

Zweig

From the Harry M. Zweig
Memorial Fund for Equine
Research at the Cornell University
College of Veterinary Medicine



No. 76 December 2023

Cornell helps horse with irregular heartbeat return to jumping

By Jamie Crow

Rose, a nine-year-old warmblood mare, had just the right amount of energy and feistiness to become a successful show jumper when her owner, Claudia, bought her in January 2022. But nine months later at a series of classes in Tryon, North Carolina, Claudia noticed a change. While Rose had initially performed well, during the last class she began knocking fences down and when they left the ring, Rose developed a nosebleed.

"I wasn't thinking it would be serious then," Claudia says. "It was hot, there wasn't a lot of humidity, and with the exercise it seemed like the perfect storm."

And while three other horses developed nosebleeds that day, Dr. Sarah Allendorf, the veterinarian on site, noticed something additional in Rose: She had an irregular heart rhythm, otherwise known as an arrhythmia.

Claudia and her horses traveled home to Cazenovia, New York and a few weeks later, Rose's heart still hadn't improved. Claudia set her up for an evaluation at the Cornell Equine and Nemo Farm Animal Hospitals (ENFAH), where Dr. Katharyn Mitchell, assistant professor in the Section of Large Animal Medicine with a subspecialty in cardiology,

reviewed Rose's case and had suspicions of atrial fibrillation, or AFib. This is an irregular heartbeat that impacts high performing horses like Rose and, if left untreated, can have secondary consequences.

Because Rose's heart hadn't spontaneously returned to sinus rhythm (a normal, regular heartbeat), Mitchell, with Dr. Beth Williams Louie, a D.V.M. studying for her Ph.D. under Mitchell, and Dr. Hanna Sfraga, resident in large animal medicine, evaluated Rose to determine the cause of the AFib. "While AFib can be a secondary condition that's caused by underlying heart disease, bigger horses like Rose are more at risk for arrhythmias simply due to their size and their naturally larger hearts," Mitchell says.

Rose's evaluation involved multiple components, including a heart ultrasound, known as an echocardiography, which provided a visual representation of Rose's heart. Mitchell also conducted an exercise test at the walk, trot and canter with Rose, which involves the horse wearing



Rose's Cornell veterinarians suspected she was suffering from atrial fibrillation, or AFib. This is an irregular heartbeat that impacts high performing horses like Rose and, if left untreated, can have secondary consequences. Photo: SportFot/provided

2023 Zweig business meeting features research, reception and VIP tour

a portable ECG device that transmits to a computer so the heart rate and rhythm can be monitored in real time. Although the evaluation ruled out underlying heart disease, Mitchell found that Rose had a higher-than-normal heart rate during exercise, making it dangerous for Rose to do so.

Medical treatments for AFib are available, but based on Rose’s risk factors and high heart rate, Mitchell and her team decided to perform a transvenous electrical cardioversion, or TVEC, which ‘shocks’ the heart back into a normal sinus rhythm. For the procedure, Mitchell and other members of the ENFAH Cardiology Service guided catheters to the heart while Rose was standing and lightly sedated. Starting from the right jugular vein, the specially designed long catheters pass into the right atrium, right ventricle and pulmonary artery. The correct placement was evaluated in real time using an ultrasound, and then once again with an x-ray taken by the Imaging Service. Then, the Anesthesia and Pain Medicine Service induced general anesthesia and monitored Rose’s health status so Mitchell and her team could watch the ECG and time the TVEC ‘shocks’ appropriately. The TVEC stops the abnormal rhythm, giving Rose’s heart a chance to resume a normal sinus rhythm. It took four shocks for Rose’s heart to do so, which Mitchell says is average for this procedure.

Rose recovered from the anesthesia and TVEC well. She rested for one month and a recheck at Cornell

showed good results. Claudia started jumping Rose, working with her incrementally to ensure she wasn’t doing too much too quickly.

Now, six months after the procedure, Rose is back to jumping nearly as high as she was prior to the AFib diagnosis. Because she’s a bigger horse with a naturally larger heart, she has a risk of an AFib recurrence, but other factors are in her favor: Because of Allendorf’s quick diagnosis and Claudia’s rapid contact with Cornell, she wasn’t in AFib for very long prior to her procedure, and she hasn’t had any other known AFib instances.

Mitchell says she looks forward to following Claudia and Rose’s show jumping journey as it continues. She is also excited to bring TVECs back to Cornell, a procedure she has experience with from both her Cornell residency and Ph.D. training in Switzerland. She hopes that Cornell can perform it more regularly now that the expertise and equipment are on hand.

Thanks to the attentiveness of Claudia and the collaboration of ENFAH’s Cardiology, Imaging, Large Animal Medicine and Pain Medicine and Anesthesia Services, Rose’s case was a success.

