



TALES AND TRAILS

DEPARTMENT OF ANIMAL SCIENCE UNIVERSITY OF CALIFORNIA, DAVIS, CA 95616-8521 (916) 752-1250

ANIMAL WASTE MANAGEMENT ISSUE ELICITS NEW EXTENSION SPECIALIST POSITION, WASTE MANAGEMENT PRACTICES PUBLICATION

Lots of cows means lots of manure. Of the many urgent issues facing the dairy industry, the problem considered by many to be most threatening to successful dairying in California is environmental pollution from animal waste. Manure has tremendous fertilizer and tilth value when properly applied to growing crops, but causes serious pollution problems--especially with ground water--when there is excessive waste in a small area. As cities expand into formerly rural areas, waste management issues are receiving increasing public focus.

One effort to mitigate problems associated with animal waste is being coordinated by Dr. Tom Shultz, UC Cooperative Extension Dairy Advisor in Tulare County. Shultz, with other members of the UC Dairy Work Group, is developing an Extension publication on currently accepted best practices for animal waste management. The publication will provide a standardized set of waste management guidelines for use by dairy producers and regulatory agencies related to the dairy industry. These guidelines will address such issues as ground water pollution, fly control, air quality, how to avoid environmental pollution, and how to work with regulatory agencies. The Work Group, comprised of dairy advisors, extension specialists, research faculty and dairy industry representatives, expects to publish the guidelines by late 1992.

Shultz provides education and applied research programs related to all aspects of the dairy industry to Tulare County, which has the distinction of having more dairy cows than any other county in California or the rest of the nation, making it the ideal place to study dairy practices. Shultz also serves as an advisor to the Tulare County Dairy

Herd Improvement Association (DHIA) and conducts a variety of educational programs for the dairy industry.

In another effort to help solve the growing crisis of animal waste, the Department of Animal Science is recruiting for the newly approved Animal Waste Management Specialist position. This Specialist will be responsible for statewide extension and research programs covering such aspects of waste management as storage facilities design, waste utilization, environmental impacts and regulatory requirements. The closing date for applications was March 1, 1992 and the search committee expects to begin interviewing candidates sometime in April. The Department hopes to have the person on board and working by September 1992.



It's a real problem!

Alumna Ria de Grassi Goes National for California's Agriculture Issues

"I never get bored," declares Ria de Grassi, speaking of her position as Animal Welfare and Livestock Director for National Affairs & Research, California Farm Bureau Federation. "This job is the perfect mix of routine and the unexpected." The 1983 graduate of the UC Davis Agricultural Science and Management program has worked for the Farm Bureau since 1987; in the intervening years her position has expanded from emphasis on commodity services for California farm products to general issues which are problematic nationally and across commodity lines. Such concerns as food safety, endangered species, water quality and use, and more recently, animal welfare--the latter not even mentioned in her original job description--and public education on these issues, now make up the greatest part of Ria's job.

Raised on a small Mendocino County sheep ranch, de Grassi's original ambition was to be a livestock advisor for Cooperative Extension. During grammar and high school she spent seven years in 4-H in leadership roles, and got an up-close look at some of the political aspects of agriculture from her father, who was Agricultural Commissioner for Mendocino County.

During her undergraduate period at UCD, Ria took a year's leave of absence and went to New Zealand as an International Agricultural Exchange student, where she worked on a sheep (4,000 ewes) and mixed crops farm. Near the end of her time there she toured several dairy farms in the northern part of the country.

De Grassi was particularly impressed with the strong sense of community demonstrated by the New Zealand farmers, and relates a story of how, during a bad economic period, one of the farmers lost his farm to bankruptcy. His neighbors--none of whom were exactly well-off at the time--banded together to buy his farm, put him in as resident manager, and enabled him to buy it back over the next few years as the market improved. Ria believes that kind of cooperative loyalty may be crucial to the future economic strength of agriculture in this country.

