Davis professor David Hinton and several of his colleagues are interested in what he calls “the big aquaculture experiment”—keeping free ranging populations of fish alive and healthy.

Dr. Hinton, cell biologist in the School of Veterinary Medicine and director of the UC systemwide Graduate Teaching and Research Program in Ecotoxicology, carries out studies of ecosystem problems and issues.

He says, “In California there is concern that water be adequate in both quantity and quality for human consumption, and that it continue to carry out its role in the natural environment—for instance, rivers are expected to provide fresh water to brackish water estuaries and nutrients for larval fish growth—but work done by UC Davis faculty members and others shows that many populations of species native to the Sacramento and San Joaquin River-San Francisco Bay Delta are in decline.”

In a special feature, Dr. Hinton talks about the role of veterinary medicine in ecosystem and population health.

Continued on page 8
**50th Anniversary Campaign Update**

The UC Davis School of Veterinary Medicine commemorated its 50th anniversary last August. During the celebration, Dean Bennie Osburn announced that $22 million had been raised toward a $50 million funding campaign goal to support endowed chairs, scholarships and fellowships, research and new facilities including a cancer therapy facility at the Center for Companion Animal Health (CCAH).

When the American Veterinary Medical Association completed a seven years’ accreditation review last November, the school met or exceeded 10 of 11 criteria for full accreditation—but the accreditation committee considered the school’s current educational facilities such as laboratories, classrooms and parts of the teaching hospital to be inadequate or out-of-date. They gave the school a two-year probationary period in which to remedy the problem.

The necessary improvements, alterations and replacements of school facilities are to be funded by a combination of state bonds, campus monies and private support, which must include $17 million from the school’s 50th Anniversary Campaign.

**A Heartening Response**

Concerned friends and animal lovers, alumni and faculty members have rallied to help. Contributions toward improving facilities to ensure full accreditation range from $2, from seven-year-old Isabel Montenegro’s piggy bank, to a $10.7 million pledge from the Wayne and Gladys Valley Foundation of Oakland, California.

By May 1999, 50th Anniversary Campaign gifts totaled more than $35 million, and the $6.5 million campaign for the new CCAH building fund was completed ahead of schedule through private funding.

**Current Goals**

But the school still needs approximately $15 million in order to reach the 50th Anniversary Campaign goal, and will continue to seek contributions to endow research fellowships and scholarships, and to support faculty and equipment.

For more information on how you can help support the School of Veterinary Medicine, contact the school’s Office of Development, (530) 752-7024, or visit the Web site, (www.vetmed.ucdavis.edu/gifts).

---

**Generous Gifts Support Education, Research and Facilities**

**Valley Foundation Gift Will Improve Facilities**

A $10.7 million gift from the Wayne and Gladys Valley Foundation— the largest single gift in UC Davis history—represents a major boost in efforts to improve aging facilities at the nation’s top-ranked veterinary school.

“The very generous gift from the Valley family foundation could not have been more timely,” says UC Davis Chancellor Larry Vanderhoef. “It endorses the unsurpassed quality and vitality of our veterinary medicine programs, while addressing the inadequacy of the facilities in which those programs currently operate.”

The Valley family foundation’s gift will support construction and renovation of instructional, research and office space, including alterations to the Veterinary Medical Teaching Hospital and the expansion of the Center for Companion Animal Health, as well as new classroom space for a growing body of veterinary students.

**Philanthropist and Aspiring Veterinarian Tours School**

When José Montenegro read a California Agriculture article by Dean Bennie Osburn on the future of veterinary education and the need for facilities funding at UC Davis, he knew that his 7-year-old daughter, Isabel, would understand. So he read the piece to her aloud. The aspiring veterinarian immediately sent a letter to the dean that began, “Dear Mr. Bennie,” and ended with, “Please accept my contribution of $2 Dollars.”

“Mr. Bennie” was so impressed that he thanked her personally and invited the young philanthropist to visit the school. Isabel’s favorite part of her special tour was meeting “Pepsi” and other blood donor cats at the Veterinary Medical Teaching Hospital.
First Human Lyme Disease Vaccine Receives FDA Approval

Until recently, the only way to prevent Lyme disease was to avoid being bitten by ticks that carry the disease-causing bacterium from animals to humans. (Hikers could tuck long trousers into boots or socks, and wear light-colored clothing to better see ticks.)

Lyme disease, which usually begins with a rash and fever, is a serious infectious disease in both humans and animals. Once diagnosed, the disease can be treated effectively with antibiotics, but about 25 percent of people infected with Lyme disease show no symptoms. If left untreated, the disease can progress to infect the heart and brain.

Now people moving about outdoors or living in areas where Lyme disease is common have a new defense option—the first vaccine against Lyme disease was approved by the Food and Drug Administration last December.

SmithKline Beecham Biologicals, Rixensart, Belgium, is licensed to produce and market the vaccine, called LYMErix. No vaccine is 100 percent effective, but LYMErix has been shown to prevent infection in 78 percent of vaccine recipients 15–70 years old. The vaccine is not approved for children younger than 15 years old.

In order to be effective, three doses of LYMErix are required over a period of at least one month and up to one year. It is unknown how long protection against the disease will last.

The Lyme disease vaccine (OspA) was developed by Dr. Stephen Barthold, director of the Center for Comparative Medicine at UC Davis, and his colleagues Drs. Flavell, Kantor and Fikrig at Yale University.

Dr. Barthold continues his work on second-generation Lyme disease vaccines at the Center for Comparative Medicine at UC Davis. The center, uniquely served by faculty and staff from both the School of Medicine and School of Veterinary Medicine, is devoted to investigation of persistent infectious diseases common to humans and animals.

For more information, contact the Center for Comparative Medicine, (530) 752-7913.