“It was so lucky for us that Cornell was so close,” Claudia says. “It was just very nice to have that group of doctors, and I’m very grateful for all of them.” ●

2023 faculty research presentations

The presentations given discussed equine research conducted here at Cornell University and followed the opening remarks by Dr. Robert Weiss, associate dean for Research and Graduate Education.

- **Dr. Mandy M de Mestre**, professor in the Department of Biomedical Sciences and the Baker Institute for Animal Health: “Shining a light on the mysteries of pregnancy loss in mare.”
- **Dr. Marta Cercone**, assistant professor in the Department of Clinical Sciences: “Celiac plexus block, a novel aid in treating colic in horses?”
- **Dr. Mariana Diel de Amorim**, assistant professor in the Department of Clinical Sciences: “Investigation of novel inflammatory markers as a screening diagnostic test for equine endometritis.”
- **Dr. Scott Palmer**, New York state equine medical director and adjunct professor in the Department of Population Medicine and Diagnostic Sciences: “Investigation of catastrophic injury clusters at New York state racetracks.”



Above: Committee members at the 2023 Zweig business meeting. Below: Committee members tour the equine park. Photos: provided



The 2023 Harry M. Zweig research event and committee meeting was held Nov. 15 and 16, featuring talks of equine research by Cornell faculty, a poster session and reception in the Takoda’s Run Atrium. The poster session winner was Dr. Elizabeth Williams Louie, a Ph.D. student in the lab of Dr.

Katharyn Mitchell, for her poster titled, “Myocardial dysfunction associated with endotoxin administration in adult horses.”

Following their annual business meeting, Zweig Committee members shuttled to Cornell’s newly constructed equine park for a VIP tour given by farm manager Jessica Crumb and director of facilities Michael Stewart. ●

Recent publications from Zweig-funded projects

Seewald LA, Sabino IG, Montney KL, Delco ML. “Synovial fluid mitochondrial DNA concentration reflects the degree of cartilage damage after naturally occurring articular injury.” *Osteoarthritis and Cartilage*. Aug 2023.

Simonin EM, Wagner B. “IgE-binding monocytes upregulate the coagulation cascade in allergic horses.” *Genes and Immunity*. Jun 2023.

Pearson GB, Papa B, Mosaddegh A, Cooper H, Aprea M, Pigott J, Altier C, Cazer CL, Reesink HL. Equine synovial sepsis laboratory submissions yield a low rate of positive bacterial culture and a high prevalence of antimicrobial resistance. *American Journal of Veterinary Research*. Jul 2023.

Simonin EM, Babasyan S, Tarsillo J, Wagner B. IgE+ plasmablasts predict the onset of clinical allergy. *Frontiers in Immunology*. Feb 2023. ●

Dr. Cook brings continuity of care and guidance to horse carriage industry

The below was originally written by Zweig Committee member Dr. Gabriel Cook for NYDailyNews.com and is reprinted with permission

Nearly a year ago, I became involved in a New York City tradition that periodically erupts into headline-grabbing controversy: horse-carriage rides in Central Park. It's been quite a ride.

I'm an equine veterinarian and surgeon with more than 32 years of experience evaluating and treating horses. I'm also a partner of the New England Equine Practice in Patterson, N.Y., where we have our own horse hospital.

Since last August, I have been coming to the carriage horse stables with my staff every other week to conduct twice-annual horse exams, which are mandated under city regulations, and to handle other health-related concerns brought to my attention. I also have worked extensively with Transport Workers Union Local 100, which represents the drivers and owners. The goal is to not only follow the



Equine veterinarian Dr. Cook examines carriage horse Scout. Photo: Gabriele Holtermann

extensive NYC regulations but to exceed them. I can't talk about the past. But after my involvement over the last 11-plus months, I can say without hesitation: the claim by "animal rights activists" that the carriage horses are not well cared for is simply false. Widespread abuse or neglect does not exist.

Similarly, the broad-brush portrayal of carriage drivers as a bunch of greedy animal abusers is not only false, but a terrible injustice to these working men and women.

I have met some truly wonderful and committed horse people: Mario, an immigrant from Italy living two of his dreams: raising a family in America and working with horses. Angel, whose first job after arriving from Mexico was cleaning horse stalls. He saved for years and just purchased his own carriage and medallion, becoming a small business owner in the trade. Jill, who quit her higher-paying office job, because she found caring for horses and spending her days with them more rewarding than sitting behind a desk.

After we complete the scheduled physical exams at the stables (exams that we have made more rigorous), my staff and I often spend hours answering drivers' questions, checking their horses, and dispensing advice and directives. We also frequently talk to drivers over the telephone — and provide telehealth consultation that can include reviewing video of individual horses.

We have identified horses with issues and followed approved protocols, such as prescribing changes in their diet, additional rest, dental care, medication, further testing, and evaluations. We have identified horses with signs of colic (a common ailment among horses that can range in severity), and they were sent directly to our hospital for

care. The owners and drivers I have interacted with have overwhelmingly been cooperative and have demonstrated genuine concern for their animals.

