New Center for Comparative Medicine Names Director

Following an international search, a director has been named for the UC Davis Center for Comparative Medicine, a unique joint venture between the School of Veterinary Medicine and the School of Medicine to carry out research on human diseases.

Stephen W. Barthold, professor and head of the Pathology Unit in the Section of Comparative Medicine at the Yale School of Medicine, became director of the new Center for Comparative Medicine and professor in the Department of Pathology, Microbiology and Immunology June 1.

Dr. Barthold (DVM, UC Davis '69; MS, PhD in comparative pathology, University of Wisconsin '73, '74), who is a laboratory animal pathologist and director of an NIH-funded Lyme disease program, is a world renowned comparative pathologist. He has been a faculty member at Yale University School of Medicine since 1974 and is a diplomate of the American College of Veterinary Pathologists.

“The Center for Comparative Medicine will focus on mechanisms of persistent infections of diseases common to animals and humans,” says Dr. Barthold. “The host-agent interactions are probably the most complex interactions to study. There is already strength here on campus with research on SIV/HIV. I’d like to expand to other agents, bacteria and even parasites, if we’re so lucky to recruit such people in.” Six new positions will be filled in addition to the current UC Davis faculty members who choose to join the center.

Flood Survivor Delivers Foal

With the help of veterinary medicine, Queen Freckles Too, a Quarter Horse belonging to Sandy and John Glynn of Arboga, Yuba County, overcome a series of life-threatening difficulties as she carried her foal to term.

On January 4, rescue volunteers Dr. John Madigan and Butch Littrell of UC Davis found Freckles hopping on three legs where she was stranded in neck-deep water, and led her to higher ground on a levee.

Dr. Madigan says, “I could feel a big hole in her leg, but couldn’t even get the leg out of the water.” She had fallen victim to injury from objects such as hidden barbed wire fences, lawn mowers, tractors, propane tanks or other equipment that had become dislodged and obscured by the high water.

The next day, UC Davis faculty member Dr. Robin Kelly treated Freckles and other rescued horses that had cuts and puncture wounds. When the water at the levee

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Rescued Horse Recovers from Flood Injury and Pregnancy Complication

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Center for Comparative Medicine
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“The presence of a medical and veterinary school on the same campus who appreciate each other from the top down is really a very unique environment,” says Dr. Barthold. “To have a building and a research program that merges the two is wonderful.”

Dr. Barthold’s area of interest is Lyme disease, which will continue as a research program at the center. Dr. Barthold and his colleagues at Yale discovered and developed a vaccine for Lyme disease a few years ago in animal models that has just finished successful clinical trials. He expects that within about a year and a half the human Lyme disease vaccine, which is a genetically engineered recombinant protein vaccine, will be on the market. His current research on Lyme disease aims to identify the genes that will be on the market. His current research on Lyme disease aims to identify the genes that stimulate effective host immunity in the hope of developing a therapeutic vaccine in the future, he says.

Another major focus of the center will be to serve teaching at all levels. “Hopefully,” says Dr. Barthold, “we can attract the very best to scientific careers. We’ll be integrating teaching as much as possible into many different programs across campus in both schools and beyond the schools.

“Part of comparative medicine in my mind, as a veterinarian,” Dr. Barthold says, “is the professional discipline of laboratory animal medicine. I’d like to see young veterinarians attracted to the discipline of laboratory animals as a species specialization. Laboratory animals are a huge economic base, if you want to consider them a domestic species. We’re talking about billions of dollars involved in biomedical research. They are very sophisticated creatures—they require the very best in the profession to support them and do research with them.”

The Center for Comparative Medicine will, in addition to laboratories, house core facilities for a mouse biology program that is evolving on campus for genetically altered mice. “The genetically altered mouse has emerged as a preeminent tool for biomedical research nowadays. It’s only logical that we centralize these services for efficiency and effectiveness,” says Dr. Barthold. He hopes that collaborations and programs related to the mouse biology program will develop at the center, saying, “There are a number of people in the College of Agriculture and Environmental Sciences, the Division of

School Hosts Trade Talks Between U.S. and China

The Department of Pathology, Microbiology and Immunology hosted a round of agricultural trade talks between the United States and the People’s Republic of China January 27 through February 3, culminating in the signing of export trade protocols for livestock and livestock genetics. Dean Bennie Osburn and department chair James MacLachlan represented the school, in part selected as a meeting site because of its many accomplishments in animal disease research.

Chinese delegates included directors of the Chinese Ministry of Agriculture’s Animal and Plant Quarantine Service. The USDA Animal and Plant Health Inspection Service (APHIS) negotiating team, led by the deputy administrator of veterinary services and the senior staff veterinarian, included the APHIS director in Beijing. Members of the USDA Food Safety Inspection Service also met with the Chinese delegation to discuss inspection procedures for beef, pork and chicken products.