New Center for Comparative Medicine Inaugural Includes Symposium and Open House

UC Davis celebrated the opening of the Center for Comparative Medicine last June with a symposium, opening ceremony, and tours of the new facility.

An inaugural symposium featured the work of UC Davis and visiting scientists who are conducting research on viruses, bacteria and fungi that infect both humans and animals.

During the opening ceremony, the center’s director, Stephen Barthold, welcomed visitors, distinguished guests and speakers including Judith L. Vaitukaitis, MD, of the National Institutes of Health, who gave the keynote address, and former California State Senator John Garamendi, author of the bond act that helped establish funding for construction of the center.

The Center for Comparative Medicine is a collaborative research and teaching facility co-sponsored by the School of Veterinary Medicine and the School of Medicine to further understanding of and intervention strategies against persistent (viral, bacterial and parasitic) infectious diseases common to humans and animals.

Visitors tour the new UC Davis Center for Comparative Medicine, a collaborative biomedical research and teaching facility co-sponsored by the School of Veterinary Medicine and the School of Medicine. Funding for the $15 million building, which houses laboratories and core facilities for a campuswide mouse biology program, was provided by a $1.6 million grant from the Lucille P. Markey Charitable Trust and through provisions of the Garamendi Act.
Equine Chemistry Laboratory Named for Kenneth L. Maddy

The School of Veterinary Medicine has named its newest laboratory in honor of Kenneth L. Maddy, retired state senator from Fresno and long-time friend of the California horse industry.

The Kenneth L. Maddy Equine Analytical Chemistry Laboratory will provide UC Davis veterinary faculty with facilities and equipment to test unauthorized drugs in racing Thoroughbreds and to study how medications affect the health and performance of all types of horses.

Scheduled for completion this fall, the 29,000-square-foot, $7.4 million building is being constructed on the west side of campus just north of the Thurman Veterinary Diagnostic Laboratory. "The naming of the laboratory recognizes Ken Maddy's substantial and enduring contributions to California's animal agriculture, the horse industry and the School of Veterinary Medicine," says UC Davis Chancellor Larry Vanderhoef.

Senator Maddy supports the school's equine research program as a member of the Silver Stirrup Society, serves on the advisory board of the school's Equine Chemistry Laboratory, and is a client and avid horseman.

"As a client and avid horseman, Ken has been a boon to the health and welfare of all horses," says Dean Bennie Osburn. "The Equine Analytical Chemistry Program is just one example of how he foresaw the benefit of linking service and regulatory needs with academic research to protect the integrity of the racing industry."

Equine Orthopedic Laboratory Honors J.D. Wheat

The J.D. Wheat Equine Orthopedic Laboratory, a principal research unit of the Center for Equine Health that is nationally recognized for leadership in the study of equine athletic injuries, was dedicated last June.

The laboratory was named in honor of John D. Wheat, professor emeritus and a founding faculty member of the School of Veterinary Medicine, who has made many enduring contributions to the teaching and practice of equine medicine and surgery.

A $1 million endowment from the Dolly Green Research Foundation provides perpetual support for the laboratory to continue research into treatment and prevention of racing-related orthopedic injuries. The endowment also establishes the annual Dolly Green Lecture Series to update veterinary practitioners on the latest discoveries in the field, and supports education and training of new equine veterinarians through the Dolly Green Resident Grant Program.

New Oiled Wildlife Care Center Will Serve Southern California

A new facility designed for the care of large numbers of sea birds affected by oil spills will be located at SeaWorld San Diego.

The new facility will be part of the statewide Oiled Wildlife Care Network that is jointly administered by UC Davis and the California Department of Fish and Game. The state-funded, 21-facility network treated more than 2,000 animals last year in response to nine California oil spills.

Construction of the SeaWorld Oiled Wildlife Care Center is slated to begin this month and should be completed by the end of the year.

The new 2,600 square-foot center is designed to temporarily house 200 birds. It will include examination and treatment rooms, indoor and outdoor pens, and pools.

When rescued from oiled waters, sea birds are examined, cleaned and given fluids and activated charcoal to absorb and eliminate toxins. After 10 to 14 days at a rehabilitation center, birds that have recovered medically and can swim, fly and forage are released to the wild.

A ground breaking ceremony last March marked the 10th anniversary of the disastrous 11.2 million gallon Exxon Valdez crude oil spill that occurred in Alaska's Prince William Sound. "Since the Exxon Valdez spill, tremendous improvements have been made in rescuing, caring for and rehabilitating oiled wildlife," says Jonna Mazet, UC Davis faculty member and director of the Oiled Wildlife Care Network. "In the past decade we have seen a great increase in treatment methods and subsequent survival rates because the network has allowed us to quickly respond to spills. The new SeaWorld center will further strengthen our ability to serve Southern California."
Imagine three scenes: 50 dairy cattle are stranded at a flooded farm more than 24 hours after humans have been evacuated. Two dogs—one is injured—have been spotted on a levee inside a roadblock. A horse standing in three feet of water is entangled in barbed wire.

These flood disaster “scenarios” were presented at an emergency briefing of 45 UC Davis Veterinary Medical Assistance Team (UCD-VMAT) members called by the Governor’s Office of Emergency Services (OES) to take part in preparedness exercises on a cold, foggy Saturday morning last January.

Professor John Madigan served as incident commander this day as he and Yolo County OES Emergency Services Coordinator Dan McCanta briefed the assembled veterinary medical, animal handling and transport, communications and animal rescue experts.

The exercise was a joint effort by the all-volunteer UCD-VMAT (students, faculty, staff and community members); Yolo County OES, Sheriff’s Department and Animal Control; CVMA disaster coordinator Bruce Dennie; the California Department of Food and Agriculture; and the American Red Cross. Their aim is to provide assistance to animals in trouble during a disaster, when it is safe for rescuers to enter the affected area.

