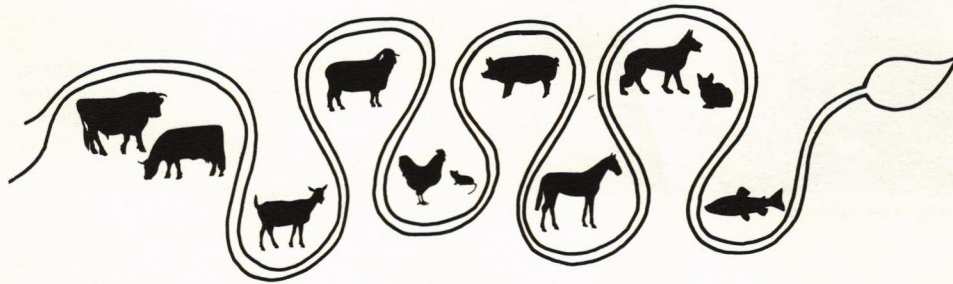


TALES AND TRAILS



Volume 2, Number 1

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

Dear Friends:

As you will learn from this issue of *Tales and Trails*, the faculty, staff and students of the Department of Animal Science are continually involved in a great variety of activities.

The Livestock and Dairy Judging Teams have had a highly successful year. The Livestock Team won the Overall Championship and was High Team in Beef Cattle at the Pacific International Intercollegiate Livestock Judging Contest in Portland, Oregon. The Dairy Team placed well at the Western International Dairy Exposition in Fresno.

In January, an academic quadrathlon was held on campus with students from UC Davis and California State University, Chico participating. In July, first place teams from each school will compete at the Western Regional Competition in Corvallis, Oregon.

The department is hosting visiting Fulbright Senior Fellow Dr. In-Kyu Han from Korea during the 1985-86 academic year. Faculty, staff and students can learn much from such visiting scientists.

There are also short profiles of some of our faculty and staff members. These articles reveal the dedication of these individuals to their work and give an indication of the great variety of research conducted by the department and Animal Science Extension staff.

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

Sincerely,

R. W. Touchberry, Chair
Department of Animal Science



Embryos are flushed from a bovine donor

The Cole Facility has much to offer

A wide spectrum of research is conducted at the Harold H. Cole Facility, the largest unit of Animal Science laboratories outside Hart Hall. The facility houses the Meat Evaluation and Muscle Biology laboratories, the Cat and Small Animal colonies, and the Large Animal Biology and Reproductive Physiology laboratories.

Named after the late Dr. Harold H. Cole, the facility consists of four buildings, dedicated in 1969. In conjunction with former Animal Science faculty member Dr. George H. Hart, Cole discovered Pregnant Mare Serum Gonadotrophin (PMSG). PMSG was an important milestone in understanding pituitary-gonadal relationships and the interdependence of gonadotrophins and steroid hormones. It is now used globally.

Dan Sehnert has been staff supervisor at Cole Facility since 1981. Originally from Nebraska, Sehnert graduated with an Animal Science degree from California Polytechnic University, Pomona. In addition to managing Cole Facility, he coaches the Animal Science Meat Judging Team.

At Cole Facility's Meat Evaluation Lab, students are instructed by Dr. Yu Bang Lee in such areas as the conversion of muscle to meat, meat palatability, slaughtering and carcass cutting, carcass grading and evaluation, and new concepts in meat processing technology.

The facility houses a USDA-inspected kill floor where beef, swine, lambs and goats are slaughtered. The USDA checks sanitation and animal health so that carcasses are deemed safe and can be shipped interstate. Here Animal Science 1 and 2 students learn animal anatomy and slaughter techniques.

After slaughter, carcasses are cut and processed in the cutting room. They are weighed in water in a specific gravity tank to determine fat, muscle, and bone composition. Dr. William N. Garrett formulated the body composition equation applied to data obtained from the tank. Previously, whole carcasses had to be ground and samples taken to ascertain composition.

The Muscle Biology Lab is also located at Cole Facility. Under the direction of Dr. C. R. Ashmore and Dr. Yu Bang Lee, Staff Research Associates Linda Hitchcock and Kathy Mechling perform chemical, biochemical, histochemical, and electron microscopic assays on muscle samples. The focus of research is muscular dystrophy, the effects of exercise on muscle, and muscle development and growth.

In the Large Animal Biology Laboratory, cattle and sheep are fed controlled diets and urine and fecal samples are collected for evaluation. Researchers can monitor gases given off during breathing in the respiration room. An environmental chamber where heat, humidity, and light can be regulated is available to study the effect of such variables on animal physiology.

Dr. Gary Anderson's Reproductive Physiology Lab is involved with large and small animal projects in reproductive physiology and embryo research. Work at the lab centers on embryo manipulation. Embryos from large and small animals are collected from donor animals, sorted, and either split to form identical twins or used in other research.

Cats in the pathogen-free Cat Colony have never been exposed to diseases like distemper or feline leukemia. Dr. James Morris of the Animal Science Department and Dr. Quinton Rogers of Veterinary Medical Physiology use the cats primarily for nutrition and physiological studies. Animal Technician Ken Lindley is responsible for running the colony.

