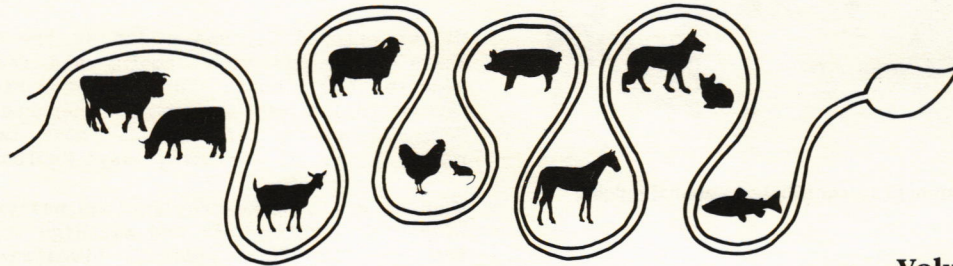


TALES AND TRAILS



Volume 2, Number 2

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

Dear Friends:

This issue of *Tales and Trails* highlights the achievements of the Animal Science judging teams and the meat science courses available through the Animal Science major. Judging activities give students valuable animal experience outside the classroom. Some of our most prestigious alumni are former judging team members.

The meat science courses form an important part of the Animal Science curriculum. These classes give students the chance to examine the final link in the meat animal production chain from the consumer's point of view.

Animal Science faculty continue to garner some of the animal industry's most prestigious awards. Other faculty have been successful at obtaining sizable research grants.

There are many exciting research projects underway in the department, including work on a gene found to produce rapid growth in mice, and contraceptive research for cattle and sheep.

The departments of Animal Science and Food Science and Technology co-hosted the annual American Dairy Science Association meeting this summer, an experience which brought us closer together and we hope made the event more enjoyable for our guests.

Other articles focus on valuable Animal Science and Animal Science Extension faculty, staff, graduate students, visiting scholars, and events.

If you have suggestions for future articles, please contact our Editor, Suzanne Jones, or me.

Sincerely,

R.W. Touchberry, Chair
Department of Animal Science



Wesley Jamison continues to contribute to animal judging

Judging still important to Animal Science alum

A reporter for the San Francisco Chronicle once said Animal Science alumnus J. Wesley Jamison wore three hats: one for being an outstanding agriculture teacher at Santa Rosa High School, one as a manager of the Sonoma County Fair, and one for raising purebred Hampshire sheep.

Jamison is a truly outstanding alumnus. In 1968, he was bestowed the unusual honor of a resolution from the California Legislature acknowledging his achievements during 37 years at Santa Rosa High School, and his contributions to agriculture.

The same year, he also won the first Outstanding Service Award at San Francisco's Cow Palace. In 1983, he was named the California Sheepman of the Year in recognition of his leadership in the sheep industry and his contributions to the promotion of lamb and wool.

Jamison says he appreciates the education he received at UC Davis, adding, "the Animal Science faculty assisted me with all my activities."

His sheep career began on his family's ranch in Bennett Valley, which had 600 head of predominately Shropshire ewes. Wes assisted in upgrading the flock by adding purebred Hampshire and Dorset stock.

Over the years, Jamison has excelled at judging animals. He attended Santa Rosa High School, and was on the Livestock Judging Team which won the 1923 state championship. The same year, the team competed at the International Livestock Exposition in Chicago. He was only 15 when he was judged High Individual in the state, and was also ranked 3rd highest in the nation in a 4-H judging contest.

In addition to his judging activities, Jamison was an editor of the school yearbook, was active in FFA, and was in the California Scholarship Society. He accomplished all this in addition to milking cows before and after school.

Although his father wanted him to attend Iowa State University, Jamison says, "After spending time at Davis during judging competitions, I wanted to go there."

Gordon True was head of the Animal Husbandry Department, as Animal Science was known when Jamison was an undergraduate from 1926-1930. At the time, Elmer Hughes was coaching the Davis judging teams and was in charge of the swine unit. Robert F. Miller was in charge of the sheep barn.

Miller offered Jamison a job at the sheep barn, where he helped with lambing and feeding. He received \$30 a month and a room for his services. George Philip was the campus shepherd, and Alex McDonald was a herdsman. "Those two Scotsmen really taught me the most," says Jamison.

When he was a sophomore, Jamison was on the Davis Livestock Judging Team and was High Individual at the Pacific International Livestock Show in Portland, Oregon. The following year, he was High Individual in judging both dairy cattle and dairy products at the show.

"There was something exciting every week at Davis," recalls Jamison, who was president of the Philo Delphos fraternity house for two years. He was also editor of the Davis yearbook, and was in the ROTC, graduating with the rank of major.

Jamison graduated in 1930, during the depression. At first he helped on the family ranch. "My father wasn't happy to have a college graduate home milking cows," he says. Shortly thereafter, the principal of Santa Rosa High School asked if he would like to attend a training program for agriculture teachers. He agreed, and was hired after he finished the course. "Santa Rosa High School seems to attract good students," says Jamison. "I never had a student that I didn't see something good about."