UCD-VMAT Teams Respond

The volunteers formed a team for each scenario and divided their equipment and expertise—each team included a large or small animal veterinarian and communications operator, for instance—and were prepared not only to simulate rescue operations, but also to evaluate the medical condition of animals detailed in the scenarios and to administer necessary treatments.

En route to the disaster site, made available for the exercise by a Yolo county rancher, all vehicles were stopped at a roadblock. Sheriff’s Department officers checked individuals for proper OES identification cards without which, in a real emergency, they would not be allowed inside the roadblock to aid stranded animals.

Once on-site, the teams were deployed to dairy cattle, dogs and horses who willingly served as rescues. Team members walked through the situation, worked out various problems associated with their rescue and noted key equipment and techniques that could improve their response in a genuine emergency.

They thanked the rancher and prepared to return to the Veterinary Medical Teaching Hospital for a pizza lunch provided by the Red Cross.

As a challenge to the participants, Extension Veterinarian Emeritus Ben Norman managed to hide some gear that was not later missed by its team—oops. But, the team member he hid as a test that “no one be left behind” was reported missing and was located before departure.

“The Dog Was Way Too Friendly!”

At the debriefing, Peter Pascoe, veterinarian for the dog rescue team, commented, “The [rancher’s] dog was way too friendly!” He pointed out that in a real situation, especially with an injured dog, the animal would likely be elusive and possibly aggressive.

Another, sometimes difficult, lesson is that safety to humans must come first. To be effective in assisting animals during disasters, rescue workers must never become victims in need of rescue themselves. The levee scenario indicated that before the second dog could be coaxed in and caught, VMAT members “were alerted that a levee had broken and they must evacuate immediately,” leaving the dog behind to fend for itself.

Answering a reporter’s question, third-year veterinary student Jacqui Whittemore summed up the general spirit “Why are we all out here? Because everyone involved thinks it’s the right thing to do!” As a result, the people and animals they are prepared to serve are more likely to come safely through the next disaster.

Future UCD-VMAT plans include conducting regular exercises—such as a wildfire drill June 5—and developing a World Wide Web-based “lost and found” for locating displaced animals.

A free guide to disaster preparedness is available online: (www.vetmed.ucdavis.edu/vetext/INF-DI_DANRGuide.html).
New Faculty Members

Andrew Kyles
Assistant professor, surgical and radiological sciences
Education
BVMS, Glasgow U., 1988
Fellow-PhD, U. Bristol, 1988–92
Residency, NC State, 1993–96
Experience
U. Athens, GA 1996–97
UC Davis, 1997-present
Specialty
Small animal soft tissue surgery; pain management and analgesia; transplantation and immunology

Jonna Mazet
Assistant professor of clinical wildlife health; codirector, Wildlife Health Center
Education
DVM, MPVM, UC Davis, 1992
PhD, UC Davis, 1996
Experience
UC Davis, 1994–present
Specialty
Effects of petroleum products on wildlife; diagnostic tests for free-ranging wildlife; marine ecotoxicology; wildlife species as biomarkers of environmental health

Robert Moeller
Associate professor of clinical diagnostic pathology
Education
DVM, Oklahoma State, 1977
ACVP, US Army Medical Research Institute of Infectious Disease, 1986
Experience
Armed Forces Institute of Pathology, 1986–92, 1996–98
US Army Medical Institute of Chemical Defense, 1992–96
Specialty
Infectious disease; foreign animal diseases; toxicology

Dale Moore
Assistant professor in residence, population health and reproduction
Education
DVM, MPVM, UC Davis, 1983, 1987
PhD, Pennsylvania State, 1998
Experience
Pennsylvania State University, 1990–97
Specialty
Food animal production medicine education; needs assessment for continuing and resident education and dairy production medicine research; large dairy herd on-farm problem solving

William Sischo
Assistant professor, population health and reproduction
Education
DVM, MPVM, UC Davis, 1987
PhD, Ohio State, 1991
Experience
Pennsylvania State University, 1991–97
Specialty
Practical and applied research on farm livestock; population medicine; quality milk production

Jerold Tannenbaum
Professor, population health and reproduction
Education
MA, Cornell, 1972
JD, Harvard, 1977
Experience
Tufts University, 1982-99
Specialty
Veterinary ethics and law; development of veterinary/animal ethics programs

Stephen White
Professor of dermatology, medicine and epidemiology
Education
DVM, UC Davis, 1979
Residency, UC Davis, 1982
Experience
Tufts University, 1982–87
Colorado State University, 1987–98
Specialty
Food allergy; alternative and non-steroidal treatment of autoimmune skin disease; synthetic retinoids in dermatology; mycobacterial diseases
Faculty News

Alex Ardans has agreed to serve another five-year term as director of the California Veterinary Diagnostic Laboratory System.

Eugene Breznock, professor in surgical and radiological sciences, retired in 1998. While a faculty member at UC Davis, his reputation, together with his innovative surgical skills, were responsible for some of the best and technically challenging surgeries undertaken at the Veterinary Medical Teaching Hospital (VMTH). Dr. Breznock’s special expertise and skill in cardiovascular surgery won him national and international recognition.

The school’s Robert M. Cello Distinguished Lectureship and Resident Award was initiated in March, 1998. Professor Emeritus Cello served as a member of the faculty from the mid-1950s, established the Ophthalmology Service and was the first director of the VMTH.

Bill Lasley is serving as co-convenor and program chair, and several faculty members, including Frederick Murphy, Jonna Mazet, David Hinton and Jerold Last are involved in program development for the 4th International Congress on Ecosystem Health: Managing for Ecosystem Health to be held in Sacramento August 15–20, 1999. The congress will be co-hosted by UC Davis and the Division of Agriculture and Natural Resources. Visit the congress Web site (www.vetmed.ucdavis.edu/centers/iseh/ecosystemhealth.html) for more information.