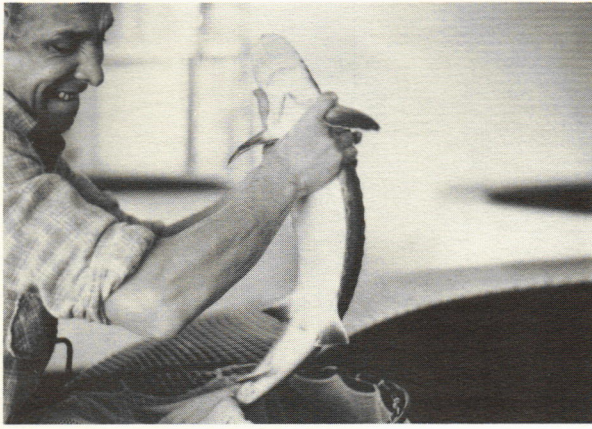
The new Animal Science Small Animal Colony will be housed in Cole Facility Building B. The new addition to the building will contain facilities for small animal research and the care and breeding of rabbits, hamsters, rats, mice, and cats.

"We hope the new facilities will allow us to provide healthier animals for teaching and research," says Colony Supervisor Kathy Wesolak. "This will especially benefit research because the animals will not have as many extraneous health problems which might influence results. Because the cost of research is rapidly increasing, more and more researchers will be using laboratory animals."

Doroshov returns from sabbatical

Aquaculturalist Dr. Serge Doroshov recently returned from a sabbatical at the University of Wisconsin, Milwaukee. Doroshov was invited by the university's Center for Great Lakes Studies and the Sea Grant Office.

Doroshov, who has an M.S. in zoology from the University of Moscow and a Ph.D. in biology from the Moscow Institute of Oceanology, participated in a state sponsored and funded project on the reproductive physiology of lake trout. Lake trout used to be the major native species found in the Great Lakes, but were almost totally wiped out by lamprey eels migrating from the Atlantic Ocean via the Saint Lawrence Seaway.



Doroshov grapples with a sturgeon

In addition, due to environmental changes in the lakes, many stocks of trout fail to spawn normally. This is primarily because of pollution and changes in the gene pool from stocking trout indigenous to other parts of the country. As a result, many native trout have been suppressed.

"The Wisconsin Department of Natural Resources is making great efforts to restore fish stocks, and is especially interested in the native stocks which survived," says Doroshov. "My task was twofold: to help the hatchery develop induced spawning techniques to increase egg production of native stocks, and to collect material to study the reproductive physiology of those species during spawning and maturation."

This research was conducted in conjunction with the University of Wisconsin Center for Great Lake Studies, and Senior Fisheries Biologist Fred Binkowski. Binkowski and The Department of Natural Resources initiated lake sturgeon research about the same time Doroshov began his work at UC Davis. Over the years, the researchers have collaborated on many projects.

At the University of Wisconsin, Doroshov helped develop spawning techniques for lake trout. "The application of this technique should result in the production of twice as many eggs," he says. "Our work in reproductive physiology will take longer. We are looking at the effect of the endocrine system on ovarian development during prespawning periods."

During his sabbatical, Doroshov also visited several laboratories and Department of Natural Resources centers, where he gave talks. He also spoke at the University of Wisconsin, Madison campus.

Now that he has returned to UCD, Doroshov says he plans to continue collaborating with his colleagues in Wisconsin on trout and sturgeon research.

Doroshov also participated in the annual meeting of the World Mariculture Society in Reno recently. Every four years, this meeting is held in conjunction with the American Fisheries Society and the American Trout and Catfish Associations.

Along with Dr. Richard Swallow, a faculty member at Coker College in South Carolina, Doroshov presented a paper on the transport of nutrients to

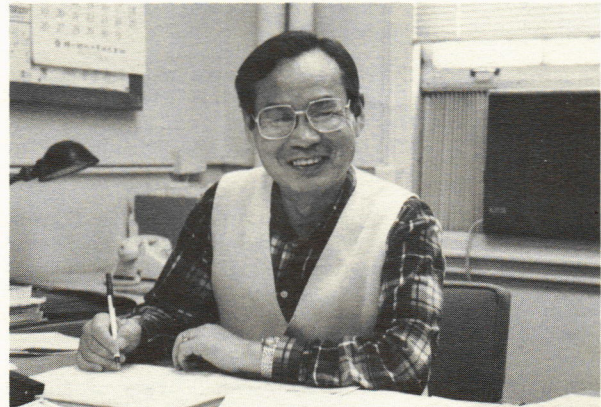
developing eggs in sturgeon females. He presented another paper with Fred Binkowski on the history of sturgeon culture. A third paper was presented along with UCD Cooperative Extension Specialist Fred Conte on ovarian cycles in California's channel catfish stocks.

Fulbright scholar In-Kyu Han

The UC Davis Department of Animal Science is pleased to be hosting Dr. In-Kyu Han, a visiting Fulbright Senior Fellow from Korea, during the 1985-86 academic year.

Dr. Han is a professor of animal nutrition and feedstuffs at Seoul National University in Korea. The university has about 35,000 students, including some 5,000 graduate students.

While several hundred Fulbrights are granted annually on an international basis, Han was only one of three selected from Korea this year. He is currently president of the Asian Association of Animal Production and the Korean Society of Animal Nutrition and Feedstuffs. He is also vice president of the World Association of Animal Production.



Dr. In-Kyu Han

Han received B.S. and M.S. degrees from Seoul National University, and a Ph.D. in animal nutrition from Cornell, where his major professor was the late Dr. J. T. Reid.

During his stay in Davis, he will be working with Dr. William N. Garrett on two research projects. One is a comparative feeding trial to evaluate the nutritive value of rice straw for ruminants as influenced by treatment with ammonia or mixing with alfalfa. The other is a method to develop the use of acid insoluble ash as an internal marker for digestibility studies of ruminants.

Han has published more than 280 research papers, most of which are on poultry and swine, the major domestic animals in Korea. Beef and dairy cattle have only recently begun to be produced there. "Korean animal agriculture is less than 50 years old," he says. "It's just in the beginning stage of development, whereas animal production is a major part of agriculture in the US."