In addition to teaching, Jamison coached the Santa Rosa Dairy Products, Livestock, and Dairy Cattle judging teams. In 1934, the Dairy Cattle Team won the National FFA Championship in Kansas City. He also had two Dairy Cattle teams win state championships in California, and two Livestock teams win the National Championship at Kansas City. On three occasions the Dairy Products teams won gold medals in Waterloo, Iowa.

When Jamison retired from teaching in 1967, he had the outstanding flock of Hampshire sheep in California. Three years earlier when he showed them at the National Show at the Cow Palace, he had the Grand Champion Ewe, Ram, and First Prize Hampshire Ewe Lamb. Over the years, he has owned 2,000 registered sheep.

Jamison has assisted with the Sonoma County Fair for 50 years, 1936-1986. For a number of years he was the livestock manager, and now serves as an honorary fair director. There is a judging ring named after him at the fair, the Jamison Arena. The fair also offers the J. W. Jamison Perpetual Trophy annually for the outstanding young livestock rancher.

Wes's wife Vera is a former nurse and graduate of Santa Rosa High School. The Jamison's daughter Joanne graduated from UCD, where she majored in education and history. She now lives in Carmichael, and has a son, Kent.



Recent judging team winnings

UCD judging teams continue to excel

The Animal Science Judging teams have continued to bring home the gold from competitions throughout the state. All the UCD teams fared well at the collegiate competitions at the Great Western Livestock Show in Los Angeles this year.

The Horse Judging Team performed exceptionally well at the show's Pacific Quarter Horse Association Collegiate Horse Judging Contest, winning 1st and 3rd High Team Overall and 1st and 2nd High Team in Oral Reasons. Donell Howser was both High Individual Overall and High Individual in Reasons.

The Dairy Cattle Judging Team took 2nd High Team Overall at the Collegiate Dairy Cattle Judging Contest.

The Livestock Judging Team was 3rd High Team Overall at the Collegiate Livestock Judging Contest. Tom Sampson was 5th High Individual Overall.

The team was also 2nd High Team Overall and 2nd High Team in Oral Reasons at the 1986 Dixon May Fair Collegiate Livestock Judging Contest. Tom Sampson was 4th High Individual Overall, Debbie King was 6th, and JoMay Chow was 7th.

What can you say in response to so many wins, except, "Keep up the good work!"

Garrett honored with two awards

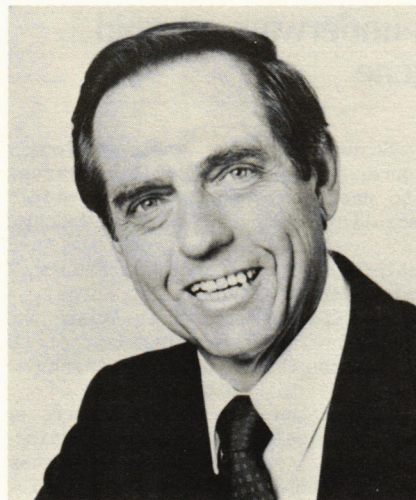
Dr. William N. Garrett has the unusual distinction of recently being honored with two highly prestigious Animal Science awards. In July, Garrett was presented the Morrison Award by the American Society of Animal Science, and the Distinguished Service Award by the society's Western Section.

The Morrison Award is presented annually to an ASAS member in recognition of outstanding contributions to the field of Animal Science. It is named for F. B. Morrison of Cornell University, a pioneer in animal nutrition. The last UC Davis scientists to receive the award were the late Dr. Max Kleiber and the late Dr. Harold Cole in the early 1950s.

Garrett was presented the award, which includes a plaque, a watch, and \$3,500, at the ASAS annual meeting at Kansas State University.

Garrett received the WSASAS Distinguished Service Award at the organization's annual meeting in Corvallis, Oregon. The award recognizes members who have made the most outstanding contribution to animal agriculture in the West. It is considered the most prestigious honor the Western Section can bestow.

Animal Science Professor Emeritus Dr. Perry Cupps is a past recipient of the award, which includes an inscribed plaque and two framed portraits.



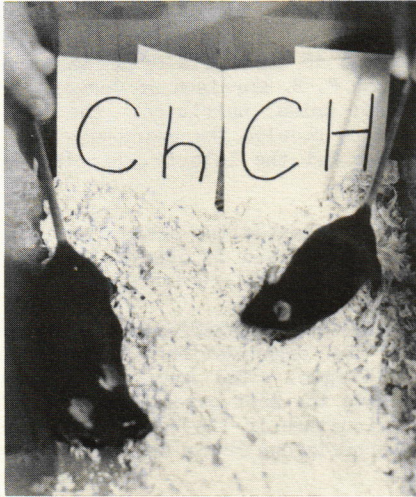
Dr. William N. Garrett

"Anytime you are selected by your peers to receive special recognition for your work it's a great honor and I very much appreciate the awards," says Garrett. "Anyone who gets an award has not done the work alone. I'm very grateful for the assistance of students, colleagues, staff, and family."

Garrett's three main areas of research are the energy metabolism of ruminants, the influence of nutrients on body composition, and the utilization of roughages and byproduct feedstuffs.

Several of Garrett's publications related to energy metabolism are among the most frequently cited references pertaining to Animal Science. One, written in conjunction with J. H. Meyer and G. P. Lofgreen, has been determined one of the three most cited papers in the Journal of Animal Science.

