, a lecturer and animal resources supervisor, also teaches the animal science 21 and 22 courses requisite for team participation.

"We field four teams," says Van Liew. "Livestock, which includes sheep, beef, and swine; horses, both halter and performance; dairy cattle; and meat animal and carcass evaluation. Many students judge on more than one of these teams, which gives them a broad background."

Van Liew describes judging contests as an all-day affair. Team members judge a class of animals in the morning and give the judges oral reasons for their placements in the afternoon. The closer their placing to that of the judges, and the closer their reasons to the judges' reasons, the higher their score. It's important that team members have a clear image in their minds of the animals from the morning, because they aren't permitted to refer to their notes when giving oral reasons in the afternoon.

According to Van Liew, judging enhances many skills, including decision-making and speaking ability. "Judging bolsters self-confidence," says Van Liew. "It's pretty difficult when you have to stand up in front of an expert and justify why you placed an animal as you did."

In addition, judging gives team members a chance to travel to ranches, farms, and agricultural colleges all over the United States, and interact with a wide variety of people. Contacts made during judging trips can be important. Van Liew says some grads have secured jobs as a result of meeting people through judging.

"Some judging team members go on to positions in livestock management," says Van Liew. "And many employers offering ag-related jobs are pleased to see livestock judging on someone's resume. When they get into the field, a judging background can be a common bond or experience."



**The animal science Judging Team**

"Our emphasis is to provide an optimum educational experience and keep the competition in perspective," says Van Liew. "Many schools run these teams like a football team. Our goal has always been a solid educational experience and a team that can be competitive."

Van Liew says the teams have seen a great deal of success in the past five years. Last year they won the Pacific International Contest in Oregon, and they have been national champions in sheep judging, and highest scoring team overall at the



Cow Palace in San Francisco. The Horse Judging Team has won the Pacific Coast Quarter Horse Judging Competition three years in a row and has had the highest scoring individual three years running. Last year the team retired the trophy.



**Administrative Assistant Geri Rippengale**

## Staff profile: Geri Rippengale

Animal science office manager Geri Rippengale is in her 28th year with the department. Rippengale, one of the few AAs on campus at step IV, came to work for animal science in 1957.

Born in Petaluma and raised mostly in the Bay Area and the San Fernando Valley, Rippengale made Northern California her home in 1956. She has two sons, Greg and Jeff, ages 28 and 29.

Dr. Cole was chairman when Rippengale joined the animal science department. Over the years she has worked under department chairmen Meyer, Heitman, Ronning, Bradford, Baldwin and Touchberry.

Rippengale recently returned from a two-month tour of Europe. "I had always wanted to go," she says. "My close friend's brother is serving with the NATO Military Committee in Brussels, so the first month we made Brussels our headquarters." The pair also visited other cities in Belgium, along with England, Holland, France, Germany, Austria, Switzerland and Italy.

"We loved Bavaria and Southern Germany," says Rippengale. "I think I climbed almost every tower in Europe, and walked over acres of marble floors in basilicas." Another high point of the trip was Salzburg, where the pair attended music festival performances and enjoyed making their way about the city.

Rippengale was especially moved by the work of Michaelangelo. "I feel he put a lot of his spiritual perception into his work," she says. She describes seeing the Passion Play in Oberammergau, Germany as one of the most impressive experiences she had while abroad.

Rippengale was also impressed by the willingness of most Europeans to offer advice and assistance. "We found by and large that people were friendly and we got along quite well. As long as you were courteous and tried to understand, people would try to help."

During her trip, Rippengale was struck by the similarities between American and European cultures. "These cities have been occupied by huge numbers of people for centuries," she says. "You're constantly being struck by how our own culture is a blending of the cultures of Europe."

Rippengale would like to continue her travels abroad. "We already have a long list of things we'd like to go back and see," she says.

## Animal science hosts International Modeling Workshop

On September 18 through 20, Dr. R. L. Baldwin and Dr. A. C. Bywater of the UC Davis animal science department hosted the Second International Workshop on Modeling Ruminant Digestion and Metabolism.

The workshop was structured along the lines of a 1979 workshop held at the Grassland Research Institute in Hurley, England. This workshop brought together scientists from a number of different countries whose work in ruminant nutrition or physiology included use of computer simulation and modeling techniques.

The workshop had about 45 registered participants and about 10-12 casual participants. Researchers came from as far away as Australia and Chile to attend the workshop.

Says Baldwin, "The idea of the workshop was to share our views and philosophy regarding modeling methods. It's a young field, developing very rapidly with a limited number of practitioners."