According to Han, the two countries have a very good relationship in the animal industry. "We have no way to produce corn and soybeans in sufficient amounts, and import large quantities from the US," he says. "Even for human food, we've been importing many thousand metric tons of rice produced in the Sacramento Valley."

Han says the United States has an advantage in good quality feedstuffs. "Plus, your system is more mechanized and technically advanced. Most of our farms are much smaller than here in California or the US."

The Korean population is about 45 million. "Almost all the agricultural industry should be very intensive, considering the size of the country," he says.

Han and fellow researchers completed Korean tables of feed composition in 1982. "We have established our own nutrient requirement and feeding system for poultry, swine, beef and dairy cattle," he says. Dr. Garrett served on the committee that published the nutrient requirement tables for beef cattle, and Animal Science Extension Specialist Dr. Don Bath served on the committee for dairy cattle nutrition.

Han says he chose to spend his Fulbright Fellowship at UCD for a number of reasons. "When I was a graduate student, I originally wanted to come to Davis for my Ph.D., but for some reason, was unable to. At that time, professors Kleiber, Lofgreen, Cole, and others who were so famous to most of our Korean students were here."

Another reason Han selected Davis was because it is a place he can obtain rice straw for his research. And there is a final reason he is glad he chose UCD. "The people here are wonderful," he says.

Han and his wife, Myung Sook, have four children. One daughter is currently majoring in genetics at UCD, and a son is attending Davis High School. Another daughter is studying consumer economics at Seoul National University, and the oldest is grown and married.

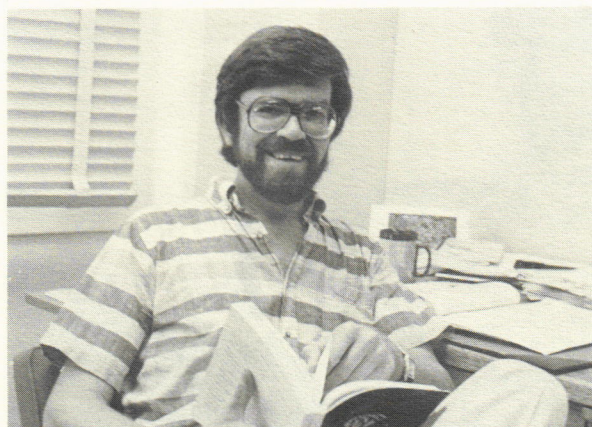
Han attended the annual American Society of Animal Science meeting in Georgia and the tenth International Symposium on Energy Metabolism in Virginia earlier this year. He will attend the 1986 meeting of the American Dairy Science Association hosted by UCD in June.

As a Fulbright visiting professor, he will also give seminars at several American universities, including Texas A & M, North Dakota State, and Cornell.

New faculty profile: Juan Medrano

New Animal Science geneticist Juan Medrano may have grown up in Guatemala, but this is not the first time he has been at UC Davis.

Medrano came to Davis in 1970 as an undergraduate, pursuing an individual major in biochemical animal genetics. He went on to earn a master's degree in



Dr. Juan Medrano

Animal Science and was awarded the A. K. Humphries Fellowship in Animal Husbandry. Continuing his studies at UCD, he received a Ph.D. in genetics under Dr. Graham Gall.

Medrano grew up in Guatemala City, Guatemala, and attended the American School of Guatemala. His interest in agriculture and livestock comes from an early exposure to farming on his family ranch.

When Medrano finished high school, he went to study at the Panamerican School of Agriculture, in El Zamorano, Honduras.

The school offered a three-year program in practical agriculture: the first year dedicated to horticulture, the second to agronomy, and the third to cattle production.

Medrano graduated first in his class with a degree in agronomy. As a result, he was awarded a Latin American Scholarship for American Universities, and chose to study at UCD.

A few weeks after coming to UCD as an undergraduate, Magnar Ronning called and offered Medrano a job with the Animal Science Department.

"I had a great learning experience that summer working for Dr. Lee Baldwin," he says. Every morning he took bovine mammary gland, adipose, muscle, and liver tissue samples, and assisted with radioactive labeling metabolic studies on tissue slices.

Medrano met his wife, Barbara, while they were both students at UCD. They were married in 1972. Barbara, a photographer, is from Sacramento. The couple have three children.

After receiving his master's degree, Medrano returned to Guatemala briefly and worked for the Institute of Nutrition for Central America and Panama (INCAP).

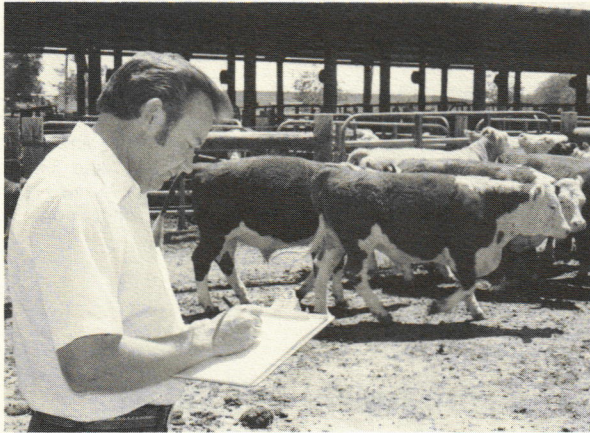
He returned to UCD for his Ph.D., then went back to Guatemala, where he was hired to plan the agriculture curriculum at a private school, the Universidad del Valle. He also taught basic genetics and statistics.

While in Guatemala, Medrano was awarded a fellowship with the United Nations University at INCAP, where he was responsible for two projects. Through the program, he traveled to different

parts of the world, including Rio de Janiero, Quebec, the Philippines, and Mysore, India.