The paper, titled "The comparative energy requirements of sheep and cattle for maintenance and gain," has been named a Citation Classic by the Science Citation Index, along with another paper written by Garrett and Lofgreen.



The rapid growth gene produces mice 35-50% larger than normal

Research underway on rapid growth gene

Five Animal Science faculty and two from other departments have been involved with research on a gene found to produce rapid growth in mice. The mice under scrutiny are 35-50% larger than normal.

Animal scientists Eric Bradford, Tom Famula, Chris Calvert, Juan Medrano, and Trish Berger, along with Dr. Kirk Klasing of the Avian Science Department and Dr. Marylynn Barkley of Animal Physiology have contributed to the research.

Bradford discovered the gene several years ago in mice that had been selected for postweaning gain for 51 generations. Although single genes for genetic traits such as dwarfism had been previously found, this was the first documented discovery of a gene for rapid growth.

Experiments are currently underway to determine what the gene does and doesn't do. The researchers are looking for its exact location among the 20 pairs of chromosomes found in mice, and the mechanism through which it works.

"Growth is a complex biological process, and most of the work done so far is descriptive in nature," says Famula. "What is the gene coding for, or is there a missing gene? We want to know how it manifests itself in growth. Where is it making its influence? Which metabolic pathways should we examine further?"

So far, the scientists have conducted body composition experiments to see if the mice have more fat, and discovered they have the same body composition as normal mice. Next they studied growth hormone, and found the mice do not have elevated GH levels.

When they looked at the utilization of feed efficiency, however, they found the mice are more efficient at growth. They have a lower maintenance requirement, and are also more efficient at using food.

One of the problems with the mice possessing the rapid growth gene is that they are not as healthy as normal mice. They have reduced fertility and survival rates, which has encouraged the researchers to examine their immune response.

At this point, the impact of the gene on animal agriculture is indirect, says Famula. "It is valuable in studying the genetic control of growth. As a result, we may be better able to construct breeding programs for more efficient growth. The ultimate result might change the selection criteria of animals."

Whatever the UC Davis researchers find, they're likely to have exclusive results. No one else has access to these mice. They're only available here.



The Norwegian Institute of Aquaculture Research

Gall returns from Norway

Aquaculturalist Dr. Graham Gall recently returned from Suundalsøra, Norway, where he spent a week lecturing on quantitative genetics as it applies to fish improvement, and visiting salmon and trout farms. Gall was one of three invited lecturers at a genetics workshop for fisheries and aquaculture biologists sponsored by the Scandinavian Association of Agricultural Scientists.

The workshop was designed to introduce fisheries biologists unfamiliar with animal breeding to salmon and trout selection and breeding schemes. Participants came from Finland, Iceland, Norway, Denmark and Sweden. Gall spent two days touring Norwegian salmon and trout farms and consulting with the Norwegian Institute of Aquaculture Research and Norwegian Fish Farmers' Association.

Gall also recently received two large grants for research to be conducted during the next three years from the California Department of Fish and Game. He has been granted \$849,000 to assist in developing improved methods of regulating the Chinook salmon industry.

This research will be conducted in conjunction with Dr. Marc Mangel, Chair of the Department of Mathematics. The objective is to provide a real time procedure for monitoring the rate of harvest of salmon, beginning with the Smith, Eel, and Klamath rivers.

Gall has also received \$306,000 for developing breeding schemes to improve the efficiency of rainbow trout production. This work began in 1970, and is being carried out in cooperation with California Department of Fish and Game Broodstock Hatcheries.

Gall's past research in this area has resulted in a selection program leading to a 95% increase in the number of eggs produced and a 110% increase in the average weight of fish over the last ten years for three stocks of rainbow trout.



Dr. Yu-Bang Lee Photo by Gary Beale

Lee lends consumer awareness to Animal Science

Animal Scientist Dr. Yu-Bang Lee has some advice for prospective Animal Science students at UC Davis.

"I suggest every student take at least one meat science course," says Lee. "Students should have some feel for what kind of products we produce. In order to sell them, we need to know what is valuable to consumers. And we need to know what to produce to survive as an industry. Without that, we wouldn't have animal production."

Lee currently has two main areas of research based on consumer demands in meat products - good taste, high lean-to-fat ratio, and low price.

The first area he is interested in is increasing the lean content in meat. He is currently examining how muscle grows and develops. A series of experiments is now underway on beta agonist, a drug which increases muscle mass and decreases fat.

"We want to know the mode of action of beta agonist, so in the future we can induce muscle growth without using drugs," says Lee. This work is being conducted in conjunction with Animal Scientists Dr. C. R. Ashmore and Dr. Bill Garrett.

Another area Lee is exploring is how to improve meat quality after slaughter. He is experimenting

with manipulating meat pH and temperature, which affects the postmortem biochemistry of muscle, and consequently meat quality. He is also experimenting with ginger, which is very effective in tenderizing tough cuts of meat.

Lee attended the College of Agriculture at Seoul National University in Korea, where he majored in Animal Science. He worked on the university farm under the direction of Professor Bong Kug Ohh.

Korea had few foreign-trained meat scientists at the time, so Lee decided to study meat science in the United States. He applied for graduate studies to the University of Wisconsin, Madison which then had the strongest meat science program in the U.S.

