

# HEARTBEAT

UC DAVIS VETERINARY HOSPITAL

VOL. 8, 2019

*Special Edition*



**UCDAVIS**

**VETERINARY MEDICINE**

*Veterinary Medical Teaching Hospital*



## CVMO Message

This has been an exciting year at the UC Davis veterinary hospital. We saw our faculty and residents lead research projects that translated to the latest in clinical breakthroughs. We trained another class of the next generation of veterinarians and veterinary specialists. We treated more than 50,000 patients. But perhaps most importantly, we completed the Large Animal Support Facility – the first project in Phase I of our future Veterinary Medical Center (VMC).

The completion of this upgrade to our hospital represents the beginning of a bold journey toward the future of animal health, as we create the preeminent veterinary care facility in the world. During the next decade, we will expand our state-of-the-art treatment centers with the creation of the All Species Imaging Center, the Equine Performance Center, the Equine Surgery and Critical Care Center, the Livestock and Field Service Center, and a new Small Animal Clinic that will more than double the size of our existing space.

I invite you to explore our website and learn more about the VMC campaign. You'll find artist renderings of how these new buildings will look, uplifting patient stories showcasing the type of innovative care that will be enhanced in our new complex, and an overview of our vision for the future of veterinary medicine. We hope you will be inspired to join us on this journey with an individual donation, a naming opportunity, or a planned gift.

Please enjoy this latest issue of *Heartbeat*, and thank you for your continued support.

Warmest regards,

Dr. Jane Sykes  
Chief Veterinary Medical Officer

## On the Front Cover

Did you know that a horse's teeth keep growing throughout its life? It's true, and they require an annual treatment called "floating," where their teeth are filed down. We have equine dentists who perform this procedure regularly, and they also help other veterinarians by teaching them how to do it. I'm excited to show you more about what a "horse dentist" does in this issue of *Heartbeat*.



Pictured on the front cover is my friend A Real Siberian, a 7-year-old Thoroughbred gelding, who lives at the school's Center for Equine Health (CEH). He helps students learn how to care for horses, and previously participated in studies to help make horse racing safer. Our clinicians and students routinely visit the CEH horses to make sure they're healthy, giving them annual check-ups, including dental exams. To read more about our equine dentists, please see page 4.

Pint 🐾



# 3-Day Eventing Horse Returns to Training Following Colic Surgery

## **Monty, a 6-year-old Thoroughbred gelding,**

was down and displaying signs of colic when owner Ashley Aguado received the late-night call that he was sick. She rushed to him and found her three-day eventing horse in a dire condition.

“When I arrived, Monty’s face was cut up from all the rolling he was doing,” said Aguado. “He was sweating and just didn’t look good overall.”

Having never experienced colic with her horses, Aguado called Monty’s veterinarian and his trainer. Due to the late hour, they suggested getting him to the UC Davis veterinary hospital immediately, as its Large Animal Clinic’s 24/7 emergency service was the only place that could help him.

Following the 1-hour drive to campus, Monty was immediately seen by the emergency veterinarians on duty. As the clock approached midnight, Monty underwent a thorough examination that identified a distended small intestine during rectal palpation and an ultrasound examination, and the presence of red-tinged abdominal fluid collected during a “belly tap.” These findings, as well as the severe, refractory pain that Monty continued to exhibit, indicated he needed emergency surgery. During emergency colic surgery, equine emergency surgeons located and corrected an epiploic foramen entrapment, which is a type of intestinal strangulation. Fifteen feet of Monty’s small intestine needed to be removed because it was irreversibly damaged and a jejunocostomy was performed, in which the remaining small intestine was reattached to empty into the cecum, the first section of the large intestine.

Monty seemed to recover well from surgery and spent a week under close monitoring in the Intensive Care Unit. However, six days after returning home, he became uncomfortable and stopped eating. Aguado wasn’t taking any chances, so she returned with Monty to UC Davis.

In rare cases, horses will colic again following colic surgery due to a variety of reasons that may be related or unrelated to the original surgery. Unfortunately, Monty did not respond to medical treatment and had to undergo another surgery. At the second surgery, a feed impaction at the previous surgery site (jejunocostomy) was found. The impaction was resolved by gentle massage and emptied through an incision in the small intestine. The jejunocostomy site appeared functional



**“When I arrived, Monty’s face was cut up from all the rolling he was doing. He was sweating and just didn’t look good overall.”**

– Ashley Aguado

but inflamed. To allow this site time to heal and reduce its swelling, a second connection was made between the small intestine and large intestine (a jejunocolostomy) to allow feed to empty into the large intestine and bypass the previous site of impaction.

Thankfully, Monty’s recovery from the second surgery has been uneventful. He is on a strict diet of more pelleted feed than hay, and Aguado is allowing him several months to slowly return to competition. Now nine months later, she is finally riding him again for the first time since the surgeries.