Medrano participates in a statistics course, Agricultural Science and Management 150, and will teach Animal Genetics 107 next quarter. He will be conducting research on the genetic variability of milk proteins relating to milk quality for manufacture and production traits in dairy animals and on physiological aspects of genetic differences in animals.

"I like Davis very much," he says. "The university is excellent, and is known world-wide. The faculty and staff have been friendly and welcoming. I look forward to a very good relationship with everyone, along with doing some cooperative research with other faculty members."



Extension Specialist John Dunbar

Animal Science Extension Specialist John Dunbar

Specialist John Dunbar says he likes working for Cooperative Extension because he enjoys the association with the Department of Animal Science, and the interaction with livestock farm advisors and the agricultural community.

"There's a lot of freedom of choice, always something new to learn, and I like to travel within the state," he says. "We have excellent resources to work with, although funds are somewhat limited at this time."

Dunbar was born in Dove Creek, Colorado. His family homesteaded there, farming and raising cattle. When John was eight, the Dunbars moved to Santa Rosa, and raised sheep and cattle.

Dunbar attended Santa Rosa High School, where he was secretary and president of the Future Farmers of America and on the livestock judging team. He also received the American Farmer Degree.

At Oklahoma State University in Stillwater, Dunbar majored in animal science under Dr. Bill Pope. He was secretary and president of the Alpha Gamma Rho fraternity, a member of Alpha Zeta and Blue Key (an honorary scholastic and leadership fraternity), and president of the collegiate FFA.

Dunbar graduated in 1957 with a B.S. in animal science, and was appointed an extension assistant in Humboldt County.

"I became familiar with extension service, the educational programs that were carried out, and the research done by farm advisors in various production areas," he says. He was also in charge of the area's 4H program for two years.

Dunbar was appointed livestock farm advisor for Humboldt County, where he developed and disseminated research in livestock production for sheep, swine, cattle, and horses.

In 1963, Dunbar took a sabbatical leave to earn a master's degree in Animal Science at UC Davis. He studied the nutrition and reproduction of beef cattle under Dr. Robert J. Loy.

After serving extension ten years in Humboldt County, he joined Ralston Purina in St. Louis, Missouri. He worked for Ralston's Farm Management Division preparing manuals and training sessions for sales personnel and visiting producers.

Dunbar left Ralston in 1968 and went to work in the cattle and sheep feeding industry in Imperial County, California. There he was a member of the calf-stress study group that initiated nutrition, health, and management programs for newly received feeder calves. Additional research was done on processing grains, the economics of feeding baled, cubed and long hay, and the industry's economic contributions to the Imperial Valley.

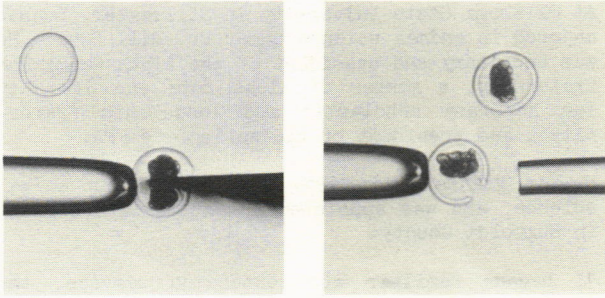
In 1972, Dunbar came to Davis to work as an extension livestock nutritionist. In cooperation with animal scientist Dr. Bill Garrett and agricultural economist Dr. Daryl Carlson, he helped develop the first least cost gain model for beef.

More recently, Dunbar has helped evaluate growth implants for improving the rate of gain and feed efficiency in cattle and sheep and the intervals they should be administered.

Currently he's involved with evaluating the use of copper and selenium pellets for preventing deficiencies. A range cattle supplementation study is also underway in cooperation with UC San Francisco to determine the effects of the physical form of supplementation on cow performance, cost, and profits.

John and his wife, Billie Jo met at Oklahoma State University. Billie Jo works at Martin Luther King Continuation High School.

The Dunbars have three children. Debbie lives in Anaheim and works for a company providing diagnostic services to the medical and veterinary profession. Johnnie attends Sacramento Junior College, and is considering a computer design major. Tammie is a senior at Cal Poly San Luis Obispo, majoring in Animal Science. She is currently living with a ranch family in New Zealand on a student exchange program.



An embryo is split (left), and half transferred to an empty zona pellucida (right)

Staff Research Associate Susan Donahue

Staff Research Associate Susan Donahue probably has one of the more unusual laboratory jobs in the Animal Science Department. Donahue performs micromanipulations at the Cole Facility Embryo Transfer Lab headed by Dr. Gary Anderson.

One of Donahue's primary responsibilities is splitting embryos for the production of twin cattle. Laboratory projects include work with both large and small animals, including mice, rats, rabbits, sheep, and cows.

Donahue collects small animal embryos, and veterinarians from the School of Veterinary Medicine collect them from large animals by surgical or nonsurgical techniques. During collection, the oviducts or uterus are flushed with a special medium which is then examined under a microscope to locate embryos.

"Bovine embryos are about 100 microns in diameter while mouse embryos are about 75 microns," says Donahue. "They are visible to the naked eye as a tiny speck."

Once located, embryos are evaluated for viability. The stage of development is also determined so they can be made available for appropriate research projects. Embryo sex is determined by a method developed by Animal Science graduate student Ken White using fluorescent labeling.

When embryos are collected at an early stage, a temperature- and atmosphere-controlled incubator is used to keep them alive and growing outside the uterine environment. Embryos are maintained in a culture medium appropriate to their species. The solution also contains an energy source such as glucose or lactates.