Dr. Robert Kauffman was Lee's graduate advisor at Madison, where he received an M.S. in meat science, and a Ph.D. in meat science and biochemistry. His dissertation was on the development and growth of adipose tissue.

"The main difference between the Korean and American systems of higher education is that U.S. universities are structured to have strong graduate programs," says Lee. Consequently, many Korean students come to the U.S. for advanced degrees.

After graduating, Lee worked as a Senior Research Chemist at Campbell Institute for Food Research in New Jersey, where he was primarily involved in the improvement of the palatability and tenderness of broiler chickens.

He returned to Korea in 1978 to head the Animal Products Lab at the Korean Institute of Science and Technology in Seoul.

"I wanted to serve my own country in the area where expertise was most needed - meat science," he says. He helped establish the institute's laboratory, and conducted two main areas of research: establishing national priorities in the food animal supply and solving industry-related problems.

"Government policy dictates many things in Korea," says Lee. "At the institute, we wanted to know what the consumers wanted, and also studied the quality and wholesomeness of animal products processed under current Korean technology."

Lee realized that serving his country had a price, however. Wishing to stay abreast of his profession, he decided to return to the United States. In 1981 he moved his family to Davis.

"UCD has a good reputation among agriculture schools, and I always wanted to come to California," he says. "My family and I love Davis, both in terms of professionalism and family life."

Lee has authored two books, *The Science of Meat and Meat Products*, and *The Science of Animal Products*, and is co-author of *The Analysis of Meat Products*.

He and his wife Joung have three children, ages 11, 12, and 14. Lee is very active in the Sacramento Korean United Presbyterian Church, where he is an Elder and chair of the Mission Committee.



Animals immunized against GnRH no longer ovulate

New contraceptive method shows promise

Animal Scientist Dr. Tom Adams is conducting contraceptive research of great potential interest to animal producers. His work involves immunizing sheep and heifers against gonadotropin-releasing hormone (GnRH). Animals immunized against GnRH no longer ovulate or show signs of behavioral estrus.

These findings are especially important to the beef industry. While a high proportion of heifers (3 million annually) are sold to feedlot owners, they command a much lower price than steers when marketed. About a quarter of these heifers are pregnant when they are sold to feedlots, increasing the labor and management costs of feedlot operators. The behavioral signs of estrus are also undesirable because increased activity results in reduced feed efficiency.

Ranchers employing the new contraceptive method should be able to realize at least a \$60 per animal gain, says Adams. "When combined with a growth implant, animals show an increased feed efficiency of 0.3 pounds per day in the feedlot."

The most popular feedlot contraceptive methods currently used are surgical removal of ovarian tissue and feed additives that suppress hypothalamic and pituitary function. According to Adams, the new GnRH immunization procedure would be less traumatic and more efficient than these two.

"GnRH immunization is a reversible contraceptive that might in the future permit animal producers to more accurately control the timing of breeding and pregnancies," says Adams. The immunization is given in a single injection in which the immunogen is emulsified in a thick oil-water mixture and slowly absorbed by the animal.

Adams plans a field experiment in conjunction with Livestock Farm Advisor Monte Bell and a Tehama County beef producer. 100 of the rancher's heifers will be immunized and the results compared with the reproductive function and feedlot performance of 200 control heifers.

Another experiment already underway will determine whether or not GnRH immunization can block the onset of puberty in heifers and prevent inadvertent pregnancy.

These studies have been conducted in conjunction with Dr. William Garrett, SRAs Betty Adams and Sarah Davis, and former Animal Science Extension Specialist Rich Benson. Adams plans future research with Dr. Yu-Bang Lee and Cole Facility Staff Supervisor Dan Sehnert to compare the effect of immunization on carcass composition and quality.

Dairy Goat Research Facility installs new equipment

The UC Davis Dairy Goat Research Facility, sponsored by the Department of Animal Science, has installed state-of-the-art milking equipment in its present location. In two years, the department hopes to build a Grade A dairy for the production of goat milk. Plans have already been drawn up and a site chosen for the new facility.

Currently, the facility has a herd of approximately 115 goats, including representatives from each of the breeds. The breeding program consists primarily of French Alpines, and there are quite a few Nubians for tropical agriculture-related experiments.

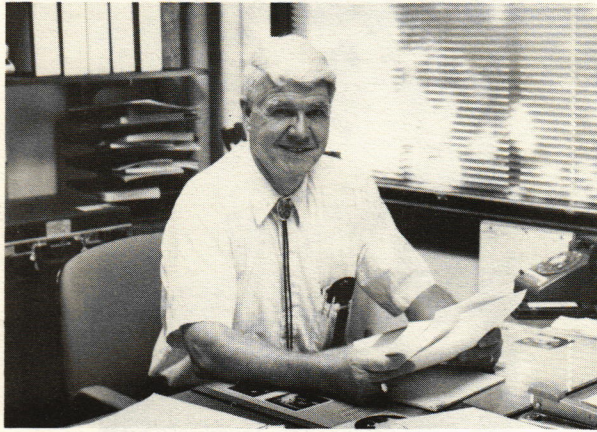
Experiments are currently being conducted by a number of researchers, including the facility's Faculty Supervisor, Dr. Dan Brown. Brown's work involves the regulation of body nutrient reserves, and factors limiting food production from tropical forages and byproducts. Other projects underway involve embryo transfer techniques, conducted by Dr. Gary Anderson, and behavior trials.