A new one-year Graduate Program in Medical Informatics offering a Master of Science degree will begin at UC Davis in the fall. Faculty members in the School of Veterinary Medicine, James Case, William Hornof, Wasyl Malyj, Tim Carpenter, VMTH administrators Paul Brentson and Jim Self, and their colleagues in the College of Engineering, School of Medicine and Carlson Health Sciences Library will teach courses in data acquisition, medical information, computer-based patient records and decision support systems in medicine. More information is available online (http://medinfo.cs.ucdavis.edu/).

Dual Leadership Appointed to Guide Wildlife Health Center

Two new directors of the school’s Wildlife Health Center were appointed last July.

Jonna Mazet and Walter Boyce share administration of the multidisciplinary program dedicated to enhancing the conservation and health of wild animals and their environments through science and education.

Dr. Boyce, professor and wildlife veterinarian, has directed the school’s wildlife health instructional program. The program has heightened veterinary medicine’s contribution to many aspects of environmental health. “Advanced training can play a major part in an overall goal of wildlife conservation,” he says. “The center will create new opportunities for postgraduate study and career development for wildlife health professionals.”

The center funds a competitive grants program and encourages creative approaches to solving wildlife problems. Roughly one-fourth of the school’s faculty now participate in wildlife health education and scientific research.”

Dr. Mazet and I intend to build upon this strong base of faculty, student and administrative support,” says Dr. Boyce.

Dr. Mazet, wildlife epidemiologist, is also director of the Oiled Wildlife Care Network (OWCN), a joint project of the school and the California Department of Fish and Game. Drs. Mazet and Boyce seek new and innovative partnerships between UC Davis and wildlife management agencies, nongovernmental organizations and private citizens interested in conservation, public health, wildlife diseases, habitat concerns and related issues.

In addition to its university-based scientific advisory committee, the Wildlife Health Center is developing an external advisory board to address the complex issues of conservation in a rapidly developing world. Dr. Mazet says, "We must develop alliances in the public and private sectors that promote wildlife conservation while recognizing that human demands on the environment will only continue to increase."

School Names Newest Director for Master of Preventive Veterinary Medicine Degree Program

The School of Veterinary Medicine has named Bruno Chomel director of the Master of Preventive Veterinary Medicine (MPVM) degree program pioneered by UC Davis in 1966.

The MPVM program prepares veterinarians to investigate diseases in animal populations, with emphasis on production medicine, food safety and zoonoses (diseases transmissible from animals to humans). MPVM graduates design, evaluate and implement disease control strategies and provide other veterinary services, including the evaluation of diagnostic tests, surveillance of disease outbreaks, and risk assessment.

Dr. Chomel, an infectious disease expert with a long-time interest in the importance of public health, began his 3-year term as MPVM program director last July.

Visit the MPVM Web site for more information about the program (www.vetmed.ucdavis.edu/mpvm/mpvm.htm).
**Water Problems in Northern California**

“There are many problems to work on in the Sacramento-San Joaquin-San Francisco Bay Delta system,” says UC Davis professor David Hinton. “Questions about the fate, transport and toxic effects of various compounds under actual environmental conditions need to be answered in order to protect the health of all wildlife, domestic animals and humans that depend on California water.”

Metals such as copper, cadmium, mercury and zinc, from old mining sites

Mercury, for instance, can be taken up by aquatic organisms and incorporated into the tissues of fish that feed on those organisms — it can then be transferred to humans or other animals that consume the fish.

Chemicals such as organophosphate pesticides and some herbicides from urban and agricultural runoff

Diazinon and chlorpyrifos are organophosphates that, because they have shorter half lives, replaced DDT — but some waters of Northern California are toxic in pH, allowing the compounds to persist. Storm drains and agricultural returns carry these products, which are not well monitored in urban areas, into the rivers.

Exotic species such as the Asian clam, which is a filter feeder and a very effective accumulator of the metal selenium

The clams, which are the size of a nickel and one-half inch thick, are eaten by the waterfowl, a diving duck, and are the preferred food of catfish, a sport fish that is not native to California. Bioaccumulation of selenium has been shown to lead to deformities and reproductive failure in some wildlife species.

**Veterinary Medicine and Ecosystem Health**

Declining populations of fish, aquatic birds and other wildlife and the incidence of diseases in aquatic systems may be a reflection of the health of those aquatic systems,” says David Hinton, director of the UC Davis School of Veterinary Medicine’s Aquatic Toxicology Laboratory.

The veterinary medicine of the future, he says, may address issues of environmental health by studying the health of representative organisms that live within a particular environment.

Dr. Hinton and more than 30 UC Davis faculty members from a variety of disciplines, including School of Veterinary Medicine population health and reproduction professor and associate director of the Institute of Toxicology and Environmental Health, Bill Lasley, conduct studies of the Sacramento River watershed in all its roles as a resource. Their investigations are funded through the UC Davis/DHS U.S. EPA Center for Ecological Health Research and the UC Davis Center for Superfund Basic Science Research and other agencies, such as CALFED, the new state and federal initiative to restore and preserve beneficial uses of water for wildlife, humans and domestic animals.

In Northern California rivers, says Dr. Hinton, pollution takes the form of metals such as selenium found naturally in soils and rock formations; copper, cadmium, zinc and mercury from old mining sites; and organophosphates and other organic compounds from pesticide and herbicide use. Dr. Hinton, who also directs the UC statewide Graduate Teaching and Research Program in Ecotoxicology, says, “It’s understandable the toxicity of these substances, all of which add to the problems of fish populations already affected by habitat reduction and warming due to water diversion, takes a special type of consideration and approach.”

Dr. Hinton says, “Ecotoxicology addresses the variety of environmental variables, particularly transport and fate of compounds that could have a toxic effect, that impact organisms in the food web from the molecular level to whole organisms and populations.