To produce twin cows, Donahue uses embryos at the morula or blastocyst stage and an empty zona pellucida - the membrane that houses the embryo. Using a micromanipulator, she cuts the embryo in half with a tiny blade, pipettes one of the halves into the empty zona, and transfers both to a recipient cow or cows using a technique similar to artificial insemination.

"The micromanipulator is the mechanism by which hand movements are translated to the microscopic level," says Donahue. The one she uses is equipped with a TV camera and monitor so the process can be viewed by observers.

Donahue was part of a team that performed a live demonstration of embryo manipulation during last summer's Genetic Engineering of Animals Symposium. The demonstration was broadcast from the Embryo Transfer Lab to an audience in Freeborn Hall and projected on a huge video screen.

Embryo splitting is being used to produce an identical twin dairy herd for the Animal Science Department. "The advantage of two herds with identical genetic potential is that different parameters can be compared," says Donahue. "So far, two sets of twin heifers and four sets of twin bulls have been born."

Donahue was born and grew up in Los Angeles, and has always been very interested in science, biology, and animals. She graduated from UCD in 1973 with a B.S. in physiology. As a sophomore, she worked in the Cole Facility mouse colony under Dr. Eric Bradford, conducting breeding, weaning, sexing, and keeping records for the genetics lab.

Bradford was interested in embryo transfer, and her senior year Donahue did an embryo transfer project utilizing mice. When Dr. Gary Anderson was hired a year after she graduated, she began working part-time for him and part-time for Bradford. She has now worked for Anderson 12 years.

Graduate student Jeff Stuart

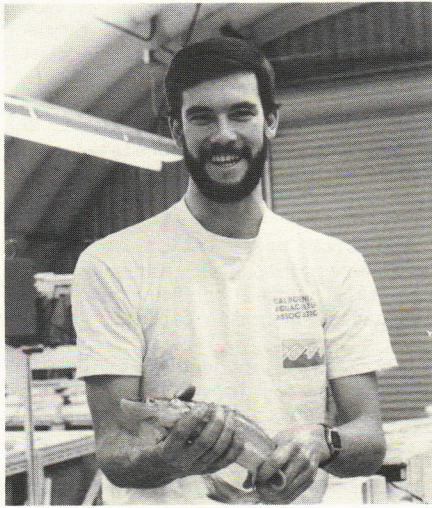
Graduate student Jeff Stuart is impressed with the UC Davis Aquaculture and Fisheries Program. "People go out of their way to assist you," he says. "It's a really nice atmosphere to work in. You're not continually competing with the other graduate students - we're all like family, trying to get to the same goal, to develop aquaculture as an industry."

Stuart grew up near the Atlantic and Pacific Oceans, and says he has always been interested in marine biology. He was born on Long Island, New York. His parents moved to Southern California when he was 10, and now live in Palo Alto near the ocean.

Stuart received his B.S. in aquatic biology from UC Santa Barbara, where in addition to academic pursuits, he enjoyed sailing, fishing, and scuba diving.

He says UCD was recommended by his professors at Santa Barbara. "The UCSB graduate program is more influenced by aquatic biology and ecology than aquaculture. UCD is the only UC school that offers that in California."

Other factors influencing Stuart's decision to attend UCD were a fellowship offered by the graduate division, and the fact that he had friends who had gone to school here and liked it.



Graduate student Jeff Stuart

Stuart is a member of the fish nutrition group under Dr. Silas Hung. He spends most of his time conducting research at the Institute of Ecology and the Fish Hatchery.

"I am looking at seasonal changes in biochemical trends in fish, to see if there is a correlation between this and diet in the wild," says Stuart. "I am also running lab experiments using full-fed and restricted diets, measuring biochemical changes in these fish and applying this to changes that I find in wild fish, to see if they are starving at the time of capture or feeding and in good condition."

Stuart says he hopes to apply this data to the management and development of juvenile sturgeon stocks. He is debating whether to go into the aquaculture industry or to pursue a Ph.D. in nutrition or marine biology at the Scripps Institute for Oceanography in San Diego or Woods Hole in Massachusetts.

Jenkins likes Extension

Staff Research Associate Audrey Spencer Jenkins got involved with animals while growing up in Southern California. "I started out in 4-H," she says. "We had horses at home, and I was actively involved in showing quarter horses. That's how I got interested in animal agriculture."

As an undergraduate, Jenkins attended Cal Poly San Luis Obispo with the intention of working in the horse industry, but after some practical experience, changed her plans.

"I spent some time working on breeding farms and on a racetrack, and wasn't really satisfied. However, I do hope to have horses again as a hobby someday," she says.

At that point, Jenkins turned her focus to animal agriculture for meat production animals. Her last year at Cal Poly, she became interested in animal reproduction, and came to UC Davis for her master's degree. Under Dr. Gary Anderson, she studied the effect of the uterine environment on embryo survival.

After finishing her coursework in 1983, she went to work for Animal Science Extension. "It was perfect timing," she says. "I was looking for a job, and this one opened up and was along the lines of the work I wanted to do. I had always planned to work in some of the practical aspects of the industry."

As an SRA, Jenkins is primarily responsible for carrying out the research of the six extension specialists. She conducts field trials, works with farm advisors on the county level, plans training conferences for farm advisors, and plans and presents field days for producers.

"I really like the people contact," she says of her job. "When I'm out in the field, I'm working with farm advisors and producers and can see the research developed here at the university being implemented. I'm in a good position to use my animal science knowledge and actually see some changes being made for the better."



SRA Audrey Jenkins

Jenkins likes working for extension. "I have never worked for an organization where I've found such nice people," she says. "Most everyone genuinely likes what they do. When I go out into the field, the producers are happy to see university representatives, and are eager to see what you have to show them."