Back home in school again, Ria finished her Bachelor's degree in Ag Science and Management and added a summer job as an assistant agronomist for the Spice Islands company in Dixon to her broadening background in various agricultural commodities. In spring of 1983 she took an

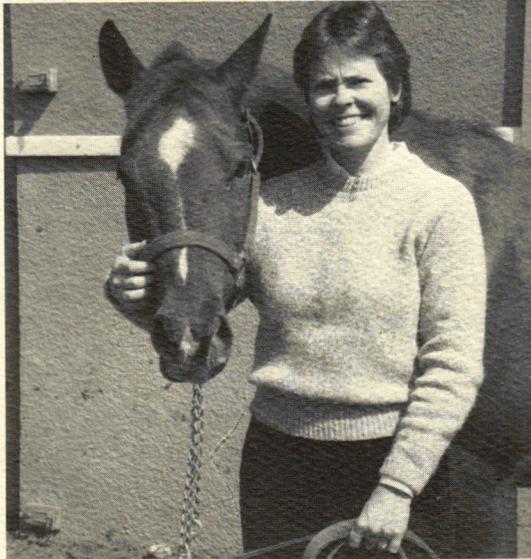
internship through Vet Medicine as a dairy herd health technician. The dairy health internship became a paid part-time job at which she worked until September 1984 when she began graduate school and a two-year Teaching Assistantship in Animal Science. "Somewhere along the line," de Grassi explains, "the Extension Services Internship Program began to require a Master's degree."

During her undergraduate study, Ria's major advisor was Tony Bywater, who now teaches in New Zealand. Ria credits Dr. Bywater with "energizing me, helping me re-focus and re-group when I was overwhelmed." Bywater recommended Ed DePeters--dairy science professor here at UCD--as Ria's graduate advisor, a choice Ria has been glad of ever since. At the risk of embarrassing him, de Grassi characterizes DePeters in such eloquent terms as "honest, dedicated, intellectually gifted but unpretentious, and with the ability to ease the impersonality of graduate school. He has enough confidence in his students to let them work on their own, but is always available to discuss problems and share his own expertise." Ria was awarded the M.S. in Animal Science in 1987.

Five years later, de Grassi recalls the "thorough and rigorously ethical" example of the Davis faculty as the greatest influence in forming her convictions regarding the professional ethics of research scientists. "There is a popular trend to criticism of and cynicism about research," Ria observes. "I might not support [research scientists] today, without that personal experience of their integrity."

In her present job with the Farm Bureau, de Grassi regularly experiences the curious ethics of politics. One of the Bureau's activities about which she is most enthusiastic is called the National Affairs Trip. Twice a year, this project sends California agriculture producers to Washington, D.C. for some total immersion, in-person lobbying with our legislators. First-timers are sent in spring, early in the legislative cycle. "Seasoned" trippers go in fall when the Houses must decide to table, pass or veto remaining legislation. De Grassi is convinced that such trips serve two very important purposes. First, they increase the producers' understanding of the difficulties and intricacies involved in passing agricultural legislation. "That first trip is a real eye-opener for most," smiles de Grassi. Second, the visits make legislators aware that California farmers will be a regular and vocal presence in Congress.

Although her dream of being a farm advisor hasn't come true the way she planned, the Animal Science Department is very proud of de Grassi's contributions to agriculture.



Focus on Faculty: JAN ROSER

["Focus on Faculty" is a new regular feature spotlighting the background and current research and teaching interests of one of our outstanding faculty members.]

"I never believed I would be a good teacher," Assistant Professor Janet F. Roser, Ph.D., said of her early fears of university teaching. That concern has been thoroughly routed over the past six years that she has been with the Animal Science Department. If you come to the UCD campus looking for Roser, try the Horse Barn before dawn or her office or lab late in the evening. Roser may work early and late because at present she has the distinction of being the only member of the department working in horse husbandry and production. In addition to her teaching and advising duties and her active research on endocrine dysfunction in stallions, she fills the gap in public service left by the retirement of the cooperative extension equine specialist. Her long hours are a visible sign of this popular professor's dedication to her work.

Roser arrived at her present research and teaching interests after a short career as a medical technician. Discovering that she needed more education to get an advanced license, Roser returned to graduate school here at UC Davis, and found that research was much more to her liking than the kind of "cookbook chemistry" required of a medical technician. Under the mentorship of her major professor, Warren Evans, she took her M.S. in Animal Science and her Ph.D. in Systemic Physiology while working as a Staff Research Associate in the department. After completion of

her Ph.D., Roser worked as a post-doctoral researcher at the Hormone Research Laboratory at UC San Francisco, and as a research biochemist for Monoclonal Antibodies, Inc. in Mountain View, CA. Her experience in the private sector gave Roser an appreciation of the importance of integrating basic science with management skills. That integrated approach to animal science is something that Roser believes "our department does particularly well."