“We want to take it slow,” said Aguado. “There’s no need to rush anything, especially since he is such a young horse. We’ll take our time in producing him into a top-level eventer.”

Aguado acquired Monty three years ago when her previous eventing horse maxed out at the “training” level, which is only third on a scale of seven levels in three-day eventing. Even though Monty is early in his athletic career, she feels he can go much further than the “training” level and hopefully has ten years of competition ahead of him.

She plans to slowly get his fitness back up and re-enter competition in 2020. Fortunately, several studies have found that horses can return to athletic activities in their intended discipline (including horse racing) and at their previous or higher level of performance after colic surgery.

# The Importance of **Healthy Teeth**

**One of the most important concepts horse owners can embrace** is that prevention is the absolute key to good health. This is especially true with dental health.

For centuries, people who owned horses knew the importance of caring for their animals' teeth. Historically, the better the horse's dentition, the more the horse was worth. Between then and now, veterinarians have paid much less attention to the dental health of horses and much of equine dentistry was left up to lay people who passed their knowledge on to each other in informal settings.

Today, we know better. Modern equine dentistry requires a physical examination of the entire patient, sedation, and specialized instrumentation to perform the oral examination. Dentistry today has brought forth new ways to approach pathological conditions in the horse's mouth.

Once a horse has reached the age of 6 years, all its permanent teeth are in position and use. If the horse has had periodic, comprehensive dental care up to this time and has no severe malocclusions or dental disease, it is well poised for lifelong dental health. The horse should receive maintenance every 8-12 months thereafter.

The Equine Dentistry and Oral Surgery Service trains students, residents and referring veterinarians to perform modern equine dentistry. With ongoing research, advanced

training, and study of certain conditions, options for treatment of dentistry patients continue to be refined and advanced.

## **BOARD-CERTIFIED SPECIALISTS**

In 2014, the American Veterinary Medical Association approved recognition of a new board certification in equine dentistry. The American Veterinary Dental College (AVDC) Equine Dental Specialty Diplomate is a veterinarian who has been certified by AVDC as having demonstrated specialist knowledge and expertise in equine veterinary dentistry as a result of completing the AVDC entrance requirements and having successfully passed the AVDC equine examination. The AVDC has long recognized a non-species specific certification that many small animal dentists hold.

Dr. Nicola Pusterla, head of the Equine Dentistry and Oral Surgery Service, is one of only 22 veterinarians in the world to hold this equine specific dentistry certification, and the only one who practices in California. Dr. Pusterla, also board certified in large animal internal medicine, has a long-standing interest in equine dentistry and has been performing dental procedures for more than a decade.

Another UC Davis veterinarian interested in pursuing the equine certification is Dr. Colleen Heney, who is pursuing an additional fourth year of residency training at the school.

Having already completed her three-year residency with the small animal Dentistry and Oral Surgery Service, this fourth year is being spent entirely on equine cases in order for her to gain enough large animal experience to seek the additional equine certification.



## ADDITIONAL APPOINTMENTS AND TRAINING OPPORTUNITIES

With the addition of Dr. Heney to the service, the UC Davis veterinary hospital is able to offer more client appointments, more student training, and more training opportunities for referring veterinarians to gain experience in routine equine dental examination, dental imaging and occlusal adjustment. The service also provides courtesy dental case consultations for referring veterinarians.

Dr. Pusterla sees the additional certification, and veterinarians from the small animal side seeking certification, as a big step toward improving the future of equine dentistry.

“I’ve only trained in equine medicine, so that’s all I can offer,” said Dr. Pusterla. “But someone who has trained in small animals can bring an entirely different perspective to the table, and that’s where change happens. So, we’re excited to have Dr. Heney join the service and open new opportunities.”

As a major part of a research-based university, the UC Davis School of Veterinary Medicine is continually seeking ways to translate research into clinical applications and advancing those discoveries into cutting-edge procedures that benefit the hospital’s patients.

“Innovations in translational research and practical applications can only move forward when someone with outside thinking or training enters the picture and brings their different process,” added Dr. Pusterla. “There is much information, understanding, instrumentation, techniques, and treatment options in dentistry that we can translate from small animal to the equine side. It’s an exciting, expanding field.”

## PROCEDURES OFFERED

Drs. Pusterla and Heney are prepared to provide treatment and management of routine or complex equine oral conditions.

### ■ Comprehensive Oral Evaluations

Includes external oral findings, oral soft tissue findings, assessment of occlusion and any focal malocclusions, periodontal status, and endodontic status. The oral



examination is conducted under standing sedation, and all findings are notated on a recently redesigned dental chart that incorporates the examination components in a systematic fashion.