Two School Units Named WHO Collaborating Centers

The World Health Organization (WHO) has designated the Veterinary Public Health Laboratory of the school’s Department of Population Health and Reproduction as a WHO Collaborating Center on New and Emerging Zoonoses. Faculty members will conduct laboratory research on methods for detection, perform molecular epidemiological studies of new pathogens, establish appropriate animal models and develop and test appropriate vaccines or treatments to prevent or cure new and emerging zoonoses.

The Department of Population Health and Reproduction’s Food Safety Unit has been designated as a WHO Collaborating Center on Food Virology, with Dean Cliver as head. This center will provide information and consultation services to food virology researchers, research program planners and food control authorities. Faculty members will conduct laboratory research to develop methods to prevent disease transmission via food or water, including detection of viruses, and will investigate the persistence or inactivation of viruses in food and water.
School Members Aid Disaster Victims at Home and Abroad

School of Veterinary Medicine students, staff and faculty members volunteered to help with rescue efforts and care for animals affected by simultaneous disasters that occurred in early January—severe flooding in Northern California and a major oil spill in Japan.

Northern California Floods

A group of 24 veterinary students received the 1996-97 UC Davis Community Service Award for outstanding volunteer service to animal and human victims in the aftermath of the New Year’s flooding.

During the first weekend of January, just after the height of the deluge, a small group of veterinary students and faculty members went into the flooded area near Olivehurst, California, to help rescue and treat animals stranded in high water.

During the next several days, as hundreds of animals were brought in to the Placer County Fairgrounds emergency shelter, veterinary students served in eight-hour shifts providing care and daily medical management for large and small animal disaster victims including dogs, cats, rabbits, horses, pigs and cattle. The students also collected blankets, food and clothing for human flood victims.

The students treated sick and injured animals around-the-clock, built kennels, photographed animals for identification by their owners, gave tetanus vaccinations, sutured lacerations and treated eye infections. The students provided help in housing, feeding, grooming and exercising displaced animals as well as help in reuniting animals with their owners. In addition, they provided owners with information on the care of infections and wounds on their pets and livestock, hoof care, diet and the importance of vaccination.

Japan Oil Spill

When the Russian oil tanker Nakhodka ran aground in the Sea of Japan January 2 and split apart, the resulting 962,000 gallon oil slick (one-quarter the volume of the 1989 Exxon Valdez spill) spread along the west coast of Honshu, the main island of Japan.

Scott Newman, oil spill response veterinarian with the school’s Wildlife Health Center, was invited with Harry Carter of the U.S. Geologic Survey and Dr. Roger Helm of the U.S. Fish and Wildlife Service, to provide advice and assistance to the Japanese government in assessing the extent of wildlife injury and to provide help with oiled wildlife care. Dr. Newman says, “Since this was only the second large-scale spill involving wildlife in Japan, veterinarians, biologists and rehabilitators were very interested in learning the best techniques available for oiled wildlife care.”

The three traveled throughout the spill zone and provided assistance to the Japan Environment Agency, the Oiled Bird Information Committee, the Wildlife Rescue Veterinarian Association, and government and non-profit organizations including the Wild Bird Society of Japan and the Japan Alcid Society. Dr. Newman, who focused on rehabilitation issues, visited several temporary seabird facilities, where the majority of birds being treated were from the Alcid family—Ancient Murrelets, Marbled Murrelets, Japanese Murrelets and Rhinoceros Auklets—along with several other species including Red-necked Grebes, Black-Tailed Gulls, Japanese Cormorants and Black Scoters. The Japanese Murrelet is an endangered species and is the rarest Alcid in the world. The Streaked Shearwater, another endangered species, may also be affected during its breeding season in Japan.

“…veterinarians, biologists and rehabilitators were very interested in learning the best techniques available for oiled wildlife care.”

With the aid of an interpreter, Dr. Newman conducted numerous seminars and training sessions for Japanese wildlife personnel on care, rehabilitation and release of oiled seabirds, including demonstrations on cleaning and feeding oiled birds, and techniques for monitoring the health of cleaned birds—procedures that are used by participants in California’s Oiled Wildlife Care Network (OWCN), which is administered through the Wildlife Health Center. Some presentations were videotaped, and almost all were attended by the media. Information presented by Dr. Newman was also translated into Japanese and made available on the Internet.