Roser's research program focuses on endocrine mechanisms in stallions and mares which affect reproduction. Infertility and pregnancy problems caused by hormonal imbalances may account for nearly half a million dollars lost by the California horse industry every year. Roser is currently investigating four major areas of equine fertility: the role of GnRH in stallion infertility; the role of ovarian steroids and uterine proteins on early embryo development; the role of inhibin and the role of estrogen in the stallion. She hopes that breakthroughs in these areas will aid the horse industry to improve the conception rate (presently only about 65%) and increase early embryo survival.

Equine Internship Prepares Students for Jobs

Roser conducts one of the most exciting undergraduate internships in the department - the Equine Stud Management Internship Program. Each year Roser, a strong advocate of hands-on internships, selects four or five exceptional upper division students to participate in the six-month program, which is designed to give students the skills to successfully and economically manage a breeding farm. Competition is keen and students must have an extensive horse management background, including courses in production, management and nutrition. Applicants submit resumes and go through an interview process that parallels that which they will face in seeking professional employment.

Once admitted to the program, the students spend a minimum of 20 hours a week in the Horse Barn learning stallion and mare management, foal care, herd health care, training, and research and lab skills. At the end of the course, each student writes an extensive report on a topic such as equine reproductive research, nutrition management, computer management of a breeding farm or physiology of the pregnant mare. Successful completion of this intensive course gives students not only the skills and experience they need, but confidence and a professional attitude.

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INTERNATIONAL PROFILE

Dr. Carlos DeBlas

Professor Carlos DeBlas first conceived of the idea of a visit to the University at Davis when he met Animal Science Extension Dairy Specialist Don Bath. Bath had made an impressive presentation on dairy cattle nutrition at a conference at the university in Madrid where DeBlas was working. The conference was sponsored by the Spanish Foundation of Animal Nutrition, of which DeBlas is president.

DeBlas chose the Department of Animal Science at UC Davis for his twelve-month sabbatical partially because California's climate is similar to that of his Spanish homeland. Mountains and valleys contour to encourage a fertile growing area in both locations.

De Blas has been a teaching and research professor in the Department of Animal Nutrition, School of Agriculture, at the Polytechnique University in Madrid for the past twenty years. Among his publications are papers in leading American and British scientific journals and Spanish journals, and he has co-authored five books. DeBlas has served as Vice-Director of the College of Agriculture since 1989 and looked forward to a sabbatical where he could "leave bureaucratic duties, make a break in my career, and do some studying."

The workload DeBlas undertook since his arrival last April has been both challenging and fruitful. Presently, he is enrolled in nutrition and statistics courses, and is writing multiple publications, one of which is a second edition of a co-authored book about animal feeding and nutrition. He has attended dairy meetings, conferences, and visited dairy producers with Bath.

DeBlas is particularly inspired by the Cooperative Extension aspect of our Animal Science Department. He feels it is "a nice way to put the university in contact with industries" and that it is good for all areas of the department, including student enrichment, research, and the procurement of extramural funding. Spanish universities do not have an extension program and De Blas hopes to carry back this idea for cultivation in the setting of his agricultural college in Madrid.

Bath and Tulare Cooperative Extension Farm Advisor, Tom Schultz, have taken DeBlas to large dairies in Visalia. In Spain, dairies are smaller, not as technically or genetically advanced, and probably 30% lower in milk production. DeBlas thinks using

industry animals is an excellent way of maintaining a mutually supportive relationship between the universities and industry producers.

DeBlas is accompanied by his wife, Paloma, who also obtained her Ph.D. in nutrition at the Polytechnique University in Spain. She worked in Associate Professor Ed DePeters' laboratory last summer in Animal Science. Presently, she is engaged in intensive English studies and is following several courses on nutrition and agricultural economics.

31st ANNUAL DAIRY CATTLE DAY SHARES CUTTING EDGE TECHNOLOGY WITH PRODUCERS, INDUSTRY REPS

A crowd of approximately 150 people from all areas of the dairy cattle industry, California's largest agricultural commodity, met March 25 at UC Davis, to hear presentations on topics ranging from genotype classification and periparturient disease to antibiotic residue testing and milk and meat quality control. Guest speakers this year included Lee Curkendall of Antioch International who spoke on electronic herd identification, and Dr. G.A. Mein, visiting professor from the University of Wisconsin at Madison, who discussed the relationship of mastitis to milking machine technique. Dr. Juan Medrano of UC Davis' Animal Science Department presented his work on β -casein genotyping and the new DNA Analysis Laboratory recently established here to assist producers in genotyping individual animals.

