

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Chair's Message, Gary B. Anderson, Chair



As the landscape outside Meyer Hall under goes its springtime renewal, I hope this issue of Highlights arrives to find you blessed with only the good things in life. Highlights is intended to update alumni and friends on people and events in the Department of Animal Science. The department

is excited over signs of its own renewal, like the surrounding landscape. We have permission to recruit four new faculty members, two in Cooperative Extension and two in teaching and research. We have formally christened the new Swine Teaching, Research and Outreach Center with a ribbon-cutting ceremony and open house. The new foundation breeding stock that populates the new Swine Center arrived on schedule, minimizing disruption of teaching and research as the old Hog Barn was closed on central campus.

The Animal Science Development Board continues its work to build support to replace antiquated animal facilities.

In particular, the Board is helping with planning efforts toward construction of a new feed mill, a new dairy and a new livestock pavilion.

Our student numbers continue to grow with approximately 750 undergraduates and 100 graduate students enrolled in departmental programs. Our new postgraduate certificate program has brought new international students to the department. Animal Science faculty continue to expand their research programs and to compete successfully for scarce extramural dollars to support their research. The department continues to benefit from the generosity of alumni and friends who, through their donations, help us to sustain our traditional programs and to develop new ones.

Sadly you will also read about the unexpected loss of a good colleague and friend, Dr. Ian Garnett.

As we move into the 21st century~ the Department of Animal Science looks forward to meeting the expanding needs of our stakeholders in California and elsewhere. If we can help, please call upon us (530/752-1250: gbanderson@ucdavis.edu).

HIGHLIGHTS

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Winter/Spring 2001

Ian Garnett (1945-2001)



Ian Garnett, Senior Lecturer in the Department of Animal Science at the University of California, Davis, passed away unexpectedly on Saturday, March 3, 2001, after a brief illness. He was 55 years old.

Ian joined the Animal Science faculty in 1990 with the charge to develop a professional master's degree program in animal management. He was instrumental in establishing a joint program with the UC Davis Graduate School of Management, called the Master of Agriculture and Management (MAM) degree program, from which 25 students have graduated. He also accepted a heavy load of undergraduate teaching and advising, including at various times teaching our high-enrollment introductory animal science

courses. In recent years, Ian served as editor of this newsletter, *Highlights*, which is sent to alumni and friends across the country and around the world.

Born in England, Ian grew up in Vancouver, British Columbia. He obtained a B.S. degree in agriculture in 1968 and a masters degree in genetics in 1970, both from the University of British Columbia. He was awarded a Commonwealth Scholarship to study for the Ph.D. at the University of Edinburgh, completing that degree in 1973 under the guidance of Professor Douglas Falconer. He then joined Agriculture Canada in Brandon, Manitoba, as a research scientist in swine breeding, a position he held until 1977, when Cargill, Ltd. recruited him. He was with Cargill for 13 years, serving consecutively as marketing specialist, manager of Cargill hybrid swine, manager of livestock operations and as general manager of Cargill's swine products division. The last of these involved a move to the U.S. in 1986, where he assumed responsibility for more than 160 production units in five states

His combination of excellent academic credentials and extensive management experience in industry represented uniquely valuable qualifications for these positions, which he filled with notable success. A genuine love for teaching and working with students and an unfailingly optimistic attitude were equally important to his outstanding achievement as an administrator and teacher at UC Davis. Graduates of the MAM program hold important positions in agriculture in California and in other states and countries. In 1999 he was recognized as the Outstanding Faculty Advisor in the College of Agricultural and Environmental Sciences. He helped to develop and teach several new courses that integrated a management component with production technologies, and was the prime mover in initiation of a Field Trips course that took students to production operations in the state, which he personally led the past two years.

In addition to fulfilling his formal responsibilities with distinction, Ian was an outstanding departmental citizen and colleague, making positive contributions to many of the department's activities. He enlivened departmental parties with his whirlwind dancing. He was known for his wonderful wit and sense of humor and will be remembered for his good nature and love of family and friends.