Japanese parliament member Ms. Akiko Domoto and the Wildlife Rescue Veterinarian Association of Japan are interested in establishing an oiled wildlife care program similar to the OWCN, says Dr. Newman. The three scientists helped Japanese care personnel establish protocols for collection, handling, health assessment, cleaning, care, rehabilitation and release of oiled wildlife, and gave recommendations for documenting wildlife injury and implementing training programs for future oil spill response work.
Faculty News

**Barry Ball** (DVM, University of Georgia ’81; PhD in reproduction, Cornell ’87) joined the faculty in December as professor in the Department of Population Health and Reproduction. Dr. Ball is the first recipient of the John P. Hughes Endowed Chair in Equine Reproduction. He comes to UC Davis from Cornell University, where he was associate professor of theriogenology. He completed a residency program in reproduction at the University of Florida before he began his graduate work, and he is a diplomate of the American College of Theriogenologists.

Dr. Ball’s primary research focus is in the area of reproductive biology with a special interest in the events of early pregnancy, particularly the interrelationships between gamete and oviductal function, the events involved in fertilization and in early embryonic development in mares. He will be responsible for lectures and laboratories in the core reproduction course and the elective equine theriogenology and equine reproduction courses. He is also a member of the Equine Reproduction Service of the Veterinary Medical Teaching Hospital (VMTH).

**Larry Galuppo** (DVM, UC Davis ’90) became assistant professor in the Department of Surgical and Radiological Sciences last July. He completed a residency in equine surgery at UC Davis in 1989, served as assistant veterinarian in the VMTH Large Animal Clinic from 1991-94, was adjunct instructor in the Department of Anatomy, Physiology and Cell Biology, and served as assistant professor of large animal surgery at Oregon State University. She returned to UC Davis in October 1995 as a post-graduate researcher in Anatomy, Physiology and Cell Biology. She is a diplomate of the American College of Veterinary Surgeons.

Dr. Galuppo’s research is directed toward equine musculoskeletal problems and fracture repair, particularly the management of long bone fractures. He is a member of the VMTH Equine Surgery Service with primary responsibility for diagnosis and treatment of equine diseases. He will provide clinical teaching for residents, and will contribute to the professional (DVM) and graduate academic (MS and PhD) programs of the school.

**Melinda MacDonald** (DVM, Virginia-Maryland Regional College of Veterinary Medicine ’85; PhD, UC Davis ’95) joined the Department of Surgical and Radiological Sciences faculty as assistant professor last August. She completed a residency in equine surgery at UC Davis in 1989, served as assistant veterinarian in the VMTH Large Animal Clinic from 1991-94, was adjunct instructor in the Department of Anatomy, Physiology and Cell Biology, and served as assistant professor of large animal surgery at Oregon State University. She returned to UC Davis in October 1995 as a post-graduate researcher in Anatomy, Physiology and Cell Biology. She is a diplomate of the American College of Veterinary Surgeons.

Dr. MacDonald will provide clinical teaching for residents as a member of the VMTH Equine Surgery Service, and she will contribute to the professional and graduate academic programs of the school. She will also be involved in the Veterinary Orthopedic Research Laboratory. Her research in the field of equine musculoskeletal disease is focused on equine articular cartilage.

**Johanna Watson** (DVM, UC Davis ’86; PhD in comparative pathology, UC Davis ’94) became assistant clinical professor emeritus of zoological medicine, professor emeritus of zoological medicine, has recently published, with School of Veterinary Medicine alumnus Aggrey Ayuen Majok (MPVM ’89, PhD ’92), Development Among Africa’s Migratory Pastoralists, which lays out some realistic proposals for supplying basic health and other amenities to Africa’s 30–50 million nomadic livestock herders.

Dr. Watson’s primary area of research is respiratory immunology in horses. While completing her PhD, she was a research fellow on an NIH Training Grant in Interdisciplinary Studies in Pulmonary Medicine through the UC Davis School of Medicine.

**John Pascoe**, associate dean for academic programs, will oversee activities of the Center for Equine Health until a new director can be identified, as **David Wilson** has stepped down from directorship of the center. Dr. Wilson, who has provided a valuable service to the school, wishes to resume his full-time commitment to teaching, research and clinical service activities.

**John Pascoe, Eugene Steffey, and Larry Galuppo** of the Department of Surgical and Radiological Sciences, and **Murray Fowler**, professor emeritus of zoological medicine, performed surgery last March on Belle, a 6,910-pound elephant, at the Washington Park Zoo in Portland, Oregon. The 45-year-old Asian elephant had the middle toe of her left front foot amputated to alleviate pain and prevent the spread of a bacterial infection, pododermatitis, that had migrated to the bone.