The objectives of the workshop were twofold: to develop agreement on major objectives, appropriate uses of models, and modeling terminology; and to provide a forum for discussion of ideas and approaches regarding methodology and model evaluation.

As in the first workshop, emphasis was given to open discussion as well as to prepared presentations. Says Baldwin, "The difference between a workshop and a symposium is that in a workshop, there are limited speakers and much more open discussion. That's why the workshop was limited in size, and because of that it's much more technical. In a workshop, you have to understand the language of the field."

The discussions were tape-recorded for the proceedings, which will be available in early 1985. The next modeling workshop will be held in approximately five years, in either Europe or Australia.



**Feedmill Supervisor Art Kaseman**

## Staff profile: Art Kaseman

On any given day at the University Feedmill located off Hutchison Drive, you can hear heavy machinery in action and smell molasses and other additives being mixed into rations for livestock feed.



Art Kaseman, feedmill supervisor, is in his 28th year at UC Davis. Kaseman attended high school in Santa Rosa and came to UC Davis as a student in 1954. In 1957, he took a summer job with the farm crew under Roy Hull, and has been working for the animal science department ever since. Says Kaseman, "If I didn't enjoy the work, I wouldn't have stayed."

For the past 15 years Kaseman has worked at the feedmill, which was constructed in the early 1960s with money donated by the California Cattlemen's Association. The adjacent feedlot, which includes a barn with 136 individual pens, was built several years later.

Kaseman is responsible for coordinating feed orders at the mill, which grinds grain and blends loose, bulk rations, and makes feed pellets and cubes. Kaseman says the mill has prepared dozens of rations over the years. He oversees the mixing of feeds for all the animal science herds, and the feeds for experiments conducted at the feedlot, which he says receive "top priority."

Kaseman and his wife, Margery, a school teacher, have four children. Robert, the oldest, is married and works in Alameda County; Jeff is married, works for Capital Feed Company in data processing, and attends Sacramento City College; Janet is a bookkeeper and currently lives in Davis; and James works at Pasa Robles as an aeronautic technician.



**Administrative Assistant Ann Mohr**

## **New staff: Ann Mohr**

Administrative Assistant Ann Mohr joined the animal science business office in September, 1983. Mohr is responsible for developing and maintaining the business office microcomputer system which stores information regarding equipment, faculty allocations, extramural and departmental accounts, and purchasing contracts.

Says Mohr, "Faculty interested in getting grants started, or in keeping up to date on their accounts" work with her.

Mohr was born on the East Coast, but did most of her growing up in the vicinity of Los Angeles. Before coming to Davis in 1973, she lived in Santa Rosa and Honolulu. She holds a degree in mathematics from Cal Poly, San Luis Obispo, and is currently working on a certificate in business data processing.

"I had started out in college with the intention of becoming a computer programmer," says Mohr.

"Somewhere along the line I found working with the computers of the 1960s to be somewhat frustrating because of the slow response time. I redeveloped interest with the introduction of the microcomputer. And I have been interested in accounting for a long time because I've always had a propensity for numbers."

Before joining the animal science department, Mohr worked for University Extension for six and a half years. "It's an invigorating and new experience to work in an academic department," she says.

Mohr held a variety of positions while at University Extension. "I worked in the registration office, in the liberal arts program, and finally in the administrative end," she says. "They were very pro-education. Employees were encouraged to seek higher education, and could take advantage of the concurrent courses at a reduced fee."

In her free time, Mohr likes skiing, both downhill and cross-country, along with reading and sewing.

## **Master adviser for over a decade**

After over a decade as master adviser of the department of animal science, Dr. R. C. Laben is stepping down from the post. Laben has been master adviser since the position was initiated about 1973.

Laben describes the post of master adviser as "a position that has not only responsibility but also a surprising amount of authority." He recalls the review of the animal science major in 1982-83 as one of the most difficult but rewarding experiences during his term as master adviser.

Says Laben, "I'm very proud of the advising system we have. I think we have been open to students and have served them with sound academic advice."

The master adviser is in charge of the advising system and the administration of courses and the curriculum. He/she is responsible for the assignment of students to faculty advisors. All of the faculty, except those having heavy loads outside the department, serve as advisers to undergraduates. According to Laben, new faculty are generally assigned between 5 and 10 advisees, while experienced faculty may be assigned as many as 35 to 40.

Faculty advisers offer students academic guidance in the selection of courses in relation to their career objectives. "The number one objective of the university is an educated person," says Laben, "with due attention to a satisfying and useful career goal."