Ian is survived by his wife Eleanore of Davis, son Stewart of Roseville, daughters Lindsay of Sacramento and Christa of Davis; his mother, Lena Garnett, sister Jill Terpstra, nephew Robert and niece Kelly, all of Vancouver, B.C., and many loving aunts, uncles, cousins and friends.

In his memory, the Ian Garnett Scholarship and Award Fund has been established. Checks may be made payable to the UC Regents and sent to the Animal Science Department, One Shields Avenue, University of California, Davis, CA 95616.

Department of Animal Science, UC Davis

HIGHLIGHTS

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Swine Teaching, Research and Extension Center Opens



The department new Swine Teaching, Research and Extension Center consists of an enclosed building (left) for farrowing and starting young pigs, a research lab, student quarters, a small classroom, an office and feed storage room. A long outdoor pen building (seen partly on right) houses mature sows and boars and young pigs over 40 lbs.

A ribbon-cutting ceremony on March 13, 2001, celebrated the opening of the department's new \$2.4 million Swine Teaching, Research and Extension Center. More than 150 people attended the event including Dean Neal Van Alfen, Provost Robert Grey, Vice-Chancellor Janet Hamilton, members of the Department Development Board, faculty, staff and students. The department drew up plans to relocate the facility several years ago when construction of Engineering 3 Building on the central campus required removal of several outdoor pens of the original Hog Barn built in 1913. The new Swine Center is located adjacent to the Feedlot east of Hopkins Road on the west campus.

Each year, the Center raises approximately 1,100 pigs for teaching, research and extension purposes. Some 600 students, many of them undergraduates, use the facility annually. Veterinary students also train there. The Swine Center is one of the department's principal research facilities. Dr. Trish Berger and her students conduct fertilization research with animals from the facility while Drs. Gary Anderson and Jim Murray and students have studied gene transfer research with pigs in recent years. Other faculty use the pigs for investigations in nutrition, reproductive physiology and behavior. Most of the pigs are eventually slaughtered, but many are provided to the School of Medicine for research and surgical training. Pigs serve as convenient models for human medicine because of their biological similarities to humans.

"Although pigs are the original couch potatoes, they are quite bright," mused Kent Parker, who has managed the swine unit for the past 18 years and who assisted in designing the new facility. Kristin Griesbach, an Animal Science major who raised pigs in her 4-H club before coming to UC Davis, agrees that pigs are very intelligent despite their reputation for being dirty and smelly. "People don't

understand pigs at all," she remarked. Griesbach and students Amber Steinhauer and Abbi Bennett joined returning Hog Barn resident Rhonda Rhoades, this fall, living in the small apartment on the upper level of the old barn before recently moving to their new dorm quarters on the West Campus. The students feed and care for the animals and learn basic herd-management skills. They jokingly note that their friends don't seem to be coming around as often since they moved to the Hog Barn, but they wouldn't trade their experiences for anything.

The new facility includes a long, covered outdoor pen-building to house mature sows and boars and young pigs 40 pounds and heavier. A large adjacent enclosed section includes areas for farrowing and starting young pigs, a research lab, student quarters, a small classroom, an office and room for feed storage. The stainless-steel pens all have concrete floors with gutters that are automatically flushed with water each day to remove manure. With the new facility's automated waste removal system, Parker is confident "most people won't even know we're here."

An entirely new certified disease-free herd is being bred at the facility from 131 pigs shipped in from Kentucky, including 80 sows. The Pig Improvement Company in Berkeley donated the pigs.

And so the doors on the old Hog Barn have swung shut for the last time signaling the end of an era. Because of its age and shingle-sided University Farm-era architecture, campus planners hope to preserve the barn for some new use so it can continue to remind us of the campus' agricultural roots.



Kent Parker, Swine Center manager, inspects a young litter of piglets born to a sow donated to the department by the Berkeley-based Pig Improvement Company.



Robert Grey (left), UC Davis provost, and Neat Van Allen, dean of the College of Agricultural and Environmental Sciences, participate in the ribbon-cutting ceremony for the new Swine center.