**Calvin Schwabe**, professor emeritus of epidemiology, has recently published, with School of Veterinary Medicine alumnus Aggrey Ayuen Majok (MPVM ’89, PhD ’92), Development Among Africa’s Migratory Pastoralists, which lays out some realistic proposals for supplying basic health and other amenities to Africa’s 30–50 million nomadic livestock herders.
Beginning this year, students from each of four California universities, including UC Davis, will be awarded full scholarships from a generous endowment fund established by the Foster family, owners of Foster Farms, the West’s largest fresh poultry producer and independent dairy.

The Foster family has established the Max and Verda Foster Memorial Scholarship Endowment Funds, which will provide a $400,000 endowment for scholarships to be awarded each year to UC Davis students interested in pursuing careers in food animal medicine. Scholarship recipients will be selected based on a variety of qualifications including aptitude, academic standing and demonstrated experience in their field of interest.

In addition, this year two third-year School of Veterinary Medicine students, Pete Kvarnstrom and Colleen Taugher, each received an $8,000 scholarship presented during the May Awards Ceremony. In future years, scholarship funding will be generated from the endowment. The Foster family hopes that as the endowment funds mature, more students will benefit each year.

Bennie Osburn, dean of the School of Veterinary Medicine, says, “We are honored to have the names of Max and Verda Foster so prominently associated with our scholarship program. The Foster family is a recognized leader in California agricultural production. This endowment also makes them a leading supporter of veterinary and agricultural education in the state.”

Max and Verda Foster Memorial Scholarship Endowment Funds have also been established at California State Polytechnic University, San Luis Obispo, and the Fresno and Stanislaus campuses of the California State University for students pursuing careers in poultry management, dairy science, agribusiness or agricultural education.

Foster Farms was founded in 1939 by Max and Verda Foster, who purchased their initial farm near Modesto with a cashed-in life insurance policy. Today the company delivers more than 10 million pounds of fresh poultry each week to grocery stores throughout the western United States.

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**OBJECTIVES**

- Evaluate pharmacokinetics of single-dose intramuscular administration of ceftiofur in psittacines
- Compare pharmacokinetics in small versus medium sized psittacines

Lisa Harrenstien, DVM, second-year resident in zoological medicine, was awarded “Best Avian, Exotics, Wildlife or Lab Animal Study” for her research seminar on antibiotic dosage and half-life in cockatiels and Amazon parrots.

Cockatiels photo: Don Preisler

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**House Officer Seminar Day**

The Seventeenth Annual House Officer Seminar Day, sponsored May 21 by Pfizer Animal Health and Hills Pet Nutrition, featured presentations by 27 residents. Their seminars covered research in emergency/critical care, animal behavior, flock health, neurosurgery, radiology, reproduction and cardiology, and several more of the 23 specialty areas offered at UC Davis, which has the largest and most diverse residency program in the country. Four presenters were honored with awards: K. Gary Magdesian, DVM, third-year resident in large animal medicine, Christopher Smith Memorial Award for Most Outstanding Equine Research Presentation; Lisa Harrenstien, DVM, second-year resident in zoological medicine, Best Avian, Exotics, Wildlife or Lab Animal Research Study; Kim Sprayberry, DVM, third-year resident in large animal medicine, Best Large Animal Research Study; and Carol Norris, DVM, first-year resident in small animal medicine, Best Small Animal Research Study.
Reproductive Health

Stallions or mares may have problems with fertility due to age, active or prior selection, or any number of complex causes. Veterinary clinicians and researchers are working to solve reproductive problems and to assure the health of the breeding horse as well as the health of the fetus.

Research in fertilization techniques may help stallions with low sperm counts or low sperm motility (locomotion) to be able to reproduce. Mares that consistently do not conceive, breed mares that conceive but can't maintain a pregnancy for the length of gestation, older horses or performance horses that are still winning accolades on the track or in show arena may be animals that could benefit from assisted reproduction. For more information about equine reproductive health programs and assisted reproduction, contact the Equine Reproduction Service of the UC Davis Veterinary Medical Teaching Hospital at (916) 752-6630.

New Investigations

Faculty research projects are underway at UC Davis to elucidate sperm function and sperm longevity after breeding, early development of the egg, and new technologies to circumvent reproductive problems in horses. Dr. Barry Ball is studying early embryonic losses of fertilized eggs in the oviduct or during implantation, and interaction of the egg and sperm at the cellular level. Dr. Irwin Liu is working to understand uterine defense mechanisms in the chronically infected mare, endocrine patterns associated with subfertility and infertility in mares, and methods for immunonconception in fetal horses. Dr. Juan Vasquez is working on insemination techniques such as manual insertion of sperm from a subfertile stallion into a mare's oviduct.