Laben expresses appreciation for the assistance of the advising support personnel, Tricia Yates and Jim Robb. Says Laben, "The position of master adviser would be very difficult without these two people assisting with the advising/teaching budget, schedule and equipment." Of Yates, he says, "Her help has been extremely important. She has been able to take over many routine duties." Laben also praises Robb as being "another extremely valuable person in the maintenance of teaching materials, schedules, courses and details of the teaching budget. He has been able to save and recover many thousands of dollars for the department."

Laben is proud, too, of the department's student peer advisers. Peer advisers are generally senior students well-acquainted with the animal science major who know, or have agreed to become



acquainted with, each of the faculty members. Says Laben, "Peer advisers are available to assist students with routine matters, help with scheduling, and assist in student-faculty relations. They have been counseled not so much to give academic advice as to advise on opportunities open to students in animal science, campus services available, scheduling students, and so on, to save the faculty time."

Laben points to the animal science job board as one of the best on campus. "The Work Learn & Career Planning & Placement office is also closely coordinated with us," he says. "In addition, we often get job requests from the field. At each of our experiment stations there are also opportunities for internships. Our students are generally quite well-placed."

In 1982, Laben was one of three UCD professors chosen by student advisers to receive the first Outstanding Adviser Award. Award recipients were chosen based on their availability to students, knowledge of advising and department resources, willingness to help students, and concern for students.

Laben is pleased with the animal science advising system, which serves nearly 500 undergraduate students. "We do our best to make our undergraduates feel that they have a home in animal science," says Laben, "that they have opportunities, and that they take advantage of those opportunities."



**Extension Emeritus Reuben Albaugh**

## **Extension profile: Reuben Albaugh**

Reuben Albaugh, animal science extension emeritus, has experienced the livestock industry from start to finish. Born and raised on a ranch near Pittville in Lassen County, California, he learned ranching from his father, the late W. J. Albaugh. Reuben's first exposure to livestock was through the horses, sheep, hogs, and beef and dairy cattle raised on the Bar Double H Ranch.

At the encouragement of his father and teachers, Albaugh went on to earn a B.S. in animal husbandry with a minor in journalism at Oregon State University at Corvallis. While a student at OSC, he was a member of the Alpha Zeta fraternity, and the college judging and boxing teams. Upon graduation, he was employed as an efficiency expert at the Nacimiento Ranch in San Miguel.

Albaugh became a livestock farm advisor for UC's Monterey County Agricultural Extension Service in 1927. He served in this capacity for 22 years, and it was during this time that he developed his educational style for livestock producers. He combined scientific research with practical application and spread information through articles, meetings, field demonstrations and personal contacts. He supervised the 4-H Club, organized the Monterey County Cattlemen's Association and the Monterey County Cow Testing Association. He also conducted investigational work such as breeding yearling heifers and ewe lambs, finishing cattle for slaughter, and range improvement.

In 1949, Albaugh became an extension animal husbandman at the University of California, Davis, with responsibility for the livestock programs throughout Northern California. In this capacity, he has been instrumental in developing programs for recording the performance of beef cattle and sheep, the selection of replacement heifers in commercial herds, the selection of replacement ewes, studies on the effect of weight losses in marketing animals, and the selection of light horses. He has also made outstanding progress in programs for the progeny testing of beef bulls, and helped develop the California Beef Cattle Improvement Association.

The acceptability of Albaugh's programs has led to many invitations to participate in field days, judging livestock, and developing projects. During the course of his career, he has travelled to Canada, Spain and Australia.

During his years as farm advisor and livestock specialist, Albaugh has authored hundreds of bulletins, circulars, news and magazine articles and technical and semi-technical publications. He is co-author of "Beef Cattle Production," and author of "Cattle, Country & Champions" and "Horses and Men." He was also chosen by the University of California, Davis to have his memoirs set in print, and the resulting volume is titled "Campus Cowboy."

Albaugh recently discussed his life and career in the livestock industry at his Davis office where he is often still to be found. He talked first about his work with the late Dr. G. H. Hart, for whom the animal science building is named.

"When I came to Davis as a livestock specialist, I had known Dr. Hart for some time. He told me he had promised to write a book on beef cattle and wanted me to help. I said, 'I'm not your man,' but he said, 'You're the one I want.'"

"I got a sabbatical leave to write and that's all I did for 6 months. Hart said that we needed a couple chapters on range management and cattle behavior. We asked Ken Wagon to write those. We continued to write and edit this book when Dr. Hart passed away before it was finished."

Albaugh describes Hart as "A great guy, the most versatile man I ever met. From the speaking platform he had no peer."