“I feel that it’s important for modern veterinarians to begin to think of themselves as public health physicians for wildlife and free-ranging populations of fishes, mammals and birds. Contaminants in the environment could be having an impact not only on wildlife, but also, directly or indirectly, on domestic animals.”

**Ecotoxicology Research at the Aquatic Toxicology Laboratory**

“The Aquatic Toxicology Laboratory is a campus-wide resource that resides in the School of Veterinary Medicine,” says Dr. Hinton. “Our PhD students come from three different graduate groups: Pharmacology/Toxicology, Ecology and Comparative Pathology. We’ve trained three graduate veterinarians (former residents in pathology) who specifically wanted to work with fish and aquatic systems.

“The Aquatic Toxicology program has outreach across the entire state of California. Our laboratory monitors surface water from the Klamath River to the Salton Sea, and the New River in the Border River’s Project with Mexico. In addition, Dr. Gary Marty in the lab has led a multiyear program of followup studies on the oil spill in Prince William Sound, Alaska.

“We conduct tests for various agencies to determine potential problem areas and times when toxic conditions exist in the rivers. If water samples taken at a given moment from watersheds such as the Feather or Butte River are toxic, we begin a series of investigations to try to identify the agent(s) causing the toxicity. We then conduct laboratory studies to get a better handle on the effects of specific agents.

“Postdoctoral and graduate students are getting real educational experience in seeing water as a driver of policy in a state with a very important commodity and resource.”

---

**Aqueous Toxicology: Current Investigations**

The laboratory plays an important role in answering questions about the environmental health of California waterways.

**Environmental Health**

In Northern California rivers, says Dr. Hinton, “It’s a rallying call for investigators with health awareness to create an environmental initiative. We need more knowledge about the following: how compounds move and their fate in the environment; the mechanisms of action of toxicants in water; and the agent(s) causing the toxicity. We then conduct laboratory studies to get a better appreciation for both local and large-scale interactions that affect California water quality.

Future Investigations

“Veterinarians with interests in environmental quality, habitat, food safety and food production problems are vital to the study of important environmental issues,” says Dr. Hinton. “It’s a calling for investigators with health awareness to create an environmental initiative.

“We need more knowledge about the following: how compounds move and their fate in the environment; the effects of toxicants on animal populations and communities; and the impact of land use patterns on water and biota (using geographic data bases).

“We also need detailed studies of metals and organics; detailed models of ground and surface water and chemicals; appropriate molecular markers to determine exposure to toxicants in wild animals, and integration of scientific research that includes health experts.

“It’s an exciting time,” says Dr. Hinton.

“Postdoctoral and graduate students are getting real educational experience in seeing water as a driver of policy in a state with a very important commodity and resource.”

**Sentinel Organisms for Watershed Problems**

The National Institute of Environmental Health Sciences, U.S. EPA and the National Cancer Institute are funding studies to better understand normal and abnormal growth development of fish that might be used as sentinel organisms for problems in the watershed.

**Protecting Animals from Aquatic Toxicants**

Investigators use molecular assays to understand the “mechanisms of action” of toxicants in water and also work with colleagues who are ecologists and specialists to determine how to protect aquatic animal populations and resources.

**Testing Water Quality**

Water samples are tested for growth and survival of various organisms — such as the water flea Ceriodaphnia, a very sensitive organism that reproduces rapidly, or the day-old, one-centimeter-long larva of the “fathead minnow,” a test organism for fish — to see if exposure to a water sample affects the organism’s growth, reproduction or survival. Environmental pathologists also analyze cells, tissues and body fluids of resident fish to see if exposure to waterways has left any deleterious effects from exposure.
The 1998 School of Veterinary Medicine Alumni Achievement Awards recognized three alumni for scientific scholarship, excellence in teaching, and personal commitment to the science of veterinary medicine:

Rick Arthur, DVM ’76, equine specialist and surgeon who practices in Southern California, for his leadership in equine sports medicine and surgery, and his numerous contributions to the Thoroughbred racing industry.

Stephen Barthold, DVM ’69, the first director of the Center for Comparative Medicine, for his contributions in comparative medicine and his leadership in developing research and educational programs characterizing the genetic basis of disease.

Terrell Holliday, DVM ’53, PhD ’65, professor emeritus, for his contributions as a neurologist, neurosurgeon, scientist, scholar and educator, and his leadership in developing the specialty of neurology.

Alex Ardans, director, CVDLS, was appointed in 1998 by former governor Wilson to serve on the board of directors of the California Center for Quality, Education and Development (CalQED), a nonprofit corporation that fosters improvement and performance excellence in business practices.

Barry Ball, professor, population health and reproduction, received the Shering-Plough Award in Equine Reproduction Research.

Dale Brooks, director, Animal Resources Service, received the American Association of Laboratory Animal Science Joe Garvey Award.

Mary Christopher, associate professor in pathology, microbiology and immunology, received the North American Norden Distinguished Teacher Award.

Patricia Conrad, professor; pathology, microbiology and immunology; received the 1998 Pfizer Award for Research Excellence and the 1999 Norden Distinguished Teacher Award. She specializes in parasitology, especially parasitic illnesses of horses, cattle and humans.

Larry Cowgill, associate professor, medicine and epidemiology, received the 1999 AKC Excellence in Canine Research Award from the AVMA for his work in development of hemodialysis for management of chronic renal failure. His research has advanced clinical nephrology and the establishment of nephrology and urology as system specialties in veterinary medicine.

Ian Gardner, professor, medicine and epidemiology, received the UC Davis School of Veterinary Medicine Faculty Teaching Award for 1998. Dr. Gardner also became president-elect of the Association of Teachers of Veterinary Public Health and Preventive Medicine.

Marvin Goldman, professor emeritus, surgical and radiological sciences, won recognition from the Interagency Nuclear Safety Review Panel for his work with NASA’s Cassini Mission to Saturn.