Health of the fetus

Biophysical profiles from early gestation to term

Postgraduate researcher Catherine Renaudin is recording “biophysical profiles” of developing equine fetuses. Each profile is a collection of measurements of physiological processes, including baseline heart rate and measurements of developing organ structures, such as blood vessels or the eye. Dr. Renaudin is studying fetal growth patterns in order to establish an optimal set of measurements and the best fetal age at which to assess normal or abnormal development. A set of baseline parameters will allow equine practitioners to check normal growth and development of a fetus, or to detect pregnancy problems. It is also possible with the use of ultrasonic imagery to observe the sex of the fetus early in development.

Enhanced fertilization

Intracytoplasmic sperm injection

Researchers are working to develop the technique of intracytoplasmic sperm injection (ICSI) for practical application in the performance horse. Using ICSI, a single sperm cell is injected into a mature egg (oocyte) using a high-powered microscope and specialized pipets for holding the oocyte and injecting the sperm cell.

The goal of Drs. Irwin Liu, chief of the VMTH Equine Reproduction Service, Gustavo Carneiro, post-graduate equine researcher, Juan Jose Vasquez, resident veterinarian, and Gary Anderson, professor of animal science, is to more fully understand what constitutes maturity of the egg cell, and to determine the optimal time of injection. Only one sperm is needed per egg, which would be an advantage for stallions with low sperm counts. Another advantage of the technique is that fertilized eggs can be transferred directly to the oviduct of the egg donor or other synchronized recipient mare, without the need for prolonged culture outside the horse.

Assisted Reproduction

The Equine Fertility Clinic at UC Davis Veterinary Medical Teaching Hospital is responding to the need within the horse industry for semen cryopreservation (cold storage or freezing) and embryo transfer.

Artificial insemination

Assisted reproduction services include collection, processing, short- or long-term storage and distribution of each stallion’s semen. Cold storage allows insemination at remote domestic locations, while freezing allows insemination at international venues and preserves breeding potential for future generations.

Embryo Transfer

A developing egg or “embryo” can be collected from a donor mare that may have difficulty carrying a foal to term. The embryo is evaluated microscopically and can then be transferred to a recipient mare at the same stage of her reproductive cycle.

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Medical Ecologist Investigates Risk of Waterborne Pathogens from Livestock

Environmental animal health specialist and medical ecologist Rob Atwill is responding to a need for unbiased, scientific information about waterborne pathogens.

Using quantitative epidemiology, Dr. Atwill and several colleagues are investigating the source, transmission and prevalence of Cryptosporidium parvum, Giardia duodenalis and other microbes that could potentially contaminate lakes, rivers and streams, affecting human health. They are working to determine which species is present.

Dr. Atwill and his colleagues are working to develop DNA fingerprinting techniques to accurately define which C. parvum species is detected from a particular livestock or wildlife host. They also aim to define a scientifically valid threshold for laboratory tests, in order to eliminate false positives or negatives when testing samples for C. parvum.

"At stake is not only water quality and human health, but also the economic viability of those citizens who depend on California rangeland for grazing."

provide scientific information to California ranchers, agricultural leaders, water district officials, public and animal health officials and federal land managers such as Forest Service and Park Service personnel.

Outbreaks of gastrointestinal illness attributed to infection by the single-celled parasite Cryptosporidium parvum, such as the 1993 contamination of Milwaukee drinking water that led to illness in 400,000 people, have put considerable pressure on state public health agencies and regional water districts to develop watershed management plans that will reduce the risk of human illness. The source of waterborne pathogens typically remains unknown due to lack of sophisticated techniques for differentiating pathogens from wildlife and livestock.

Illness occurs when an infected individual sheds parasite oocysts (eggs) in feces, and a susceptible individual ingests the oocysts directly or through contaminated food or water. In humans C. parvum can cause severe stomach cramps, diarrhea and fever. Once ingested, there are no highly effective antibiotics for eliminating the parasite from the gastrointestinal tract. The infection is self-limiting for those with competent immune systems—clinical cryptosporidiosis lasts a few days to several weeks.

But the severity of illness from C. parvum, particularly for anyone with a weakened immune system—AIDS or chemotherapy patients for instance—has prompted the U.S. Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention, state and local public health agencies, and regional water districts to seek ways of reducing contamination of surface water by this parasite.

Cattle are often perceived to be a leading environmental source of waterborne C. parvum, and the EPA has warned that new restrictions will likely be placed on the location and management of livestock operations situated within watershed regions.

Dr. Atwill says, “At stake is not only water quality and human health, but also the economic viability of those citizens who depend on California rangeland for grazing.” Such restrictions will also affect the consumer who relies on ample and affordable meat.

Scientific evidence to support the claim that cattle are a significant source of C. parvum in surface water is incomplete. Better information is needed on the distribution of C. parvum shedding in beef cattle herds located on open range with access to important watersheds.