After the presentations, attendees were treated to a tour of the newly remodeled milking parlor at the Dairy Barn. A grant provided by the California Milk Advisory Board enabled researchers to upgrade the equipment to support studies done not only by the Animal Science Department, but Food Science and Technology, and the School of Veterinary Medicine as well.

The annual Dairy Cattle Day, sponsored by the Animal Science Department, is one of the ways in which researchers and extension specialists are able to get "cutting edge" information to those who make use of new developments and improved techniques in dairy health care, herd management and economics.

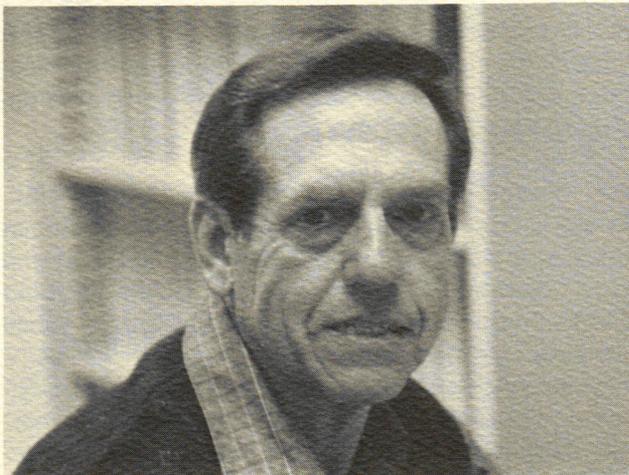
Copies of the proceedings are available for \$4.75 each. For information on ordering, call the Animal Science Main Office at 916/752-1250.

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GARRETT AND TOUCHBERRY RETIRE AFTER 40, 43 YEARS IN ANIMAL SCIENCE

Two of UC Davis' most distinguished professors of Animal Science retired this year: Dr. William "Bill" N. Garrett and Dr. Robert "Bob" W. Touchberry. Each leaves a substantial body of superior research upon which their successors will build in years to come.

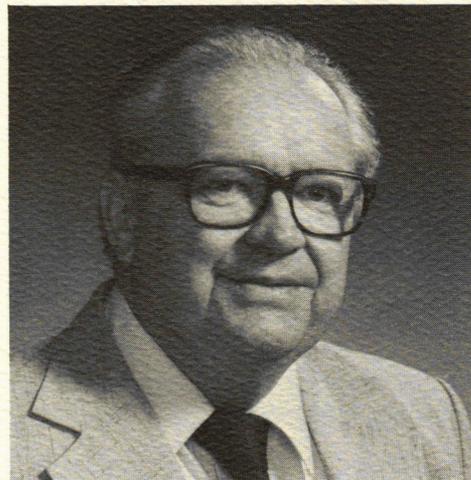
Bill Garrett formally concluded his exceptional career in October, 1991. During his 40 years in the UC Davis Animal Science Department, Garrett, in collaboration with Dr. Glen Lofgreen, developed a net energy system still used by the National Research Council as the means of listing energy requirements for beef cattle. He has also done work in the areas of roughages and byproducts utilization, and the influence of nutrients on body composition. Early in his career, at the Imperial Valley Field Station, Garrett also worked with USDA engineers to design housing that would help keep cattle cooler in hot desert environments.



Dr. William N. Garrett

In 1986 Garrett was honored with the prestigious Morrison Award by the American Society of Animal Science for outstanding contributions to the field of animal science. That same year he was presented with the Distinguished Service Award by the society's Western Section for outstanding contribution to animal agriculture in the West.

Garrett has guided the graduate studies of 29 M.S. and 7 Ph.D. students. He held the department chair from 1987 to 1990. His plans for retirement include "some travel, some fishing and going with the flow."



Dr. Robert W. Touchberry

Bob Touchberry's career has focused on genetics and animal breeding. He earned his M.S. and Ph.D. from Iowa State University. In 1948 he became Assistant Professor of Genetics in Dairy Science at the University of Illinois. From then until 1970 he taught Genetics and Animal Breeding and conducted research on quantitative genetics and dairy cattle breeding. In 1970 he began a 12-year tenure as professor and head of the Department of Animal Science at the University of Minnesota. In July 1982 he accepted appointment as Sesnon Professor and Chair of the Department of Animal Science at UC Davis. He remained Chair for five years and then resumed full-time teaching and research. During his career, Touchberry has served as major advisor for 25 Ph.D. and 37 M.S. students, and as Master Advisor for the Ag Science and Management major here at UCD.