Albaugh worked with many other prestigious animal scientists over the years. Along with the late Dr. C. M. Haring, he organized what was then the largest field experiment of its kind in the United States to test a vaccine for 'Bang's Disease.' Says Albaugh, "The vaccine had recently been developed by two USDA researchers, and Haring was interested in testing it on a large scale, both on beef and dairy cattle. He came to Monterey County where I was a farm advisor at the time. He talked to me and a county vet named C. B. Outhier."



"We lined up 4,000 head of dairy cattle and 4,000 head of beef cattle. By vaccinating these calves ages 4-8 months of age, we reduced the incidence of brucellosis from 20% to 5% in dairy cattle and from 8% to .8 % in beef. It was a 6-year study, funded through the university. A big job, very satisfying."

Albaugh also worked with the late Dr. H. H. Cole in testing stilbestrol, an estrogen compound that increases the rate of growth in cattle. "In the early 1950s, Purdue Univeristy had carried on a study," says Albaugh. "I went to Dr. Cole and put a copy of the study on his desk, and at first he wasn't interested. We went on to conduct the first field studies of this product in the United States."

"We'd have about 25-30 head of treated cattle and controls. This was done on pasture and in the feedlot. It was one of the first field tests I did with Cole. He was an excellent scientist, a top communicator. He had great compassion for his fellow man. He was a fellow you'd like to ride the river with."

Albaugh was one of the very first advocates of crossbreeding livestock for increased performance. "In the early 1940s we recommended use of Angus bulls on yearling Hereford heifers," says Albaugh. "Some of the cattlemen kept these first-cross heifers and found out that they were real mother cows. Top breeding cows, high producers. The Mile City Montana Experiment Station was conducting some cross-breeding experiments."

"I visited the station, got all the data and started talking about it. In 1949 I wrote a story for the Western Livestock Journal in which I forecast that the high performance range cow of the future would be a cross-bred. I predicted it would be bred to a bull of another breed to produce a 3-way cross calf. That prediction turned out to be right. We had data and I knew what these cows were doing. Crossbreeding was a dirty word in those times. It took 15 years of meetings, talking about it, giving demonstrations, and writing articles before it gained acceptance."

Albaugh is perhaps best known for his love of horses through the years. "I was very much involved in the remount program sponsored by the U.S. War Department," he says. "It had to do with loaning thoroughbred and Arabian stallions to cattlemen as agents to improve the light horses of the West."

Of his career with the Univeristy of California, Albaugh says, "It's been great. I don't think I'd change it. The reason is I was able to help somebody. I have a missionary spirit. I tell graduate students, 'If you're interested in extension work, you've got to be able to write well and speak well, and you've got to have a desire to help people.'"

## Peer advisor: Natasha Orloff

Students needing advice on the animal science major, courses, or careers in animal science have a friend in 181 Hart Hall. Natasha Orloff, an animal science senior and the 1984-85 animal science peer adviser, is available daily for individual counseling.

Orloff says the department has a peer adviser because they're less intimidating than professors for students to talk to. "I can help give students a head start," says Orloff, "and save the faculty advisors time by helping students ask the right questions. Plus I give a student perspective in all the advising I do. I've taken



Peer Adviser Natasha Orloff (right)

most of the classes and can relate personal experience, and that all seems to help."

Orloff grew up in the Livermore Valley. She attended Livermore High, was a member of FFA, and worked with wildlife. Says Orloff, "Outside of my high school classes, I got experience raising, training, and showing Morgan horses." Orloff has been riding since she was six. Her experience led to a job as a groom for a professional Morgan trainer in Livermore. In this capacity, she went to two grand nationals in Oklahoma City in 1979 and 1980.

Orloff is also in charge of the annual spring and fall barbecues and the monthly bulletin distributed to undergraduates. In addition, every Friday morning she invites everyone to come for coffee and donuts in her office. Orloff says she often has 20 faculty, students and staff at these gatherings.

For winter quarter, Orloff is planning a career seminar, and will soon also have animal science caps and T-shirts to sell. So if you haven't met Natasha Orloff, stop in room 181 and introduce yourself.

## Sierra Foothill Range Field Station

Nestled in the foothills of the Sierra Nevada Mountains, the Sierra Foothill Range Field Station was a working cattle ranch until it was acquired by the university in the early 1960s. Located about 20 miles east of Marysville in Yuba county, the station retains a ranch atmosphere. Much of the research there is related to beef cattle, and a herd of several hundred Herefords graze the 5,800 acres of station rangeland.

The station is invaluable to research because the terrain, soils, climate and vegetation are representative of several million acres of California land. The topography is typical of the Sierra foothills, with many gentle and steep slopes. Elevations range from just over 200 feet along the Yuba River to 2,000 feet in the upper woodlands.