Dr. Atwill says “It is premature at this time to claim that cattle production is a leading environmental source of infective C. parvum for our western watersheds.” Cryptosporidium is found in 60–90 percent of all surface waters of the United States.

"It is premature at this time to claim that cattle production is a leading environmental source of infective C. parvum for our western watersheds."

Oocysts from the organism have also been found in pristine surface waters, indicating that Cryptosporidium occurs naturally in watersheds. Little is known about oocyst shedding from wildlife species with access to surface waters or what contribution humans themselves make to surface water contamination.

There are various Cryptosporidium species, some of which are noninfectious to humans. But with current laboratory assays to detect Cryptosporidium, it is often difficult to determine which species is present.

Some California Water districts have excluded recreational use of horses within watersheds contributing to their reservoirs out of fear that equine manure could contaminate water supplies and lead to human disease, despite a near absence of scientific data to support such a policy.

In order to determine if horses used for recreational riding on public lands in California backcountry are a significant source of Cryptosporidium parvum or Giardia duodenalis, Rob Atwill and colleagues conducted a pilot study of 91 horses. None of the animals were shedding parasite eggs after having been ridden in the backcountry, which led to the conclusion that recreational riding does not appear to pose a significant risk for contamination of regional surface water supplies by these microbes.

The investigation has been expanded by funding from the Center for Equine Health at the University of California, Davis, and the Centers for Disease Control and Prevention, U.S. EPA and other groups have expressed interest in the results of current research, which includes development of a DNA fingerprinting technique to distinguish between strains of C. parvum shed by horses, humans, wildlife or other livestock, as the strain found in horses may not be the same strain that infects humans.
The Dairy Food Safety Laboratory (DFSL), nationally recognized for leadership in on-farm food safety and animal health issues, was formally dedicated last December with a ceremony and tour of its facilities at the Veterinary Medicine Teaching and Research Center, Tulare.

Responding to a critical need for applied research on dairy herd health and on-farm food safety problems, the DFSL provides a consistent, rapid response in applied research as health and food safety questions arise. The DFSL also provides a facility primarily focused on dairy production for teaching undergraduate and graduate students in animal science, biological sciences, food science and veterinary medicine. DFSL research projects have included investigation of mastitis outbreaks and emergence of mycoplasma mastitis on various farms, defining the accuracy of antibiotic residue testing in milk and meat, and identifying and documenting problems with commercial vaccines and laboratory diagnostic tests for E. coli O157:H7.

Director James Cullor has developed the J-5 vaccine against bovine transmission of infections such as Salmonella and E. Coli. Further evaluations of the safety, efficacy and cost-effectiveness of the vaccine are underway, along with research on consolidating the three-shot vaccine into a single injection for both cows and calves. Other ongoing research includes evaluation of natural antibiotics; validation of chemical and microbial residue test kits; improvement in milk quality; mastitis diagnosis and prevention; on-farm food safety; chemical and microbial contamination of milk and meat; and animal health and well-being.

For more information on DFSL programs, contact Dr. James Cullor, (209) 688-1731 or jscullor@ucdavis.edu, or check the Internet World Wide Web site, http://www.vetmed.ucdavis.edu/vmtrc/wwwtxt.html, for DFSL news and information.

The DFSL provides a consistent, rapid response in applied research as health and food safety questions arise.

New Software for Teaching

UC Davis is the national leader in developing state-of-the-art educational computer programs for teaching veterinary medicine. Utilizing advanced computer imaging equipment, faculty members create interactive multimedia software programs, which are available to students during laboratory sessions as well as 24 hours a day for independent study. More than 200 courseware programs have been developed to feature a variety of subjects including microbiology, parasitology, anatomy, pathology, cytology and radiology. Interactive courseware enhances the overall teaching program and helps to address the different learning styles and needs of individual students.

The Virtual Heart, produced collaboratively in the School of Veterinary Medicine, is an interactive multimedia teaching unit on the structure and function of the canine heart. The software is used in the school’s veterinary medical curriculum and in an outreach effort to teach anatomy, physiology and biology to high school students. For a catalog of software available to individuals, practitioners or other veterinary schools contact the Computer Assisted Learning Facility, (916) 752-2477.

Flood Survivor Delivers Foal

Continued from page 1

receded enough to load injured animals into trailers, they were brought to the Veterinary Medical Teaching Hospital (VMTH). Upon arrival, Freckles required immediate surgery to repair the gaping laceration, from knee to fetlock, in her left leg. At the time, she had completed almost eight months of gestation.

The Glynn's barn had been devastated and their pastures reduced to mud, so Freckles was invited to stay at O'Sullivan Farms in Browns Valley, home of the stallion (Gold Coast Approval) to whom Freckles had been bred. When Freckles developed severe colic symptoms April 2, Shayla Sullivan called Browns Valley veterinarian Dr. Wayne Wulf, who diagnosed Freckles with uterine torsion and referred her to the VMTH.