Jenkins says she would eventually like to become a livestock farm advisor. "My current position is a good place to begin a career in extension," she says. "It's an excellent training ground, because I'm learning how extension works, and the kind of programs that are successful."

Audrey and her husband Willy Jenkins met at Cal Poly and were married in 1981. Willy is an undergraduate in water resources, and works at the Water Resources Control Board in Sacramento.

UCD holds academic quadrathlon

The academic quadrathlon was initiated by the American Society of Animal Science to encourage increased undergraduate activity in ASAS programs. It has been an important activity in Midwestern colleges and universities for a number of years.



AQ contestants identifying feeds

Dr. Robert Laben helped get the program going here at UC Davis when senior student Susan Cumming expressed an interest in the activity in 1982. The Animal Science Department sent Cumming and fellow student Brenda Coe to the midwestern quadrathlon to observe.

The two young women were responsible for the first academic quadrathlon held on the Davis campus, and presented the concept of the activity to the Western Section of ASAS at the 1982 meeting at Los Cruces, New Mexico.

According to Laben, the academic quadrathlon is "designed to encourage undergraduate students to greater professional involvement in animal science."

The quadrathlon consists of teams of students competing first at the local level on their university campus, then at a regional level during the annual section meetings of ASAS. Activities range from demonstration of a knowledge of basic sciences through the ability to communicate orally and on to a test of practical animal husbandry procedures and techniques.

There are four areas of competition, including a written exam, an oral presentation of a topic in animal science, a lab practical to demonstrate actual practical application of techniques, and a "college bowl" in which the teams compete until a final winner is chosen.

In 1983, Laben and Professor John Forseth of Washington State University were co-chairs at the first western regional competition in Pullman, Washington.

Since the first quadrathlon held at UCD in 1982, other students have chaired and promoted the activity. In 1984, the Davis team and seven others competed at the Western Section ASAS meeting at Fresno State University.

This year's local quadrathlon was held on January 25 at UCD and was a joint effort by UCD and California State University, Chico. UCD was represented by three teams, with Chico represented by two. The two schools did not compete against one another, but chose first place teams from each school.

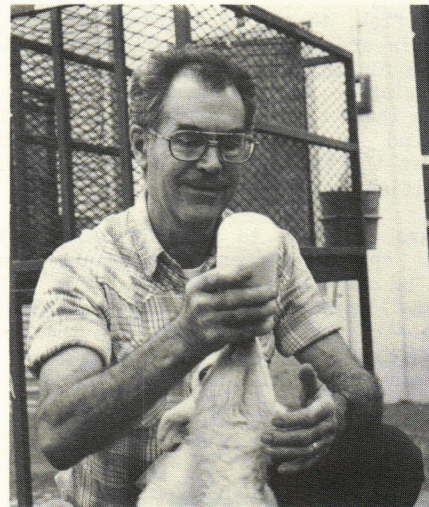
The winning UCD team consisted of Jo May Chow, Pam Hullinger, Diane Harris, and Tom Sampson. They will compete at a regional competition in Corvallis, Oregon, July 9-11.

The laboratory practical, held at the Animal Science Teaching Facility, consisted of six areas, including aquaculture, dairy, feeds and feeding, horses, meats and swine.

During the oral presentation, students chose a topic and were given half an hour to prepare a 15-minute talk judged by four professors. Each team also had an hour to complete a written exam.

In the college bowl, conducted by Dr. Tom Famula, teams used a buzzer to signal if they wished to answer a question. If an incorrect answer was given, the other team had 20 seconds to answer it correctly. Teams competed until they were eliminated twice, when they were out of the game.

The 1986 quadrathlon was organized by Student Chair Chris DiBenedetto, and was assisted by Block & Bridle members.



SRA Norm Hinman feeding a hungry lamb

Hinman's path led to Davis

Staff Research Associate Norm Hinman has covered a lot of ground since leaving his hometown of Eureka at age 17. After graduating from Eureka High School, Hinman worked a year for the Ford and Van Duzer Company, primarily in milking and lambing.

The following year, he went to work for the Russ Cattle Company on the Murphy Meadows Ranch in eastern Humboldt County. "I was a typical ranch hand," says Hinman. "I drove cattle, built fences, and fed cattle in high country in the winter time."

It was on the Murphy Meadows Ranch that Hinman built his first pair of snowshoes. "There would be a crust on the snow, which was five to seven feet deep," he says. "On the slopes, you would break through, and couldn't walk on it."

The next summer, Hinman moved to Ocean House Ranch, at the tip of Cape Mendocino, headquarters for the Russ Cattle Company. Lambing and shearing were the two big ranch operations.

Hinman worked there until the fall of 1951, when he enrolled at Cal Poly, San Luis Obispo. He studied animal husbandry for a year before returning to Ocean House.

In the spring of 1953, he left to see other parts of the United States. At the Chiracahua Cattle Company near Tucson, Arizona, he worked cattle on horseback every day.

The following September, Hinman returned to Cal Poly, added a biosci major, and graduated in 1957. He then went on to the University of Idaho for a master's degree in animal nutrition.

Hinman returned to the Russ Cattle Company and served as foreman on the Ocean Ranch at the South end of Humboldt Bay for just over a year. He heard about and applied for a job as herdsman at the UC Davis feedlot in 1961.

The next October he began working at the Animal Science Nutrition Lab in his current position as Staff Research Associate.

Hinman runs proximate analyses to determine the composition of feedstuffs to analyze digestion trials for Dr. William Garrett and Dr. James Morris. He does some programming, both data and statistical analysis. He also handles all of Garrett's carcass work at the slaughter house, runs digestion trials, and helps at the feedlot.