Ronald Hedrick, professor, medicine and epidemiology, received the American Fisheries Society’s S.F. Snieszko Distinguished Service Award last September.

Dr. Hedrick’s work as a fish pathologist has led to a better understanding of the ways that viruses, parasites and diseases affect wild fish populations, commercially farmed species and ornamental fish such as koi. As chief of the school’s Fish Health Service,
Dr. Hedrick oversees advanced veterinary diagnostic training, research projects and veterinary care of fish from around the state.

Dr. Hedrick, 48, is the youngest scientist to receive the award, which usually acknowledges lifelong career achievement. The award committee cited Dr. Hedrick as a mentor to colleagues and a guiding force in starting fish health programs around the world.

Dallas Hyde, associate dean for research, received the 1999 Pfizer Research Excellence Award for his work on pulmonary disease.

Janet Ilkiw, associate professor, surgical and radiological sciences, received the 1998 Carl J. Norden Distinguished Teacher Award. Dr. Ilkiw is an expert in small animal anesthesia and pharmacology.

Mark Kittleson, professor, medicine and epidemiology, was elected to chair the Board of Regents of the American College of Veterinary Internal Medicine. During his four-year term, he will serve as vice president, president-elect and president.

James MacLachlan, professor and chair, Department of Pathology, Microbiology and Immunology, was elected 1998 president of the American College of Veterinary Pathologists.

Bruce Madewell, professor, surgical and radiological sciences, was elected president of the American Cancer Society, Sacramento Chapter.

Stanley Marks, assistant professor, medicine and epidemiology, received the Mark L. Morris Sr. Distinguished Research Award and Best Faculty Research Award from the American College of Veterinary Internal Medicine.

Peter Moore, professor, pathology, microbiology and immunology; received the 1999 Pfizer Research Excellence Award for his work in anatomic pathology.

Robyn Nearn, senior veterinary student, received the 1999 Lloyd's London Bursary Award, which recognizes outstanding commitment to equine practice, academic performance and leadership in equine activities.

Robert Parmelee, staff research associate in anatomy, physiology and cell biology, received the award for best exhibit at the Ninth International Conference on Plastination, the technique for preservation of anatomical specimens for teaching. Plastination reduces live animal use for instruction by 50 percent in some cases.

Niels Pedersen, director of the Center for Companion Animal Health, Mercer Veterinary Clinic for the Homeless, a volunteer organization run by UC Davis veterinary students that provides free veterinary care—including physical examinations, laboratory tests, vaccinations, food and supplies—for animal companions of the homeless, received the 1998 AVMA Humane Award in recognition of humane efforts on behalf of animals and exceptional compassion for the welfare of animals.

Accepting the award during the AVMA convention, Jacqui Whittemore and Eileen Hopper, third-year students and former co-presidents of the Mercer Clinic, expressed thanks to the many Sacramento and Davis area veterinarians, the countless private donors, and the dedicated students and community members who enable the clinic to exist.

Mercer Clinic Receives AVMA Humane Award

Mercer Veterinary Clinic for the Homeless, a volunteer organization run by UC Davis veterinary students that provides free veterinary care—including physical examinations, laboratory tests, vaccinations, food and supplies—for animal companions of the homeless, received the 1998 AVMA Humane Award in recognition of humane efforts on behalf of animals and exceptional compassion for the welfare of animals.

Accepting the award during the AVMA convention, Jacqui Whittemore and Eileen Hopper, third-year students and former co-presidents of the Mercer Clinic, expressed thanks to the many Sacramento and Davis area veterinarians, the countless private donors, and the dedicated students and community members who enable the clinic to exist.

Continued on page 13

Jason West, a PhD candidate in pharmacology and toxicology, is the first recipient of the Ralph Kitchell Fellowship. Mr. West is producing Web-based interactive software for learning cardiac and respiratory physiology that will be used in the professional DVM curriculum. The fellowship was established by the Kitchell family to honor the memory of Dr. Kitchell, professor emeritus in anatomy, physiology and cell biology, who died in May 1997. Pictured in front of a display featuring Dr. Kitchell's many career accomplishments are Jason West, Mrs. Kitchell and Dean Osburn.
Thanks to a program sponsored by a national coalition of animal welfare foundations, four UC Davis veterinary students developed winning proposals for summer research projects to reduce pet overpopulation, monitor lion health in Africa, understand more about disease transmission between domestic and wild animals and assist a veterinary school to improve animal welfare in Bosnia.

Faculty members David Hird, Linda Munson, Janine Kasper and Lynette Hart served as mentors to the students who prepared winning proposals.

David Dawson, '00, continued an educational exchange in Sarajevo, Bosnia begun earlier this year through the school’s Office of International Programs. Mr. Dawson assisted Santa Rosa veterinarian Deborah Crippen in demonstrating surgical techniques to students at Bosnia’s only veterinary school, still recuperating from years of warfare. Dr. Crippen and Mr. Dawson conducted a spay and neuter clinic and began building a framework to ensure humane approaches to a severe animal overpopulation problem.

Cynthia Delany, '00, adapted the ideas of the successful Shelter Dog Rescue Project at UC Davis for use by other communities. Project volunteers take shelter animals and place them with 4-H and community volunteers for a period of socialization and obedience training. Dogs are then put up for permanent adoption. Ms. Delany, who is authoring a book about various volunteer approaches to shelter issues, hopes that community-centered programs may reduce the number of dogs that are euthanized and help youngsters to learn the basic responsibilities of pet ownership.

Katie Prager, '01, conducted disease screening and fertility testing in a population of lions at Uganda’s Queen Elizabeth National Park. Lion conservation is important not only to biodiversity in Uganda, but also to the tourist economy.

Robin Schaffner, '00, visited Africa and studied how the canine distemper virus is transmitted among carnivores at a national park in Botswana. Her project is part of a larger conservation effort aimed at understanding how diseases of domestic animals may infect wild lions.