Dr. Sbelley Cargill (left), postgraduate researcher in Animal Science and Entomology, looks over her handiwork with graduate students **Tad Bender** and **Monna Hess**. Shelley chaired the food committee for the Swine Center Open House.



Gary Anderson (center), Animal Science department chair, discusses Swine Center matters with Department Development Board member **Jeff Poston** (left) of Jem-Dar Holsteins in Tulare while **Rick Swantz**, College of Agricultural and Environmental Sciences director of development, looks on at the Swine Center opening.



The original Hog Barn, built in 1913, will remain standing on the south side of the UC Davis campus center.

(This article was adapted from a story printed in Dateline written by Patricia Bailey of the UC Davis News Service.)

Department of Animal Science, UC Davis

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Animal Science Faculty Receive New Grants

Professor **Gary Anderson's** embryo transfer laboratory received a \$100,000 gift toward bovine cloning research from Peter Pfendler of Pfendler Ranches in Petaluma in honor of his father, David, a former associate dean of agriculture at Purdue University

Professor **Juan Medrano's** new grant from USDA-National Research Initiative will permit his laboratory to pursue gene identification in a major locus that increases animal growth. He and his students will sequence and characterize all the genes in the high growth region of mouse chromosome 10. High growth is a mouse model resulting from a mutation that produces a 40 to 50 percent increase in body size and feed efficiency it is hoped this might lead to development of genetic strategies to improve growth rate in domestic animals. The \$175,000 grant will extend for two years.

Professor **Jan Roser** and her graduate student **Nancy Hedley** received a yearlong grant last September for \$38,000 from the American Zoo and Aquarium Association Conservation Endowment Fund to develop a simple and quick field kit for elephant luteinizing hormone and progesterone. This field kit will allow zoos to monitor the female elephant cycle for ovulation and timed insemination. Both African and Asian elephants are on the endangered species list.

Dr. **Dennis Hedgecock**, participating with researchers at several other universities, will continue to work on improving crossbreeding techniques for farmed Pacific oysters for high yield with the help of a USDA grant for \$100,000 a year for four years. This grant represents 16 years of continuous funding from the Western Regional Aquaculture Consortium. The goal during the next four years is to determine early indicators of hybrid vigor and validate their use in predicting the yield of hybrid seed. The Pacific oyster is second only to tiger shrimp in yielding the highest annual production of farmed aquatic species.

Dr. Hedgecock also received a three-year grant for \$170,724 from the California Sea Grant College Program to quantify and minimize the risk that hatchery-enhancement will reduce the genetic diversity of white seabass. This project will examine the potential genetic impact of a large hatchery program to enhance white seabass, an important recreational fish in southern California.

Dr. **Doug Conklin**, Animal Science Professor, and Dr. **Raul H. Piedrahita**, Department of Biological and Agricultural Engineering, received a three-year grant for \$193,802 from the California Sea Grant College Program. The project title is "Development of a recirculation system and diet for the culture of California halibut (*Paralichthys californicus*)." Their goal is to develop in a synergistic fashion optimal diets and engineer waste removal systems as components of an integrated recirculation culture operation. Potentially, this commercially attractive marine species could be developed into another successful aquaculture venture like the California sturgeon industry.

Dr. **Wolfgang Pittroff** received a grant of \$190,464 for three years as part of the Davis component of

the Global Livestock Collaborative Research Support Program to study livestock development and develop rangeland conservation tools for Central Asia, specifically mapping primary and secondary productivity of sheep production systems in the semi-arid and arid zones of Turkmenistan and Uzbekistan.

Dr. **Graham Gall** is in the first year of a \$78,000, three-year grant on genetic improvement of tilapia with a collaborator in Israel. Their goal is to use selective breeding to develop new stocks of this important aquaculture fish that grow better in colder and more saline waters, enhancing their use in tropical and arid coastal areas.