One of Touchberry's most interesting contributions to the field of animal science has been his work in international agriculture as advisor, consultant and research geneticist to agencies from many countries including Denmark, Nigeria, Hungary, USSR, Mauritania, Ivory Coast, Benin, Niger, Upper Volta, Brazil, People's Republic of China, Morocco and Trinidad. He has also served on advisory panels for the USDA and FDA, and as a geneticist for the US Atomic Energy Commission.

Touchberry and his wife, Caroline, will be moving to their farm outside of Cedar Rapids, Iowa in August of this year. He will continue working on a collaborative project with researchers at Iowa State and the University of Illinois, but also plans to visit his home state of South Carolina.



ALONG THE TRAIL ❄️❄️

❄️❄️ **Dr. Gary Moberg** of this department was appointed Director of the Aquaculture and Fisheries program effective September 1, 1991. He divides his time equally between Animal Science and Aquaculture. Dr. Moberg's main research emphases are the biology of stress and endocrine regulation of reproduction in mammals and fish.

❄️❄️ Six University of California extension and research personnel were among 85 invited speakers at the **Second National Large Dairy Herd Management Symposium** held at the University of Florida, Gainesville on February 16-19, 1992. The six California participants were Don Bath, Animal Science, UC Davis; Greg Billikopf, Cooperative Extension, Stanislaus County; Charles Hjerpe, Veterinary Medicine, UC Davis; Tom Shultz, Cooperative Extension, Tulare County; Mark Thurmond, Veterinary Medicine, UC Davis; and Leon Weaver, Vet Med Teaching and Research Center, Tulare. The Proceedings of the Symposium, which covered various fields of dairy management, will be published as a hard-cover book.

❄️❄️ The **UC Dairy Workgroup** held its semi-annual meeting on the UC Davis campus on November 19-20, 1991. Composed of UC dairy advisors, extension specialists, research faculty, and dairy industry representatives, the group meets twice yearly to plan and coordinate educational and research projects related to the dairy industry. Major on-going projects include the waste management guidelines publication (see article on page 1), a dairy animal care practices publication in preparation, and a DNA diagnostic laboratory recently set up in the Animal Science Department (See Tales and Trails, Vol 5, No.1).

❄️❄️ **Carrie Russikoff**, formerly of the Ag and Environmental Sciences Dean's office, was hired as the Animal Science Department's Advising Associate last September. Her favorite part of the job so far has been working with students on planning their career goals. She also thinks we have "fantastic" faculty, who are very committed to the progress of their students at both the graduate and undergraduate levels.

❄️❄️ The undergraduate student organization, Block and Bridle Club is sponsoring a **Dairy Cattle Artificial Insemination Clinic**, March 28-31, at the UCD Dairy Barn. The training will be presented by Brandt Kreuzscher, UCD Dairy Herdsman. The AI clinic is an annual activity of Block and Bridle open to students and the general public.

❄️❄️ Animal Science senior **Jennifer Boutilier**, was honored with a \$1000 National Feed Ingredients Association Scholarship. Ms. Boutilier plans to attend veterinary school and would like to specialize in the area of regulatory medicine. Besides an outstanding academic record, Ms. Boutilier has served as a peer advisor and tutor.

❄️❄️ The new Animal Facilities Coordinator for the Department is **Kandee Rutledge**. Lured by our balmy California weather, she comes to us with excellent managerial credentials, having worked the past ten years for the Wisconsin State Department of Corrections as supervisor of their Farm Operations division. Rutledge replaces Roy Hull, who retired in October after over 40 years with the department.

❄️❄️ Endocrinology Ph.D. student **Cindy Daley**, formerly employed as a Staff Research Associate at the Sierra Field Station, has been appointed as the new Secretary/Treasurer of the California Beef Cattle Improvement Association (CBCIA). While working on her doctorate, Daley serves as a Teaching Assistant for Physiology 121. She is also the parent of a three-year-old son and a one-year-old daughter. There's no grass growing under Cindy's boots!

❄️❄️ Drs. Jim Oltjen and Lee Baldwin attended the **Expert Systems Conference** in Dallas, Texas, held February 27-29. Oltjen reported on his work on adaptive control -- making complex computer models fit the situation on a given ranch. Baldwin summarized how computer modeling complements research programs. The conference brought together those making use of the latest techniques in computer software in Animal Science and Production.