The horse was brought immediately to the Large Animal Clinic where Dr. Rodrigo Vasquez performed surgery to reposition the fetus. All went well, and Freckles returned to the farm in Brown's Valley. She gave birth to her foal May 7.

Shayla Sullivan says, "The Glynn's haven't decided on an appropriate name for the colt yet, but I call him 'Miracle.' 

School Honors Outstanding Alumni

The School of Veterinary Medicine recognizes outstanding alumni each year with the Alumni Achievement Award, the school’s most prestigious honor. The 1997 Alumni Achievement Award recipients are Robert H. Baker, retired private equine practitioner and surgeon, and Elizabeth Arnold Stone, professor and head of the Department of Companion Animal and Special Species Medicine at the College of Veterinary Medicine, North Carolina State University. Dr. Baker is being recognized for his outstanding contributions to the veterinary profession, for his excellent diagnostic and surgical skills and for his dedication to the mentorship of new graduates. Dr. Stone is being honored for her leadership in academic veterinary medicine, her dedication to educating veterinary students and her many contributions to the specialty of surgery.

Dr. Baker incorporated new scientific developments into his practice throughout his career. He established a system of internships at his equine surgical facility, where he trained nearly 30 young practitioners between 1975 and 1990. Dr. Stone has been innovative in the development of urogenital surgery techniques in companion animals, and she is coauthor of the veterinary urology textbook, *Urologic Surgery in the Dog and Cat.* She has been a major force in development and implementation of Pew Health Professions initiatives.

Kudos

Barry Ball, professor and inaugural John P. Hughes Endowed Chair of Equine Reproduction, received the 1996 Excellence in Equine Research Award from the American Veterinary Medical Association.

Robert BonDurant, chair of the Department of Population Health and Reproduction, was inducted into the Royal Spanish Academy of Veterinary Science in Madrid.

Mary Christopher, associate professor of clinical pathology in the Department of Pathology, Microbiology and Immunology, received the 1997 Norden Distinguished Teacher Award.

Thomas Farver, professor in Population Health and Reproduction who teaches statistics in the MPVM Program, received the 1997 Faculty Teaching Award. Said one student in nominating him, “[Dr. Farver] really loves numbers—and now, I do, too.”

Richard Freedland and James Morris, professors emeriti, were elected fellows of the American Society of Nutritional Sciences in honor of their distinguished careers in nutrition.

Marvin Goldman, professor emeritus, Department of Surgical and Radiological Sciences, was elected fellow of the American Association for the Advancement of Science.

Rick Hayes, Robin Houston, Dave Magliano and Don Preisler, staff members of the Computer Assisted Learning Facility, received the 1997 UC Davis Staff Assembly Citation for Excellence Award for outstanding contributions and achievements in assisting faculty members with the creation of innovative instructional software for the school’s teaching programs.

Ronald Hedrick, professor and aquaculturist in the Department of Medicine and Epidemiology, was selected as the 1996 Snowdon Lecturer for the Australian Animal Health Laboratory.

John Madigan, professor in the Department of Medicine and Epidemiology, received the 1996 Pfizer Animal Health Award for Research Excellence.

Marta Marthas, assistant adjunct professor in the California Regional Primate Research Center, received the Elizabeth Glaser Scientist Award from the Pediatric AIDS Foundation for her proposed studies which may benefit children with HIV/AIDS.

James Morris, professor emeritus, and Quinton Rogers, professor in the Department of Molecular Biosciences, have been chosen as co-recipients of the Osborne Mendel Award for 1997 by the American Society for Nutritional Sciences. The award is given for outstanding basic research in nutrition. Drs. Morris and Rogers, in recognition of their professional accomplishments and service to veterinary nutrition, have also been elected as honorary diplomats of the American College of Veterinary Nutrition.

Martin and Barbara Packard received the school’s El Blanco Award in recognition of their dedication and significant contributions to veterinary medicine and animal health, which have resulted in advances in understanding and defining genetically based diseases in purebred dogs.

Niels Pedersen, director of the Center for Companion Animal Health, received the 1996 School of Veterinary Medicine Faculty Teaching Award.

Susan Stover, associate professor in the Department of Anatomy, Physiology and Cell Biology, received the school’s 1996 Norden Distinguished Teacher Award.

Reen Wu, professor in residence at the California Regional Primate Research Center, received both a Ten-Year Merit Award from NIH and a Faculty Research Award from the UC Davis School of Medicine.