The latter are being conducted by David Lyons, a graduate student of Dr. Ed Price. Lyons is examining the effects of kids raised by human-reared dams versus those reared by wild dams.

The 1986 recipients of the Dairy Goat Research Facility mini-grants are Bob Sequeira, studying milk protein instrumentation; Dr. Trish Berger, studying buck fertility and alternative fertility tests; Dr. Ed DePeters, studying the effects of feeding dietary fat on milk protein; Maura Schwartz, studying milk protein genotypes in dairy goats; and Roberta Cook, studying California goat cheese marketing systems.



Angora goats at the DGRF



Extension Specialist Frank D. Murrill

Animal Science Extension Specialist Frank D. Murrill

Extension Dairy Specialist Frank D. Murrill took charge of the Dairy Herd Improvement program, then sponsored by the University of California, in 1968. The program involves the collection of dairy cow performance records and the dissemination of information to dairymen for dairy herd management.

"The California Dairy Herd Improvement Association is now responsible for the service and operational aspects of the program, while UC is responsible for education, research, and genetic evaluation," he says.

Murrill was born and raised in Hillsborough County near Tampa, Florida. His parents had a diversified farm and raised oranges, livestock, vegetables, and strawberries.

The Murrills came to California during World War II. After graduating from high school in Oakland, Frank joined the army. He spent a year in Korea in the infantry.

Upon being discharged in 1946, Murrill attended UC Berkeley, where he studied agriculture and forestry. He came to UC Davis in 1950. "At that time, you couldn't get an agriculture degree unless you came to UCD," he says.

Before finishing his studies, Murrill returned to Florida and raised beef cattle and swine for several years. In 1956, he reenrolled at UCD, studied dairy science under Dr. Robert Laben, and received a degree in Animal Science under Dr. Magnar Ronning.

After graduating, Murrill became a farm advisor for Kern County Cooperative Extension. In 1964, he returned to UCD for a master's degree in Animal Science.

Murrill spent a sabbatical year at the USDA in Maryland in 1973, where he served as national DHIA coordinator. In 1982, he went to New Zealand to work with the New Zealand Dairy Board and the New Zealand Livestock Improvement Association on record performance and dairy management.

He is also the Extension liaison with the dairy goat industry. Along with Animal Science's Dr. Eric Bradford, he helped establish the UCD Dairy

Goat Research Facility in 1979, and was responsible for initiating California Dairy Goat Day, now in its 12th year.

"The dairy goat industry is still a fledgling, cottage industry," says Murrill. "I'm working with people to improve their husbandry practices, and develop new technologies and marketing approaches. We are currently working to form a marketing association to help improve the stability of the industry."

Some of Murrill's current research includes the Integrated Reproduction Management (IRM) program, which is conducting a total performance evaluation of 15 dairy herds. He has also served several terms as Unit Coordinator for Animal Science Cooperative Extension.

Frank's wife Ruth is an elementary school teacher at Fairfield School in Davis. They have three children: Steve, Kathy, and John, all of whom are involved in some aspect of agriculture.



Over 1800 attend ADSA meeting

June 23-26, the UC Davis departments of Animal Science and Food Science and Technology hosted the 1986 meeting of the American Dairy Science Association. The organization last met at UCD in 1952. Over 1800 people from throughout the United States and abroad attended the meeting, which included symposia and papers on dairy animal production and dairy foods, and excellent student affiliate, spouse, and youth programs.

In his ADSA program address, UCD Chancellor James Meyer said, "The Davis campus is...well known for research in the conventional fields of animal nutrition, physiology, and genetics, and more recently for research in embryo transplants and the ability to determine sexes of embryos with a high degree of accuracy. UCD has played a major role through the years in helping keep California a leader in the industry and the second largest dairying state in the nation."

During the meeting, UCD Animal Science Extension Dairy Specialist Dr. Donald L. Bath assumed his new post as 1986 ADSA president. Bath has B.S. and M.S. degrees in animal husbandry and a Ph.D. in nutrition. He is recognized internationally

for his work in the development and implementation of computerized programs for ration formulation and feeding management of dairy cattle.

"In general, the meeting was extremely successful," says Bath. "Everything seemed to go smoothly. I think it was partly due to the hard work of the co-chairs."

Some highlights of the meeting included the Miles Marschall International Award Lecture presented by Dr. Gordon C. Cheeseman, head of the Food Research Division of England's Agriculture and Food Research Council; a presentation on the impact of the Dairy Termination Program on the U.S. dairy industry by Dr. L. S. Mix of Agway, Inc., Syracuse, N.Y.; and a discussion on the development of dairy centers at academic institutions by Dr. Marlin Harmon of the National Dairy Promotion and Research Board and Dr. Joe O'Donnell of the Dairy Research Foundation.

Special tours during the conference included visits to Sacramento and San Francisco. Post-conference tours included dairy farm and dairy food processing plant tours, and wine tours of Napa Valley.