Professor **Anita Oberbauer** received two American Kennel Club Canine Health Foundation grants. One grant for \$40,000 that began in December 2000 supports locating a genetic marker linked to epilepsy in Belgian Tervuren dogs. Cooperating investigators are Adjunct Professor **Bernie May** and Professor **Tom Famula**. The second grant, for \$24,000, which began in January 2001, focuses on defining the inheritance of idiopathic epilepsy in the poodle and giant Schnauzer. Tom Famula is also working with her on this one.

Departmental researcher Dr. **Elizabeth Maga** and collaborators **Jim Murray** and **Gary Anderson** were awarded a 2-year BioSTAR grant for \$926,068 to evaluate the feasibility of increasing the kappa-casein (milk protein) content of milk by inserting extra copies of the kappa-casein gene into dairy animals. BioSTAR is a University of California program aimed at increasing University collaboration with private industry. The industrial collaborator on the project is Pangene Inc., a Bay-area biotechnology company

Professor **Jim Murray** received a two-year USDA grant for \$180,000 to map the horse genome. Genetic mapping is essential for identifying and locating genes on horse chromosomes.

The Morris Animal Health Foundation has provided \$200,000 to a consortium of universities, including UC Davis, to study the functional genomics of the horse. Functional genomics involves the study of the expression of genes. **Jim Murray** leads the UC Davis component of this multi-university effort.

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Jackie Pisenti, New Avian Facilities Manager



We are pleased to welcome **Jacqueline Pisenti** as our new Avian Facilities Manager. Jackie has been working with birds on campus since she was an undergraduate. The California native obtained her bachelor's degree in Animal Science, followed by a MS in Avian Sciences and a PhD. in Genetics, all at UC Davis. Jackie's fascination with chickens and avian embryos began when she took Dr. Ursula Abbott's course on fertility and hatchability of the avian embryo in 1978. It was in this course that she first studied chicken embryo mutations that mimic a variety of human birth defects. Two of these mutations formed the basis for her dissertation research. More practically, her work with the mutant chicken stocks led to a job with the Genetic Resources Conservation Program, where she conducted a nationwide survey of poultry research stocks kept at universities and other institutions. Jackie has had extensive practical experience dealing with chickens, turkeys, ducks and Japanese quail, which will serve her well in her varied new tasks. Her new job will keep her hopping between teaching, supporting faculty research projects, and conducting outreach programs, along with supervising the daily maintenance of the Avian Sciences Research Facilities, the hatchery and the animal units in Meyer Hall.

Mark Rubio Brings Experience



Mark Rubio was hired November 1, 2000, to help develop and implement the department's farming plan and coordinate planting, irrigation, fertilization and harvesting of crops. He will also help maintain the department's facilities and equipment. Mark previously worked as a senior agricultural technician for the Department of Agronomy and Range Science. His family has a custom hay harvesting company that operates in Yolo and Solano counties. He attended Modesto Junior College.

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Animal Science Still Needs Your Support

Over the past decade or two, the University of California has moved from being a 'state-supported' university to a 'state-assisted' university. In order to maintain vital and rigorous research, Animal Science faculty have come to depend on extramural funds and competitive grants -funds provided outside the University- to support their programs. Animal Science faculty's success in competing for extramural funds attests to the faculty's high quality and hard work. These funds typically are awarded to support specific research projects; extramural funds are not available to support student scholarships and awards, special programs or facilities renewal. For these, the department must rely on charitable gifts to maintain the margin of excellence that we set as our goal.

Examples of special projects under development to which donations can be directed are the following:

- Professor Emerita **Ursula Abbott** has made a gift of \$11,565 to establish the **Avian Developmental Genetics Endowment Fund** in the Department of Animal Science. We anticipate that this seed money will attract other donors who wish to support the preservation and maintenance of endangered avian genetic stocks useful in studies of vertebrate embryonic pattern formation, teratology and biomedical research applicable to other vertebrates, including humans. UC Davis is one of a handful of research institutions possessing a significant number of such stocks, many of which were developed here. Administered by the Department of Animal Science, this grant will be left to grow through additional contributions and interest until it reaches \$75,000, and then its annual interest accruals will be applied towards its objectives.
- The **Avian Sciences Faculty Scholarship** has been officially renamed by the University as the **Kratzer, Ogasawara and Vohra Scholarship**, in honor of contributions made by these faculty emeriti to the fund. Professors **Howard Kratzer**, **Frank Ogasawara** and **Pran Vohra** brought international distinction to the former Avian Sciences Department through their research and teaching on nutrition and reproductive physiology.
- The family of **Ian Garnett** has established the **Ian Garnett Scholarship and Award Fund** in his honor to support worthy Animal Science students in various endeavors.
- The **Educational Enhancement Fund**, established by a donation from **Robert Laben** and his wife **Dorothy** and subsequently enlarged by contributions from Eric Bradford, Herbert Furrer and Max and Denise Rothschild, made its first award last fall to 12 undergraduates to help them attend the California Cattlemen's Association Convention in Reno. This fund is used to broaden students' experiences by supporting educational activities.

To donate to any of these funds or other Animal Science projects, such as the proposed **Livestock Pavilion, Dairy Facility** or **Nutrient Processing Facility**, please use the enclosed envelope addressed to the Department of Animal Science, enclose a check or pledge payable to "UC Regents" and note on the

envelope or the check which fund, if any, you wish to support. For more information visit our [Donation and Gifts](#) web page.

Department of Animal Science, UC Davis

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Postgraduate Certificate Program in Animal Science

A new Postgraduate Certificate Program (PGCP) in Animal Science offers students the opportunity to continue their animal science education beyond the Bachelor of Science degree without the additional research emphasis of a formal graduate degree. Applicants are expected to have a B.S. in animal science or a related discipline. International students, in particular, find the structure of this one-year certificate program ideal for advanced training in their animal science disciplines.

Participants choose an area of emphasis within animal science and in conjunction with their graduate adviser and faculty mentor, select a minimum of 18 units from a wide range of courses—some of which are in other departments.

Depending upon the participant's interests, training emphasis can be individually tailored to areas such as animal breeding and genetics, nutrition, physiology, behavior and husbandry of aquatic animals. Other areas of specialization can be organized, such as conservation biology, biotechnology, meat science and technology or specific topics in animal production. The program combines course work, laboratory instruction with possible fieldwork in animal science and related disciplines and participatory and non-participatory seminar requirements.

Successful completion of the program results in a Postgraduate Certificate in Animal Science, within the designated specialization, conferred by the College of Agricultural and Environmental Sciences and University Extension.

Jorge Gaston Prieto, from Argentina, was Animal Science's first PGCP student to enter and complete the program in dairy nutrition with Professor **Ed DePeters** serving as faculty mentor. Gaston subsequently extended his PGCP studies to obtain a master's degree, which he will complete this year.

In Fall 2000, two new PGCP students from Denmark arrived. **Brian Brodersen** is being mentored by Professor **Anita Oberbauer**, while **Ulrik Simonsen's** faculty mentor is Professor **Chris Calvert**. Brian and Ulrik, currently M.S. students in Denmark, plan to use the PGCP coursework towards advanced degrees at their home institutions.

New Faculty Positions Approved

Four new Animal Science faculty positions have been approved for recruitment by the College of Agricultural and Environmental Sciences: an Assistant Animal Genomics Specialist in Cooperative Extension, an Assistant Environmental Specialist in Cooperative Extension, an Assistant Professor who will teach lactation and conduct research in physiological genomics of lactation and an Assistant Professor who will teach and conduct research in physiological genomics of animal stress and welfare. Genomics is the study of the structure and function of the whole genome of an organism, undertaken in simultaneous fashion. The Environmental Specialist will focus on air and water quality issues relating to

animal production in California's increasingly urbanized/suburbanized environment.

New Support and Stallion for Equine Program

Kay A. Devine had a great affection for horses. Even though she attended the University of California, Berkeley, she specifically designated that a portion of her estate be distributed to the department because of its excellent equine teaching and research program. After Ms. Devine's death in 2000, the **Kay A. Devine** fund was established to support graduate education, including fellowships to recruit high-caliber graduate students interested in equine science. Should excess funds be available, they will be used to support special projects that advance the equine program.