Animal science-related experiments at the station involve the growth and development of calves, management systems for cattle and other livestock under foothill range conditions, animal nutrition, and the causes and control of diseases and insect pests affecting range animals.

Researchers also use the station to investigate range management; soil erosion; the effects of irrigation on the productivity of pasturelands;



and the effects of rangeland improvement on water quality, wildlife, and nutrient cycling. A portion of the station (about 270 acres) has also been set aside as a natural area to be left unmodified for research on wildlife biology.

The annual range composed of Mediterranean species is unique in the U.S. to the foothills of California and Oregon. The climate at the station is characterized by hot, dry summers and wet, relatively warm winters. As a result, most forage species grow through the winter and spring and are dormant during the warm, dry summer. This differs from most range types which grow mostly during the summer and are dormant during the winter. Consequently, cattle and range management at Sierra is different from other climate areas.

Among other station facilities are a dormitory, meeting room and picnic areas which are available for college class field trips, demonstration tours, livestock producer meetings, student work-learning programs and 4-H training sessions.

Students at UC Davis have the opportunity to get practical experience through internships at the station. Says SRA Nancy Martin, "Everyone here is available to students to help set up projects and help implement them. Our first priority is projects that researchers and students bring up."

Some of the research in range improvement conducted at the station involves oak and brush clearing. Clearing oaks to improve forage is important to the California foothills because range animal productivity increases with oak removal. Studies have shown as much as a 50 percent improvement in productivity when excess trees are removed, because they take water and nutrients from the land. However, the State Department of Forestry is concerned that the blue and interior live oaks being removed are not regenerating naturally.

According to Station Superintendent J. M. Connor, oaks as old as 400 years have been removed from station land. Says Connor, "The last year of oak regeneration on some parts of the station was in the 1940s. Ways are now being sought of artificially improving regeneration. Seedlings appear to emerge and then die because of drought or rodents feeding upon them."

Animal science faculty member Dr. James G. Morris has conducted research at Sierra for some time. Some of Morris' most recent nutrition research has examined two types of cattle feed supplementation: energy-protein, and mineral-vitamin.



*Photo by Charles A. Raguse*

**Cattle at the Sierra Foothill Range Field Station**

Says Morris, "The practice of supplementation has been advocated for many years and goes back to the pioneering work of Wagnon, Hart, and Guilbert done in the 1930s at the San Joaquin Experiment Station. That work demonstrated a dramatic response to supplementation in cattle. Unfortunately, there has been little or no work since then to define an optimum level of supplementation."

"There are two major ways from the nutritional point of view to increase animal productivity," says Morris, "to increase the quality of pasture, or to provide nutrients deficient in feed at critical times of year. Most of the work we have done has been in the latter area, whereas work by agronomists is in the former area. In order to conduct research in this area, the characteristics of the diets consumed by the animals must be known."

One of the studies Morris has conducted measured the composition of the diet by using steers with esophageal fistulae to harvest samples. These fistulae allow a portion of the food swallowed to be deposited in a bag for collection. In order to supplement animals effectively, Morris and his researchers are studying how efficiently the supplement is being utilized by the animals in order to increase the number and weaning weight of calves produced.

"We've undertaken some measurements supplementing cattle on the range with selenium and salt," says Morris. "The uniformity of supplement intake is very low. Where you place the supplement seems to be quite important in relation to the distribution pattern of the supplement."

Morris is also attempting to define the optimal level of feed supplementation of breeding beef cows. In one study, breeding cows on the range are given five different levels of supplementation. Says Morris, "What we're trying to do is define an optimal level considering the criteria of 1) response of the animals, 2) cost of the supplement, and 3) nutritional value of the supplement."

"We've fed groups of cows one of the five levels of supplement during fall and winter and measured the response in the number of cows conceiving, and the number and weight of the calves weaned. With the exception of one year, there has been no response in the conception rate of cows to supplementation. Supplements produced heavier calves, but the additional weight of the calves would not offset the cost of the supplement."

Morris is also conducting parallel studies to determine the energy expenditure of cows on the range and to define the maximum and minimum periods of energy expenditure and energy intake. This is done by a continuous infusion of a solution of sodium bicarbonate containing radioactive carbon.

"By infusing this radioactive carbon into the animal," says Morris, "You get a measurement of the carbon dioxide production rate. This new technique, when carefully used, gives very reproducible results from one day to the next. We have shown that for fall-calving cows the energy expenditure is closely correlated with feed quality."

Other aspects of animal nutrition are also being examined by Morris. "We're only in the early stages of finding out what happens to the grazing behavior of the animals when they are supplemented. We want to find out the changes in grazing or ruminating patterns with supplementation."



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