Many faculty and their spouses and staff members of the Animal Science and Food Science and Technology departments unselfishly contributed their time and talents to make the Davis meeting a success.

The 1986 California Cattle Feeders' Day

Cattlemen at the 1986 California Cattle Feeders' Day heard animal scientists and extension specialists present their research findings in a number of areas. The field day, which was held at the Imperial Valley Agricultural Center in El Centro, included talks by Animal Science faculty Lee Baldwin, Yu-Bang Lee, and Richard Zinn, and Animal Science Extension Specialist John Dunbar.

Dunbar spoke on "Sex Discrimination in the Beef Chain," and addressed factors affecting the difference in marketing beef from bulls, heifers and steers. While consumers want leaner cuts of beef, he says current beef grading standards actually discriminate against lean carcasses. He also stresses the importance of slaughtering beef animals at the desired carcass finish rather than the number of days they have been in the feedlot.

Ruminant animal agriculture must improve in efficiency, or its place in the market will diminish, said Baldwin in his talk, "Potential Products for Use in Meat Animal Production." Research on the role of hormones and other agents in protein synthesis and degradation has created opportunities for substantial increases in production efficiency in the near future, he says.

Lee presented his findings by a trained taste panel comparing samples of beef from Holstein, British crossbreds, Brahman, and boxed beef from the Midwest. The surprising news was that steaks



Photo by Gary Beale

Dr. Richard Zinn (far right) explains electrical anesthesia

rated USDA "Good" from Holsteins, usually thought of as a dairy breed, were judged more tender and just as tasty as USDA "Choice" steaks from British crossbred steers. Feeders' Day participants were asked to give their opinions on British crossbred "Choice" and Brahman crossbred "High Good" beef samples. The results: "Consumers can tell the difference," says Lee.

Zinn, the Animal Science faculty member stationed at Imperial Valley, gave short presentations of his research findings on calf processing, protein and manger space requirements, implanting, and diet supplementation with fats and alfalfa presscake.

Participants were treated to a tour of the center and ongoing experiments, and a barbeque lunch. Bill Brandenburg of Brandenburg Feedlot moderated the event.

Perkins was a groundbreaker in agriculture

Ph.D. student Anne Perkins was one of the first women in the state to join the Future Farmers of America. At the time, FFA was an all-male organization. "In the early 1970s, my mother battled to allow me to participate," she says. "That was when women took sewing and cooking and men took agriculture. Now there are probably more women than men in FFA."

Perkins grew up in Santa Clara County, and has always been interested in animals. She started raising guinea pigs, and became interested in horses and livestock through 4-H.

When 4-H held its annual convention in Davis, Perkins represented her local club. UC Davis made an impression on her, and she chose to come here for her undergraduate degree. She graduated in 1975 with a B.S. in zoology.

The following year, Perkins took a Bixby Internship with the Bureau of Land Management. She worked as a technician during the wild horse roundup in Susanville. "I met some high powered



Graduate student Anne Perkins

scientists studying the physiology of wild horses and decided I really wanted to go on to school and study feral horses," she says.

Perkins studied feral horses under Dr. Jay Kirkpatrick at Montana State University, Bozeman. She received a master's degree in Animal Science in 1982.

For the next three years, she worked for the Lewis and Clark County Extension Service. "I really enjoyed the rancher-university interface, and decided to return to school for a Ph.D. to advance my career in agriculture," she says. "I would like to return to Montana and work as an Extension livestock specialist."

At UCD, Perkins is studying under Dr. Edward Price. In Montana she had heard of Price's research using stockingettes to encourage ewes to foster bum lambs.

"The kind of research he's doing is already being applied and becoming valuable to producers," she says. "I want to look at the management of the whole animal. Behavior is one of the only sciences that deals with the animal completely."

Perkins is also impressed with the the Animal Behavior Graduate Group, which includes the departments of Animal and Veterinary sciences, Wildlife and Fisheries Biology, Psychology, and Zoology. "We have a network of faculty to assist us in learning animal behavior," she says.

Perkins' research will involve reproductive performance and behavior in sheep. Price is currently studying reproductive performance in rams.

"I plan to do follow-up research on why some rams are not high sexual performers," says Perkins. "We are interested in mate choice, why females prefer a particular ram, or why a ram would prefer a particular female."

Perkins has only good things to say about returning to UCD for graduate studies.

"My impression is that the broad scope of the professors here allows students to get an excellent education. Davis is one of the best schools in agriculture in the nation, so if students want to get expertise in any area, they can probably get it here."

Laben honored at retirement dinner

Approximately 200 people attended a retirement dinner and "roast" in honor of Dr. Robert Laben in June. Laben, a dairy scientist, was a member of the UC Davis Animal Science faculty for 36 years. He received a B.S. in animal husbandry from Cornell, a master's degree from Oklahoma A & M University, and Ph.D. in animal breeding and genetics from the University of Missouri.

After a barbeque dinner, Laben was remembered by his former students and colleagues, Dr. Perry Cupps, Granville Hutton, Diane Harris, Dr. George West, Frank Murrill, Tom Sawyer, Clem Pelissier, Dr. Lee Baldwin, and Dr. L. J. "Calvin" Koong.