Richard Yamamoto, professor emeritus, was elected to the honor of life membership in the American Association of Avian Pathologists.
Contributions to the Charles Cornelius Memorial Scholarship Fund may be sent to the School of Veterinary Medicine, Office of Development, University of California, Davis CA 95616-8734. Checks should be made payable to the UC Regents.

Ralph Kitchell, professor emeritus in the Department of Anatomy, Physiology and Cell Biology, died of lung cancer May 17. In 1971, Dr. Kitchell joined the UC Davis School of Veterinary Medicine where he served as professor for more than 18 years. His research studies included the areas of pain perception, taste and somatosensory physiology. Following his retirement in 1990, he worked on innovative teaching methods including instructional computer modules, and contributed to textbooks on anatomy.

Contributions to the Ralph Kitchell Memorial Fellowship Fund may be sent to the School of Veterinary Medicine, Office of Development, University of California, Davis CA 95616-8734. Checks should be made payable to the UC Regents.

James Barges, '78, of Merced, died February 28 from injuries sustained in a motorcycle accident.

Patricia Brooks, who completed a residency in anatomic pathology in 1989, died January 10, 1997. Dr. Brooks was assistant professor of pathology at Colorado State University, Fort Collins.

Wing Chin, '53, died December 7, 1996, after he fell from the roof of his home while hanging Christmas lights.

Contributions to the Wing Chin Memorial Scholarship may be sent to the School of Veterinary Medicine, Office of Development, University of California, Davis CA 95616-8734. Checks should be made payable to the UC Regents.

Charles Cornelius, '53, professor emeritus, died February 16, 1997 of pancreatic cancer, after a short illness. During his career at UC Davis, he served as associate dean of the school, chair of the former Department of Physiological Science, director of the California Regional Primate Research Center, and as professor of physiological sciences in the School of Veterinary Medicine. He taught veterinary physiology and maintained an active research program in liver physiology until he retired from UC Davis in 1991.

Contributions to the Charles Cornelius Memorial Scholarship Fund may be sent to the School of Veterinary Medicine, Office of Development, University of California, Davis CA 95616-8734. Checks should be made payable to the UC Regents.

Anthony Stannard, '64, chair of the Department of Medicine and Epidemiology, died suddenly on July 2, 1997.

Dr. Stannard completed both his DVM ('64) and PhD degrees ('71) at UC Davis. He became a faculty member of the School of Veterinary Medicine in 1971, where he became recognized as one of the foremost veterinary dermatologists and dermatopathologists in the world. He served on the editorial board of Veterinary Dermatology, the only international journal devoted to the specialty area, and he was a charter diplomate in the American College of Veterinary Dermatology. After becoming department chair in 1987, he remained active as a dermatopathologist and as a dermatologist specializing in skin disorders of horses.

Dr. Stannard received the school's 1994 Norden Distinguished Teaching Award, and in 1997, received the Award for Excellence from the American College of Veterinary Dermatology, which is the highest honor accorded by his peers. He was a popular teacher and outstanding resident mentor in the School of Veterinary Medicine. As one student put it, “Lectures don't get any better than this.”

Remembrances may be sent to the Anthony A. Stannard Memorial Fund to promote education in veterinary dermatology. Checks made payable to the UC Regents may be sent to Mrs. Clarice Martin, VM: Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis CA 95616.
The Forty-Sixth School of Veterinary Medicine Commencement Ceremony was held June 7 in the UC Davis Recreation Hall. Professor Yuan Chung Zee, chair of the faculty, led the commencement procession, with Professor Rance LeFebvre bearing the school’s newly designed ceremonial mace, a carved wooden staff entwined with the caduceus.

One hundred-thirteen students graduated with DVM degrees, 8 with dual DVM/MPVM degrees, 29 were awarded Certificates of Residency and 11 completed BS degrees in veterinary science.

“Veterinary medicine is more than a profession; it is a way of life.”
—Jessica Light ’97

Events of Interest

Special Seminar on Equine Health and Reproduction
Dr. Irwin Liu, chief of the VMTH Equine Reproduction Service, Dr. John Hughes, professor emeritus, and thirteen other internationally recognized experts in equine health and reproduction will conduct a seminar for horse owners, breeders and enthusiasts at UC Davis on September 13. The seminar is coordinated by the Department of Animal Science and the Center for Equine Health, School of Veterinary Medicine. For more information, call (916) 752-1250.

California’s Veterinary School Celebrates 50 Years!
Join the festivities as the UC Davis School of Veterinary Medicine celebrates 50 years of teaching, research and service accomplishments next year—August 20, 21 and 22, 1998. Watch your mail for an announcement of activities that will mark this milestone for the veterinary school rated No. 1 in the nation this year by U.S. News & World Report’s annual survey of graduate schools.