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**DEPARTMENT PEER ADVISORS:
VALUABLE STUDENT RESOURCES**

Mary Beth Whitcomb

Students majoring in Agricultural Science and Management (AS&M) will find Peer Advisor Mary Beth Whitcomb to counsel them in curriculum requirements and options, and to help resolve scheduling problems. This major includes options in Animal Science, Plant Science, Range Science and Food Science. Mary Beth, a pre-vet student, chose AS&M because it provides a business background, an important dimension to complement her animal science courses.

Mary Beth started riding horses at the UCD Equestrian Center and now owns her own horse. She once took a summer job as a rider for the Kingdom of Dancing Stallions (now Medieval Times) in Buena Park, California. Mary Beth also worked in a goat dairy in Vacaville and has served as a vet aide at the Large Animal Radiology and ICU units at UCD Vet Hospital.

Future goals for Mary Beth include completion of her D.V.M. and Ph.D., followed by either clinical veterinary work or teaching veterinary medicine, depending upon the job market and her interests when she obtains her degrees.



Mary Beth Whitcomb and James Kirk

James M. Kirk

As a freshman, James Kirk came to UC Davis with his eye on a veterinary career. He became interested in animals while employed in a California pet and feed store with an agricultural clientele. Now, as a senior majoring in Animal Science, Kirk feels challenged by his work in Associate Professor Chris Calvert's laboratory and is applying to the Master's program in Animal Science to further a research career in nutritional biochemistry.

Besides his laboratory endeavors, Kirk holds an important position in the Animal Science Advising Center. Animal Science students can benefit from Kirk's accumulated knowledge of the Animal Science curriculum. Like Mary Beth, he helps to guide other undergraduates through their instructional choices, and devotes as many as six hours a day at the beginning of academic quarters and typically ten hours weekly throughout the quarter advising students.

Kirk also works in Calvert's lab with high school students in the Junior Aggie Summer Research Program, JASRAP, a program which gives high school students an up-close look at university research activities.

To become Peer Advisors, James and Mary Beth were interviewed and selected from a pool of applicants. Once hired, they received training in a broad range of topics besides curriculum, such as techniques in detecting students with problems. Peer Advisors help students with such concerns as scheduling and finding internships, and keep them informed through a newsletter on student activities and opportunities and a bulletin board posted with helpful information outside the Advising Center in Meyer Hall.

To meet with either James Kirk or Mary Beth Whitcomb, call the Animal Science Advising Center at 916/752-2382 or drop by Room 1202 Meyer Hall.

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**"A LIVE CALF EVERY YEAR" IS THEME
OF BEEF AND RANGE FIELD DAY AT
SIERRA FOOTHILL FIELD STATION**

Ranchers, extension specialists and other interested parties attended the annual field day at Sierra Field Station. This year's theme focused on means of increasing conception rates and reducing calf mortality. Presentation topics covered nutrition requirements for conception; heat synchronization techniques; diseases affecting reproduction; sire breeds for first calf heifers; immunologic castration; and animal production techniques.

After an excellent lunch served by the Yuba-Sutter Cowbells, participants gathered at the cow barn for demonstrations of calving assistance and animal handling skills.

Copies of the proceedings are available from Mike Connors at the Station, phone 916/639-2501.

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ANIMAL SCIENCE DEPARTMENT FORMS DEVELOPMENT BOARD

On December 11, the first meeting of the Department of Animal Science Development Board was held. Twenty Board members attended the day-long meeting in Meyer Hall.

Eric Bradford, Department Chair, explained, "The Board was formed to help the Department meet the needs of California in teaching, research and outreach in the Animal Sciences." In a letter to Board members he suggested some possible future board activities. He felt they could provide their perspective regarding program objectives, allocation of resources and especially strategies for fund raising in the face of decreasing public funding. The Board members can also provide an important resource to the Department as guest lecturers and, in some cases, collaborate in research and extension programs.

The Board consists of 30 members representing production agriculture, commodity groups, cooperative extension, publication industry, agribusiness and educational institutions. "The diversity of interests represented by the Board members," stated Bradford, "reflects the complexity of the issues and the variety of clientele the Department serves."

The meeting was an opportunity for the Board to become acquainted with the Department goals and programs and meet the faculty. Considerable time was spent discussing priority issues and deciding on the organizational structure to handle the various issues. Gordon Van Vleck, former Secretary of The Resources Agency for the State of California, agreed to chair the Board.

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Tales and Trails

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