### ■ Detailed Imaging Techniques

Includes intra- and extra-oral radiography and CT scanning of the teeth and sinuses to accurately define which teeth are diseased if this remains in doubt after a thorough oral examination and radiographic study.

### ■ Restorations, Filling and Endodontics

The goal is to maintain the function of the affected tooth (teeth). Horses’ teeth are subject to trauma and decay associated with cavities and exposure of vital portions of the tooth. UC Davis’

state-of-the-art dental unit allows clinicians to perform restorations, including root canals when the pulp is involved.

### ■ Periodontal Treatments

Usually performed in middle-aged and older horses due primarily to food packing in areas between teeth. The goal of periodontal treatment is to slow or stop progression of this painful condition and prevent further bone loss and periodontitis, which ultimately leads to tooth loss.

### ■ Teeth Extraction

When extraction of teeth is necessary, the preferred approach is to perform the extraction under sedation with the horse standing. Standing extractions are performed in stocks with sling support, and patients are monitored continuously throughout the procedure by board-certified anesthesiologists. When standing extractions are not possible or are judged to be inappropriate for a particular patient, surgical extraction under general anesthesia is pursued. The Equine Dentistry and Oral Surgery Service also provides standing sinus surgery for diagnostic and therapeutic purposes.

### ■ Training of Veterinarians in Equine Dentistry

In order to build strong collegial relationships with our referral community, the service provides training in routine equine dental examination, dental imaging and occlusal adjustment.

# Building the Foundation for Excellence in Veterinary Medicine

**Harold “Hal” Parker was a proud member of the Class of 1952** – the school’s inaugural graduating class of 42 students, nearly all World War II veterans. He was pivotal in building the foundation for excellence in veterinary medicine at UC Davis, starting with the groundbreaking ceremony for Haring Hall in 1948.

Thanks to a gift from his wife Annette, Parker’s legacy will continue to help the school break ground. One of the major projects planned for the future Veterinary Medical Center (VMC) is the Small Animal Clinic East Wing. The consultation room located on the clinic’s second-floor emergency suite will be named “In honor of Harold R. Parker, DVM, Ph.D. & Annette D. Parker.”

“The School of Veterinary Medicine meant so much to Hal,” Annette said. “I couldn’t think of a better way to honor his legacy of dedication, innovation and vision than creating a philanthropic opportunity at the new Veterinary Medical Center, at the number one veterinary school in the nation.”

As an undergraduate, Parker was founder and president of the Pre-Veterinary Association and instrumental in spearheading the effort to locate the School of Veterinary Medicine at UC Davis. After a series of livestock disease outbreaks during the 1930s, agricultural producers, legislators and the community pushed for the establishment of a veterinary institution in California. In 1948, then University of California President Gordon Sproul presented Parker with a shovel gilded in blue and gold, and commissioned him to conduct the groundbreaking of Haring Hall.

In one of his memoirs, Parker recounted that 1949 was another monumental year for him – completing his first year of veterinary school and marrying the love of his life, Annette. After graduation, the couple moved to Watsonville, California, where Parker maintained a private practice for four years before returning to Davis to pursue a Ph.D. in animal physiology and to raise his family.

Parker joined the school’s faculty as a physiologist in 1960. During his 27-year career at UC Davis, he played a dynamic part in the development of modern veterinary medical specialties, including intensive care, and emergency and critical care services at the teaching hospital. His innovative work also transcended boundaries through collaborations with human medicine specialists, contributing to hemodialysis and hip replacement for people.

Since its establishment, the school has educated nearly 6,000 DVM degree graduates and addressed societal needs by working to benefit the health of animals, people, and the environment in California and beyond. The VMC will transform excellence in veterinary medicine and will be built to promote clinical innovation, cutting-edge research, and compassionate healing.

*Is there someone special that you wish to honor? Please consider a philanthropic opportunity to the UC Davis Veterinary Medical Center. For more information, contact us at 530-752-7024 or visit [www.vetmed.ucdavis.edu/giving/vmc](http://www.vetmed.ucdavis.edu/giving/vmc).*



Annette Parker holds a photo of her late husband, Dr. Harold “Hal” Parker ’52.

# Exotics Team Treats 61-Year-Old Tortoise

**Mohave, a 61-year-old desert tortoise,** was recently brought to the UC Davis veterinary hospital for a recurrence of bladder stones – an issue he was previously treated for in 2014. A few weeks ago, his caretakers noticed that his urates (component of a reptile’s urine) were thick and pasty. Shortly thereafter, Mohave prolapsed his cloaca (common exit for the urinary and gastrointestinal tract); most likely due to straining to eliminate the pasty urates.

“We took some radiographs and saw some distinct white shapes within his coelomic (abdominal) cavity,” said Dr. Juliana Sorem, head veterinarian at Wildcare, a wildlife hospital and nature education center in San Rafael, and Mohave’s home since 2003. “We compared the images with the radiographs taken at his last routine physical and didn’t see these objects on them. Given his clinical signs and the radiographic images, I was fairly certain the stones had recurred.”