Laben, an excellent marksman, was presented with a gift of two gun cases. At Cornell, he had coached the men's and women's rifle teams, and has worked as a hunter safety instructor for the California Department of Fish and Game for 22 years. Other gifts included carry-on flight luggage and gloves.

Laben will continue to contribute to the department as a professor emeritus. He and his wife Dorothy, well known for her charitable work in this area, have four children.



Dorothy and Bob Laben

Cornell emeritus visits UC Davis

Dr. Charles R. Henderson visited UC Davis spring quarter to teach Animal Science 298, a course in the applications of linear models to animal breeding. He is the author of a book by the same name.

Henderson taught a similar course here in 1981. He was invited by Animal Science Department Chair R. W. Touchberry, with whom he was a graduate student at Iowa State University. "In 1948, Touchberry went to the University of Illinois, and I went to Cornell," says Henderson. "We were the pioneers in dairy cattle breeding from Iowa State. We started the modern era of dairy cattle breeding in the U.S."

For 28 years, Henderson was on the faculty at Cornell University. "Cornell and Davis are regarded as two of the best Animal Science departments in the country," says Henderson. "Both have a strong emphasis on research, and both have strong graduate and undergraduate programs.

As an undergraduate, Henderson majored in animal husbandry at Iowa State University. He earned his master's degree in animal nutrition at Iowa State, then decided to go into Extension work. He spent five years as a county agent.

"Extension in agriculture is of paramount importance," says Henderson. "At Cornell, Extension and the Animal Science Department are integrated. There's never been a time when Extension is more needed than now. It has made American agriculture the best in the world. If we're going to maintain this kind of leadership, we have to remain strong in Extension."

Returning to Iowa State, Henderson earned a Ph.D. in animal breeding and genetics. In 1948, he invented the mixed model method of best linear unbiased prediction, also known as BLUP.

Henderson has pioneered many other major research methods for estimating genetic parameters in unbalanced data. These are needed in designing breeding and herd evaluation programs.

From 1948 to 1976, he conducted research and taught advanced animal breeding at Cornell. He was a Senior Fulbright Research Scholar in New Zealand during 1955-1956. Over the years, he has trained more than 50 doctorate students, and an even larger number of master's students and postdocs from all over the world.

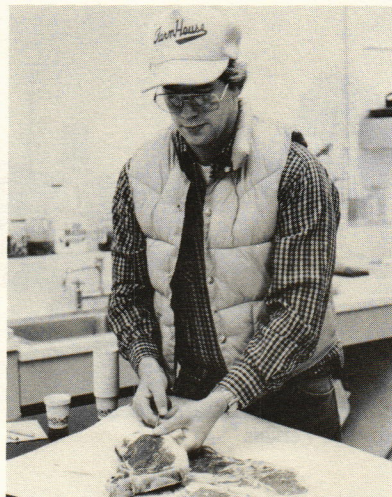
Henderson has been honored with numerous awards. He is the only animal scientist in the American Statistical Association, and is one of only three living animal scientists in the National Academy of Sciences.

Meat science courses round out Animal Science curriculum

UC Davis Animal Science students interested in meat science can get a solid background by taking Animal Science courses 120, 120L, 133, and 210, taught by Dr. Yu-Bang Lee or co-taught by Lee and Dr. Everett Bandman of the Department of Food Science and Technology.

Course 120, Principles of Meat Science, deals with the basic structure, physiology, biochemistry, and microbiology of the muscle system, along with practical aspects of meat, such as fresh and processed meat technology and preservation.

Students enrolling in 120L, the lab portion of the course, look at the anatomy and microstructure of muscle fibers and analyze the chemical constituents in meat and basic muscle properties. Field trips to processing plants help them learn the basic steps in meat processing.



Meat science students gain practical experience

Animal Science 133, Meat and Meat Animal Evaluation, relates the characteristics of market animals to the quality and quantity of meat. Students learn to evaluate market animals and select those that will produce the most acceptable product to consumers.

Students in Animal Science 133 spend six hours in the laboratory, and get practical experience evaluating animals and carcasses in the field and packing plant. They also learn how pre- and post-slaughter treatment and handling affects meat quality, and test palatability by cooking and tasting meat for tenderness, juiciness, and flavor.

Course 210, Advanced Meat Science and Technology, takes a more in depth look at postmortem biochemistry and the biological basis of tenderness and meat quality. The course covers the basic chemistry of meat curing, the meat emulsion system used in some lunchmeats, and new concepts in fresh meat processing technology. The importance of energy efficiency in marketing meat products by utilizing new technologies of smoking, cooking, cooling and packaging are also emphasized.

Students can also learn many practical aspects of meat science by taking an internship at the Cole Facility. About half a dozen internships are available each quarter. Interns learn about slaughter and the handling of carcasses, the fabrication of carcasses into retail cuts, and quality control and sanitation.

Students who have taken Animal Science 133 are eligible for the Meat Judging Team, which competes twice annually. The team competes at the California Intercollegiate Meat Judging contest and at the Western States Meat Animal and Carcass Evaluation in Twin Falls, Idaho. "The Judging Team is a very good experience for students," says Lee.

According to Lee, there are about 600 meat processors in California, the most in the country. Job possibilities for UCD Animal Science graduates include quality control positions, USDA meat graders, biological researchers and lab technicians. Many students go on to other graduate programs to study muscle growth and development, biochemistry, and processing.