Kudos

Continued from page 11

received the International Award for Scientific Achievement from the World Small Animal Veterinary Medical Association/Waltham.

William Pritchard, professor emeritus and former dean of the school, received an honorary Doctor of Science degree from Canada’s University of Guelph, the most recent in a long line of similar honors. From 1962 to 1982, Dr. Pritchard led the School of Veterinary Medicine during a time of expansion in veterinary science and education. As an expert on infectious animal diseases, he has been associated with the development of international research laboratories, agricultural research organizations and international health groups, including the World Health Organization. He now spends his “free” time as a rice and walnut farmer.

Randy Singer received the award for best graduate student presentation in the Epidemiology and Animal Health Economics section at the Conference of Research Workers in Animal Disease last December. He is a co-founder of the Mercer Veterinary Clinic for the Homeless.

Bradford Smith, director, Veterinary Medical Teaching Hospital, received the American Feed Industry Award for outstanding contributions to nutritional research.

The Robert Emrie Smith Memorial Research Fellowship, created to support creative graduate student research in physiological sciences, was awarded to the following four nominees:

- Kimberly Dixon, nutrition doctoral student: role of the vagus nerve in amino acid imbalance anorexia;
- Rennée Moore, postdoctoral research fellow in molecular biosciences: molecular physiology of muscle cells;
- Adam Rechs, physiology doctoral student: neuronal mechanisms involved in the ability to differentiate diets adequate in essential amino acids;
- Ban Truong, nutrition doctoral student: neuromechanisms involved in amino acid imbalance anorexia.

Eugene Steffey, professor, surgical and radiological sciences, became an Honorary Associate of the Royal College of Veterinary Surgeons and was elected to membership in the Association of University Anesthesiologists.

Susan Stover, associate professor; anatomy, physiology and cell biology; received the Bayer Animal Health Excellence in Equine Research Award.

George B.E. West, DVM ’57, MPVM ’77, received the 1998 Distinguished Achievement Award for career, community or public service from the Cal Aggie Alumni Association. Dr. West is a lecturer in avian medicine, avian and swine immunology, foreign animal diseases, and public health and food safety. He served the military for 34 years and has served the public as a veterinarian with the California Department of Food and Agriculture.

Tilahun Yilma, director, International Laboratory for the Molecular Biology of Tropical Diseases, received a Distinguished Service Award from the Organization of African Unity for the Pan African Rinderpest Campaign.

Alumni Notes

Final selection of the Donald G. Low/CVMA Practitioner Fellows for the 1999-2000 academic year will take place by August.

Fellowship application forms for the 2000-2001 academic year will be available on the Web site: (www.vetmed.ucdavis.edu/ce/lowfellowship.html). The application deadline is in May for fellowships that will be undertaken during the following academic year.

The Class of 1954 held a reunion on April 24, 1999, at the Putah Creek Lodge on the UC Davis Campus.

James Thomas says, “A really great day! This was a memorable reunion from my standpoint. I was truly upbeat until I said goodbye and was walking away from my friends. Then for a moment I felt kind of lumpy, wondering who would answer the roll call for the next reunion— but these parties aren’t for thinking, they’re for celebrating. Let’s do it again, not wait five years!”

Continued on page 14
Alumni Notes
Continued from page 13

The Class of 1968 has a reunion every five years—the April 1998 reunion was organized by the Aldines and held in Napa Valley. Dietrich Kroger, ’68, shares the following notes:

“The class has a very interesting 30-year history. Fifty-three of the 54 students who graduated in 1968 are alive and well, and 43 are in active practice. Many of the class are experts in fields not taught at UC Davis in 1968, and class members have practiced or lectured in at least 19 different countries. Five are members of veterinary school faculties (Campbell, Hird, Li, Pharr, Timm). Several have published textbooks, and members of the class have written hundreds of scientific articles.

“Their veterinary interests range from general practice to single-species practice, and include specializing in llamas (Sharpnack, Timm), consulting in radiology (Silverman), anesthesiology (Buttgenbach) or dentistry (Mulligan), specializing in dolphins in China (Hammond), teaching in China and translating Chinese acupuncture texts into English (Li), consulting on otters during the Alaska oil spill and at the Monterey Aquarium (Williams), and operating a multi-doctor practice in Israel (Kaminsky). Some class honors include receiving an award from the Secretary of Agriculture (Harbottle) or the American Association of Bovine Practitioners for dairy preventive medicine (Jameson).

“Their outside interests range from grape farming (Aldine, Blake) to restoration of furniture (Coombs) or of an historical farm house (Schaefer). One was named Outstanding Forester (Kleps).

“The Malos and Timms had their next generation graduate from UC Davis to ensure perpetuity. The class looks forward to the next reunion—each reunion has brought together friends with different life experiences, which makes the event memorable and, on occasion, creates even closer ties.”


Vince Moe addresses the biannual conference of the Food and Agriculture Organization of the United Nations, Rome, 1997.

Vince Moe, ’69, serves as permanent secretary in the Ministry of Agriculture, Trinidad and Tobago.

Tony Buffington, ’81, professor of veterinary clinical sciences at The Ohio State University College of Veterinary Medicine, and his colleague, Dennis Chew, were awarded $748,000 from the NIH last December to continue studies of interstitial cystitis (IC) in cats as a naturally occurring model of IC in humans. Their research has increased understanding of the neurological abnormalities present in IC patients, identified new approaches to diagnosis, and developed improved behavioral, dietary and pharmacological approaches to treatment of the disease.

The Class of 1987 held a 10-year reunion at the Monterrey Bay Aquarium in October 1997. More than 60 class members and their families attended a catered dinner and private viewing of the new Outer Way Wing. Other events, including kayaking, golfing and biking, were held throughout the weekend. “It was a great reunion, and many of us had a chance to get reacquainted,” says Kristina Burling, class treasurer. Following their reunion, the Class of ’87 contributed a check for several hundred dollars to the School of Veterinary Medicine.