Assisting graduate students is also one of Hinman's responsibilities. "Sometimes it's a matter of lending them a hand, sometimes it's a matter of guiding them through," he says.

"I have enjoyed very much working for the Animal Science faculty, and it's been rewarding to work for the department and the university," says Hinman.

Norm and his wife, Diane, have been married 29 years. Diane is supervisor of the Veterinary Medicine Media Room, which prepares media for bacterial culture.

The Hinmans have four children, Michael, Kevin, Timothy, and Deborah, ages 28, 27, 25, and 24. Mike is an Emergency Medical Technician with Davis Ambulance Service. Kevin is a computer-specialized mechanic with a General Motors agency in Anchorage, Alaska. Tim is a staff sergeant in the U.S. Air Force, stationed at McClellan Air Force Base. Debbie is an office manager with a Davis ophthalmologist.

Animal Science alumnus Burrows Hamilton

Animal Science alumnus Burrows Hamilton has a high opinion of UC Davis. "I think UCD is one of the finest schools in research and the technical aspects of science," he says.



Alumnus Burrows Hamilton

Hamilton, who operates a sheep ranch in Rio Vista, says his degree has given him a broader outlook on life. "It stimulates you to look at other things and appreciate research and the elements that go into the production end of agriculture. I think college is a must for anyone that can possibly handle it. It opens up areas they normally wouldn't see otherwise."

Hamilton received his degree in Animal Science in 1950. He took courses from Elmer Hughes in animal husbandry, Hubert Heitman in judging, Robert Miller in feeds and feeding, Harold Goss in biochemistry, Harold Cole in physiology, Tom Mead in dairy, James Wilson in wool technology, Perry Cupps in animal breeding, and Hugh Cameron in veterinary science. His adviser was Max Kleiber.

Classes were quite small when Hamilton was a student. "It was on a person-to-person basis," he says. "This was right after World War II, and there were only about 2000 students. There were only seven of us in one class I had."

Hamilton says he enjoyed all the upper division Animal Science courses, especially the sheep and feeds and feeding courses. He was a member of Phi Sigma Kappa.

The friendliness of the Animal Science faculty and staff made an impression on Hamilton. "Even a lot of the professors I wasn't taking a class from knew who I was," he says. "Many professors knew what the students were doing outside of school. Davis was a small town then, and when school closed in June, the town practically closed down."

The Hamilton family has lived in the Rio Vista area for nearly 100 years. Burrows was raised there, and he and his two brothers have taken over the family sheep ranch. Under the name Hamilton Brothers, the men run a dry land grain farming and sheep operation. Burrows is in charge of the sheep.

Hamilton Brothers has about 4,000 breeding ewes. They sell the lambs and shear the sheep for wool. The sheep are pastured in Rio Vista and south of Dixon. Along with several other partners, the brothers also have a row crop operation in the Delta, where they raise asparagus, sugar beets, tomatoes, corn, alfalfa, and pears.

Hamilton continues to have contact with UCD. For the past two years, he has participated in a

project with Dr. Eric Bradford of the Animal Science Department and Dr. Steve Berry of Animal Science Cooperative Extension to synchronize lambing and induce earlier lambing.

In 1985, Hamilton was named California Sheepman of the Year, an honor awarded by the Glen County Wool Grower's Association and the Bank of America.

Burrows and his wife Patricia have two sons. Peter, who is 23, graduated from UCD last spring with a degree in political science and English. He is attending California State University, Sacramento to get a teaching credential. Richard, age 25, graduated from California Polytechnic University, San Luis Obispo with a degree in agricultural management.



The 1985 UCD Livestock Judging Team (left to right): Dana B. Van Liew (Coach), Sue Lautze, Cymantha Beall, Will Feliz, Janet Switzer, John Maus, Kelly Weaver, Reed Prince

Judging Team champions at Pacific International

The UC Davis Livestock Judging Team captured the Overall Team Championship as well as High Team in Beef Cattle Judging at the Pacific International Intercollegiate Livestock Judging Contest in Portland, Oregon this year. John Maus garnered individual honors, winning High Individual in Beef Cattle and Second High Individual Overall. Team members included: Reed Prince of Fremont, John Maus of Davis, William Feliz of Firebaugh, Sue Lautze of Santa Rosa, and Cymantha Beall of Modesto, California.

In January, the team was 7th High Team Overall at the Arizona National Collegiate Livestock Judging Contest. Corey Oakley was High Individual Overall and High Individual in Beef Cattle Oral Reasons. Also in January, the team was 10th High Team Overall out of a field of 30 at the National Western Collegiate Livestock Judging Contest in Denver, Colorado.

The Dairy Team was 5th High Team Overall at the Western International Dairy Exposition in Fresno. The UCD Judging Teams hosted 80 students from 10 California and Oregon community colleges in the Third Annual Invitational Community College Livestock Judging Contest this year. Modesto Jr. College was High Team Overall, and Daron Spears was High Individual Overall.

David William Robinson

The Department of Animal Science was saddened by the loss of Professor David W. Robinson in December, 1985. Robinson was Associate Dean of International Programs and Director of the Small Ruminant Collaborative Research Support Program.

Born in Leeds, England, Robinson grew up in Morocco and Spain and was fluent in French and Spanish. He attended elementary schools in Morocco, England, and Wales, and was active in cricket, rugby and track.

At the University of Nottingham School of Agriculture, Robinson received a B.S. with Honors in physiology and biochemistry and minors in animal husbandry and statistics. He was captain of cricket and rugby teams and was honored as a British universities' select player. He was a two-time holder of the British records for the 800 meter and one mile track heats, and was named All Round Student of The Year.