Dr. Sorem, a 2006 graduate of the UC Davis School of Veterinary Medicine, knew WildCare’s in-house clinic was not equipped for major surgical procedures, but she knew just where to take Mohave.

“Because UC Davis was able to successfully remove his previous bladder stones without having to cut his shell, we decided to pursue treatment there again,” said Dr. Sorem. “I particularly wanted to have the surgery done at UC Davis because of their extensive experience with exotics surgery and anesthesia.”

The hospital’s Companion Exotic Animal Medicine and Surgery Service is the largest center in California that treats exotic companion animals, and its clinicians have published research on Mohave’s condition.

Faculty member Dr. David Guzman and resident Dr. Sarah Ozawa were able to remove the stones via an endoscopic-assisted



procedure. This minimally invasive technique allows the clinicians to access the bladder through the skin and muscles of the prefemoral fossa in front of the hind limb instead of having to cut through the plastron (shell). Due to Mohave’s regular care and annual check-ups, the stones were caught early enough to be removed in this fashion.

“After his previous bout with bladder stones, we started taking annual radiographs to look for new stones, in the hope that we might find them while they were still small,” Dr. Sorem said.



A radiograph of Mohave shows the bladder stones in his coelomic (abdominal) cavity.

Dr. Guzman warns that if stones go unchecked for too long, they may grow so large that it could be complicated or impossible to be removed through a minimally invasive approach.

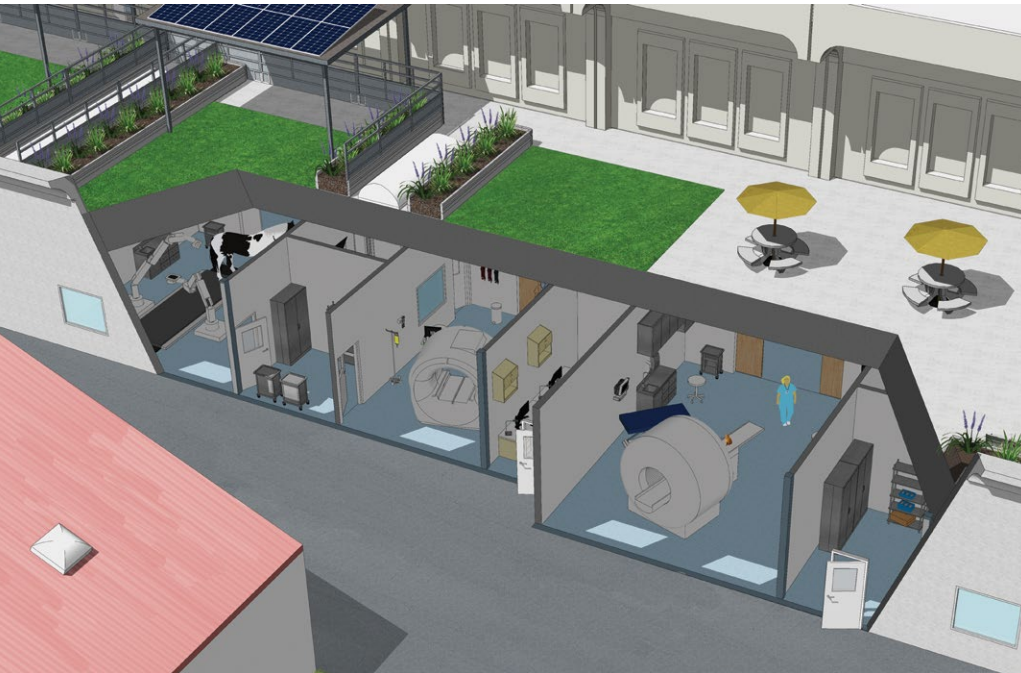
“If we have to enter through the plastron, it’s very invasive,” said Dr. Guzman. “It takes a long time to heal, and sometimes it fails to heal properly. So, Mohave’s case is a great example of the importance of annual check-ups for any animal.”

At 61, Mohave still has plenty of living to do. In the wild, desert tortoises can live upwards of 80 years. In captivity, that life expectancy can be even longer.

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## ALL SPECIES IMAGING CENTER – *Leading the Way in Imaging Technology*

The next project of the UC Davis Veterinary Medical Center campaign is the All Species Imaging Center (a cut-away view of an artist's rendering pictured above). This new central hub of imaging technology and expertise will expedite diagnosis and patient care, reduce stress and wait time for our patients, and optimize operational efficiencies. To learn more, visit [www.vetmed.ucdavis.edu/giving/vmc](http://www.vetmed.ucdavis.edu/giving/vmc) or call us at 530-752-7024.

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