Cassie L. Jones, ’88, served as 1998 president of the Southern California Veterinary Medical Association, the nation’s largest local veterinary association. She practices small animal and exotic animal medicine at Wilshire Animal Hospital in Santa Monica, and holds a specialty diploma in canine and feline practice from the American Board of Veterinary Practitioners.
In Memoriam

Werner Heuschele, '56, long-time director of the Zoological Society of San Diego's Center for Reproduction of Endangered Species (CRES), and a veterinarian and researcher for decades at the San Diego Zoo, died February 1, 1999, after a long illness. He was 69 years old. In 1991 Dr. Heuschele received the school's Alumni Achievement Award; in 1995 he received a distinguished service award from the Wildlife Disease Association and in 1998, received the Dolensek Award from the American Association of Zoo Veterinarians.

Curtis D. Port, '56, veterinary pathologist, died March 23, 1998, at age 67. He was retired from his position as director of laboratory animal resources at G.D. Searle and as adjunct professor at both Northwestern University Medical School and University of Illinois Medical School, Chicago.

Fred Miller, '58, died May 31, 1998.

Richard K. Waters, '62, equine veterinarian, died March 13, 1999 at his home in Wallace, California. He was 67.

Foster Lasdon, '65, died February 14, 1999. He practiced veterinary medicine for more than 30 years in Woodland Hills, California. He was a past president of both the Sierra Veterinary Medical Association and of the SCVMA—San Fernando Valley Chapter, served on the Registered Technician Advisory Board of Pierce College and was a member of AVMA, AAHA and the Southern California Harley Riders Association.

Robert John Weber, '69, of Red Bluff, California, died December 13, 1998 at the age of 53, shortly after having been diagnosed with cancer. A Bay Area native, he lived in the Santa Cruz area before moving to Red Bluff in 1975. He was a member of the State of California Veterinary Medical Board and past member of the California Veterinary Medical Board of Ethics. Dr. Weber was the California representative in the National Association of Veterinary Medical State Boards.

Leo Matern, '70, died of colon cancer after a short illness in February 1998. The Dr. Leland E. Matern Memorial Scholarship, which has been endowed by his friends and colleagues, will be presented annually to a UC Davis veterinary student who has an interest in horses and is compassionate and kind to both animals and people. Dr Matern’s daughter, Erin, is a pre-veterinary student at UC Davis.


Leo Bustad, dean emeritus and alumnus of the Washington State University College of Veterinary Medicine, died September 19, 1998. He served as director of the Radiobiology Laboratory and Comparative Oncology Laboratory at UC Davis between 1965 and 1973. Following his retirement from WSU, Dr. Bustad spent much of his time promoting the concept of the human-animal bond and the value of pets in the treatment of institutionalized patients and the elderly.

John Hughes, professor at the UC Davis School of Veterinary Medicine since 1956, died February 16, 1998, at age 75. Dr. Hughes was recognized as an authority on equine reproductive physiology and medicine. He was a charter member of the American College of Theriogenologists and was a founding member of the International Symposium on Equine Reproduction. Dr. Hughes served for many years as director of the Center for Equine Health and as director of the Veterinary Genetics Laboratory. The John P. Hughes Endowed Chair in Reproduction, the first endowed chair in the school, was established in 1997 as a tribute to his teaching, research and service.

Dena Mangiamele, MPVM '91, is chief veterinarian for the City of Los Angeles Department of Animal Services. She oversees six shelters that took in nearly 85,000 animals last year, of which 36 to 98 percent were adopted. All animals that leave the shelters are spayed or neutered.

Cheryl Scott, '94, practices out of a mobile clinic, enabling her to treat animals in their own home. She specializes in hospice care and offers humane euthanasia to terminally ill patients. Her practice, HomeVetHospice, is based in Davis.
New Videotape on Equine Fetal Sexing Expands School’s Educational Tools

A new 21-minute instructional videotape produced by faculty at the UC Davis School of Veterinary Medicine guides veterinarians through the process of identifying equine fetal gender using ultrasonography techniques.

Transabdominal Ultrasonic Determination of Fetal Gender in the Horse During Mid-Gestation outlines detailed information about ultrasound equipment, preparation of the mare for the procedure, and male/female fetal anatomy as seen through ultrasonicographic imagery. Drawings also assist instructors and veterinarians in interpretation of images.

The videotape is a collaborative work by equine reproduction specialist Catherine Renaudin, DVM, equine ultrasonographer Carol Gillis, DVM, PhD, and fetal ultrasound expert Alice Tarantal, PhD.

The $75 videotape, available in the VHS or PAL format, joins a growing list of multimedia instructional tools produced by UC Davis School of Veterinary Medicine faculty for professional use.

Other recent products include Poisonous Plants, A Veterinary Guide to Toxic Syndromes, distributed by Iowa State Press (Macintosh and Windows) and Equine Osteology: An Interactive Atlas of the Thoracic and Pelvic Limbs (Macintosh).

For more information about the fetal sexing videotape or instructional software titles contact the Office of Academic Programs, (530) 752-1324, svmacadprog@ucdavis.edu, or visit the online catalog (www.calf.vetmed.ucdavis.edu/HTML_docs/html/software.html).

A new videotape produced collaboratively by three UC Davis faculty members shows how fetal gender identification is now possible to allow breeders to plan ahead for the future of a foal based on its sex. Fetal ultrasonic anatomy is described in detail from heart to hind quarter with characteristic ultrasonicographic images for identification of both the male and female. Each image includes a drawing that shows the probe position in relation to the fetus in utero. The ultrasonogram (left) is a cross-sectional view of the abdomen of a 167-day fetus at the level of the stomach.