He remained active in sports, especially rugby, in Davis. Some of his other interests were mountaineering and art.

Before coming to Davis, Robinson held positions at the University of Nottingham, the University of Liverpool School of Veterinary Science, and the Commonwealth Scientific and Industrial Research Organization in Australia and Indonesia.

Robinson's lifelong interests and efforts were focussed on Third World nations and their consuming struggles for improving the lives of their people. He traveled extensively throughout Africa, South America and Asia, bringing to bear his personal commitment and intellect in pursuit of solutions to the devastating conditions he found.

In 1984, Robinson addressed the U.S. House Select Committee on Hunger, examining the role of educational institutions in dealing with the problems of world hunger. "This university has a mandate," he said. "It is a mandate to seek the truth, to search for new knowledge, and to make the truth and knowledge available to all the family of mankind. We hope to train a cadre of people who not only understand the problems of hunger and poverty but who have the sensitivity and the courage to resolve them."

Robinson was a member of many professional and philanthropic organizations, including the American Society of Animal Science, Amnesty International and the Christian Children's Fund. He will be greatly missed by his many colleagues and former students around the world, and the university community.

A memorial fund has been established in his honor to assist students from third world countries. Contributions to the fund should be made payable to the Regents of the University of California and sent to the Animal Science Department.

HINDU SAYING: "Growth is slow, where roots are deep, but he who lights a little candle in the darkness may help to set the heavens aflame."

The Backpage

APPOINTMENTS

Dr. Graham Gall has been appointed Co-editor in Chief of Acquaculture, an international journal devoted to research on the exploration, improvement and management of aquatic food resources from freshwater, brackish and marine environments related to human consumption.

Dr. James G. Morris has been appointed 1985-86 Chair of the National Research Council Committee of Animal Nutrition.

PUBLICATIONS

Dr. Gary P. Moberg has edited and contributed to Animal Stress (American Physiological Society, Bethesda, Maryland).

DAIRY DAY

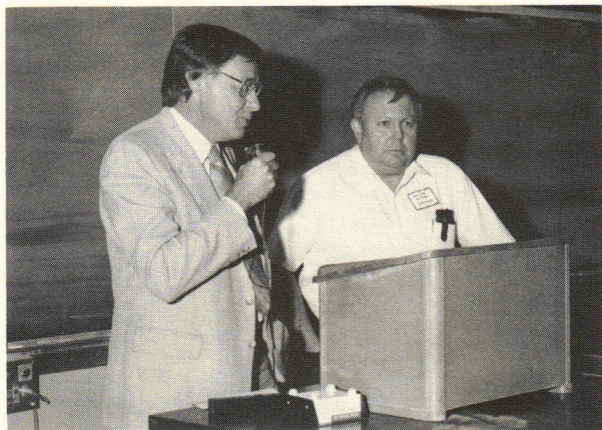
The UCD Department of Animal Science and Cooperative Extension will hold its 25th annual Dairy Day on Wednesday, March 26 in 194 Chemistry on the Davis campus. A \$6 fee for registration and proceedings will be charged. Lunch will be available for \$8.50 at the Faculty Club. For more information, contact Dr. Edward DePeters at (916) 752-1263.

SWINE DAY

The UCD Department of Animal Science and Cooperative Extension will hold Swine Day on Saturday, April 5 at Wyatt Pavilion on the Davis campus. A \$3 registration fee and a \$4 lunch ticket will be charged for the first 100 participants. For more information, contact Dr. Hubert Heitman at (916) 752-6118.

FEEDER'S DAY

The UCD Department of Animal Science and Cooperative Extension will hold Feeder's Day on Thursday, May 22 at the Imperial Valley Field Station in El Centro, California. For more information, contact Extension Specialist John Dunbar at (916) 752-0525.



Dean Charles Hess of the UCD College of Agricultural and Environmental Sciences receives \$5000 for the Dairy Goat Teaching and Research Facility from Chuck Wing, chair of the California Dairy Goat Advisory Committee



Animal Science staff outdid themselves this year decorating the corridors and the annual Christmas party

CALIFORNIA WATER LAW AND POLICY

March 27-28 UCD University Extension will present a course reviewing current issues in State water law and policy. The course will review the historical and doctrinal context of California water law and discuss the characteristics and function of contemporary water districts. Water quality and protection of groundwater from toxic chemical contamination will be emphasized.

The seminar will be held in the Club Rooms I and II at the UCD Faculty Club off Old Davis Road. The course fee is \$130, which includes two lunches and course materials. Enrollment for the second day only at a fee of \$70 is possible after March 13, space permitting. Refund deadline is March 20. For more information, call (916) 752-6021.

BASIC EQUINE HEALTH CARE

UC Davis University Extension will present this one-day course Saturday, April 5. The class acquaints horse owners with basic aspects of equine health care they can perform themselves. An afternoon demonstration will complement the morning lectures. The Instructor is Richard Barsaleau, DVM. Class will be held in the Orchard Room of University Extension Center, Extension Center Drive (off Hutchison), from 9 am-4 pm. The course fee is \$70. Enrollment is limited. Pre-enroll by March 28.

EQUINE NUTRITION UPDATE

UC Davis University Extension will present this one-day course Saturday, April 26. Designed for horse breeders and owners, this program reviews nutritional needs of the horse at various stages of its lifecycle. It will draw on university specialists, including Dr. Hintz of Cornell University, a nationally known researcher in equine nutrition. The instructor is Tony Buffington, DVM. Class will be held in 2 Wellman Hall, from 9 am-4 pm. The course fee is \$75. Enrollment is limited. Pre-enroll by April 18.

Department of Animal Science
University of California
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University of California and U.S. Department of Agriculture cooperating.