In mid-December, **Okies Leo Rose** stepped off a horse trailer to join other stallions standing at the Animal Science Horse Barn. **Mary Kittredge**, 88, of Sedona, Arizona, recently donated this outstandingly bred Quarter Horse sire to the Animal Science breeding program. Okies Leo Rose was in the top 20 at the 1989 National Reining Horse Association futurity and Reserve World Champion in Senior Reining at the 1992 AQHA World Show. His foals are carrying on the family traditions.

Mrs. Kittredge had always followed equine research at UC Davis and was inspired to donate this handsome bay stallion she had bred and raised herself because she wanted to be sure he had a good home. Okies Leo Rose is available for breeding to outside mares for \$1000 stud fee. Contact Brent Brown, Animal Science Equine Facilities Manager, 2251 Meyer Hall, Davis, CA 95616, 530-754-4156 or bsbrown@ucdavis.edu



Okies Leo Rose, winner of multiple national reining championships, demonstrates a slide. This handsome bay has joined the Animal Science stud burn and is available for outside stallion breedings.

HIGHLIGHTS

A PUBLICATION FOR OUR ALUMNI AND FRIENDS

Winter/Spring 2001

Notable Notes

- A department reception was held on March 28 to honor the loyal service of Animal Science staff members **Joel Van Eenennaam** (15 Year Service Award), **Dana Van Liew** (20 years) and **Vince Castillo** (40 years).
- Sacramento News & Review (February 22, 2001) published "Sacramento's 100: Our ultra-subjective listing of the region's most interesting citizens." Guess who was #1. **Gary Anderson!** (Of course, it was alphabetical.) The news journal noted that this "UC Davis animal science professor is an international leader in the field of embryo physiology and genetics, and a close colleague of Ian Wilmut (who brought us Dolly, the cloned sheep). Anderson's current research goal is to isolate embryonic stem cells from pigs, basically trying to figure out how to genetically alter the molecules of their organs so as to one day save human lives. Anderson recently received a \$30,000 prize for undergraduate teaching and scholarly achievement. Students give him high marks for his enthusiasm, sense of humor and 'cool' neckties."

RETIREMENTS:

- **Vince Castillo** retired at the end of 2000 after working more than 40 years at the Avian Sciences Facility. Vince began in 1960 as an assistant poultryman and progressed in his supervisory responsibilities to manager of the avian facility on the Hopkins tract. Vince has been an exceptionally loyal and hardworking departmental member. Originally working with only chickens and turkeys, he gradually added game, wild and pet birds. He dealt with the rapidly expanding government regulations affecting bird care and disease control and helped teach management and bird care to a variety of students.
- **Bill Hilden** will retire in April after 27 years at the University. In 1981 he left his post as Assistant Dean of Finance at University Extension to come to Animal Science as business officer, replacing Tom Stowers. He has particularly enjoyed the great variety of responsibilities in his job that result from the department's many facilities and activities. He especially appreciates the high quality and down-to-earth attitudes of the Animal Science faculty.
- **Dave Tafoya** started with the department in 1986. First employed as maintenance person on the farm crew, Dave took over the waste management responsibilities when Ed Macias retired. Dave operated and maintained several large trucks and tractors and monitored the distribution of over 8 million pounds of waste a year over 400 acres of campus fields. Waste management is one of the least glamorous but most important jobs supporting our animal facilities.
- **Joyce Max** has been with Animal Science since March of 1989. She first assisted and then replaced Martha Hayman in the business office, then did the same for Loi Dossa. When the new

DaFIS accounting system was introduced in 1997, Joyce quickly became one of the campus' more accomplished users. While looking forward to more walks into town, work in the yard and visits to the family cabin in Trinity County, she says she will miss the faculty, staff and students of Animal Science. We will likely miss her competence and bright smile even more.