The Backpage

FACULTY HONORS AND AWARDS

Animal Science faculty member Dr. James G. Morris is one of five recipients of the 1986 Ralston Purina Small Animal Research Awards. The awards are given annually to professionals who have made significant contributions to the body of knowledge about small animal health and nutrition.

Winners are selected by the American Veterinary Medical Association Council on Research. Morris was nominated for the award by the UCD School of Veterinary Medicine Department of Physiological Sciences for his research on the amino acid and protein requirements of cats.

In addition to receiving a \$1,000 honorarium and engraved plaque, award winners are announced in the Journal of the American Veterinary Medical Association, and honored at a dinner at the Purina Research Farm in Missouri.

1986 STUDENT AWARDS

OSKAR LANG MEMORIAL SCHOLARSHIP: Adrienne Horowitz

DAIRY SHRINE CLUB AWARD: Cathy Rollin

GRETA BREEDLOVE-ROSS SCHOLARSHIP: Eric Erba

CALIFORNIA CATTLEMEN'S ASSOCIATION ACHIEVEMENT AWARD: JoMay Chow, Dave Doonan, Jahn Maus, Randy Mead, Nicolai Nicholas

AMERICAN SOCIETY OF ANIMAL SCIENCE AWARDS:
(Seniors) Giselle Chan, JoMay Chow, Randy Mead, Michael Miller, Lynette Nestor, Rachel Rohrer, Terri Roth, Steven Sutter, Amy Tempel, (Juniors) Charles Albers, Jennifer Brownson, Laurie Cambra, Lawrence Davis, Ann Diedrich, Vicky Einstein, Diane Harris, Pamela Hullinger, Dana Kinsey, Leslie Leach, Christine Plowman, Mary Beth Whitcomb, Philip Williams, Jamie Wilson, Rafael Wong, (Sophomores) Raymond Doty, Todd Hill, Jana Levin, Linda Van Hoogmoed

ANIMAL SCIENCE DEPARTMENTAL CITATIONS: Giselle Chan, JoMay Chow, Lisa Nash Holmes, Michael Miller, Randall Mead, Mark Munger, Lynette Nestor

CHANCELLOR'S LEADERSHIP RECOGNITION PROGRAM FOR OUTSTANDING SENIORS: Laurie Cambra, JoMay Chow, Chris DiBenedetto, Steven Diehl, Lori Faber, Lisa Nash Holmes, Nidia Martinez, Randall Mead, Michael Miller, Mark Munger, Lynette Nestor, Gale Song, Donna Ventura, Thomas Wood

CARL GARRISON AWARD: Peter Hulse, Linda Van Hoogmoed

TOM MEAD DAIRY AWARD: Peter Hulse

CALIFORNIA COWBELLES: Phil Miller

UC BAR AWARDS: Lisa Nash Holmes, Mark Munger, Lynette Nestor - Special Recognition: to former Master Adviser R. C. Laben

HORSE DAY

The UC Davis Department of Animal Science and Cooperative Extension will host Horse Day on Saturday, Oct. 18 in room 194 of the Chemistry Building on the UCD campus. The program will feature presentations on nutrition, behavior, wild horse adoption, packing and endurance rides, horseshoeing and hoof care, taxes, pasture management, and 4-H youth programs. Speakers will include experts from both the university and the horse industry. A \$5 fee will be charged for registration and a copy of the proceedings. For more information, contact Animal Science Specialist Roy Hull at (916) 752-1256.

DAIRY GOAT DAY

The UC Davis Department of Animal Science, Cooperative Extension, and California Polytechnic University, Pomona will hold the 12th Annual California Dairy Goat Day on Saturday, November 1 at the University Union at Cal Poly, Pomona. Animal Science Extension Dairy Scientist Frank D. Murrill and Dr. Duane Sharp of the Cal Poly Department of Animal Science will moderate. Registration will begin at 8:30 a.m. with adjournment at 3:30 p.m. A fee will be charged for registration and a copy of the proceedings. For more information, contact Extension Specialist Frank Murrill at (916) 752-6620.

BEEF DAY

The UC Davis Department of Animal Science and Cooperative Extension will sponsor the 1986 Beef Day in November. The program will be presented in Oakdale Nov. 6, Santa Margarita Nov. 7, McArthur Nov. 10, and the U.C. Sierra Foothill Range Field Station in Marysville Nov. 11. Registration will begin at 8:30 a.m., with adjournment at 3:15 p.m. Contact your local farm advisor to make lunch reservations. For more information, contact Extension Specialist John Dunbar at (916) 752-0525.

RETIREMENTS

AA Geri Rippengale after 29 years of service

Dr. Robert C. Laben after 36 years of service

THE ROBINSON MEMORIAL SCHOLARSHIP

A scholarship fund has been established in memory of Animal Science faculty member David W. Robinson, former Associate Dean of International Programs and Small Ruminant CRSP director. The scholarship will assist students from third world countries. Contributions should be made payable to Regents of the University of California and sent to the Animal Science Department.

Department of Animal Science
University of California
Davis, California 95616



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Suzanne Jones, Editor
THE DEPARTMENT OF ANIMAL SCIENCE
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