With more than 120 carriage horses in New York



Carriage driver Ahmet Bilici and his horse Chocolate wait for customers. Photo: Gabriele Holtermann

City at any given time, there will always be health situations to address — just as there are with horses outside the city. The horses here are just more likely to be photographed and tweeted about, perhaps more so than any other group of horses in the world.

While that can result in negative spins by some, the truth remains that when concerns are raised, the Department of Health investigates and corrective action is taken when warranted. There also have been several significant other proactive initiatives enacted over the last 11-plus months:

- TWU Local 100 formed a Safety Committee of drivers and elected shop stewards to bring medical issues to our attention and provide a structure for positive change.

- TWU retained Tristan Aldrich, an expert horseman — who once worked at the Buckingham Palace stables in London — to help with the care of the carriage horses. He is in the park once a week observing the horses, flagging any health concerns, and promoting best practices to drivers.

- Dr. Anthony Blikslager, an equine surgery professor and the head of North Carolina State University's Clinical Sciences Department, inspected the horses and stables at our request. Using an equine behavioral score developed by scientists, he found the horses showed all signs of being healthy and content. The horses he observed "were in excellent body condition" and "interactive with their handlers... interested in socializing with their ears forward and their heads in a normal position." The stables "were all clean,

well-ventilated, and with a reasonable temperature for horses." The stalls were "adequate to allow horses to lie down." The feed was "of excellent quality." The stable staff "exceptionally hard-working and professional."

New Yorkers should know there is a genuine, ongoing effort to provide the best possible care for these amazing animals as there should be. They bring joy to so many park visitors from around the city, the country, and the world.

Cook is an equine veterinarian providing physicals and other care to a majority of the Central Park carriage horses. ●

Teamwork at Cornell Equine Hospital leads to a happy outcome for a mare and her foal

By Christina Frank

Chacco Astraeus, a Warmblood foal, had a rough start in life, but thanks to a seamless collaboration on the part of a team of specialists at Cornell Equine Hospital, Chacco is now a thriving three-month-old with a potential future as a show jumper.

Shortly after Chacco's mother, Chacca Blue, went into labor, it became evident that things were not progressing normally and that both the foal and the mare were in danger. "The foal's feet would emerge from the birth canal, and then they would disappear again," says Sarah Paddock, the horses' owner.

The veterinarian who was on-site at the barn, Erica Hutten '99, D.V.M. '03, herself a Cornell alumna, made the call to get Chacca to the Cornell Equine Hospital immediately. "One of the trainers at the barn walked Chacca right onto the trailer and drove her straight to Cornell,"

Paddock says. "I mean, we didn't waste even a minute."

When the mare arrived at the hospital, a team of faculty and residents was ready and waiting to handle the emergency.

"We needed to make things happen pretty quick," says Dr. Callum Donnelly, assistant professor in the Section of Theriogenology, who was able to deliver the foal safely. "Often when we have a mare come in that is having a difficult birth, we have a really tight timeframe to deliver the foal alive. They call it the golden window, which is about 90 minutes. Longer than that is often incompatible with a successful outcome."

In this case, that window of time had been used up during the drive from the barn in Bloomfield, NY, to the hospital in Ithaca, so it was a relief that both mare and foal survived.

"I was just sobbing with relief,"

says Paddock. "It would have been devastating to lose the foal, and I am so in love with Chacca that the idea of losing her stopped me from breathing."

Donnelly credits Hutten for recognizing very early on that this was a situation that required the specialist care available at Cornell.

Chacca Blue recovered from the birth without complications, and Chacco Astraeus was in stable condition, but it soon became clear that the foal was not able to swallow milk when he nursed, a condition called dysphagia. When the foal tried to nurse, there was a rattly sound in his throat and milk came out his nose. Additionally, instead of going down his esophagus and into his stomach, the milk went down his trachea to his lungs, causing aspiration pneumonia.

"This can happen for a lot of reasons," says Dr. Barbara Delvescovo, a clinical instructor in large animal medicine and critical care. "Sometimes foals with difficult births or neonatal infections can be born with pharyngeal weaknesses and incoordination. In other cases, deficiencies are the culprit or sometimes it is a congenital problem, which it was in this case."

To diagnose the problem, Chacco underwent a laryngeal endoscopy, where a camera is passed through the nostril to get an inside look at the larynx, as well as an ultrasound. Doctors discovered that there was a big cyst under his soft palate and epiglottis, called a

subepiglottic cyst. "The anatomy of the area was very abnormal and mechanically he couldn't swallow properly," says Delvescovo.

Delvescovo's team started Chacco on medical therapy for the pneumonia and worked with Dr. Eileen Hackett, professor of large animal surgery, who performed the operation to remove the cyst.

"A video endoscope and specialized instruments were used to carefully remove the cyst, which will give Chacco Blue the best chance at normal throat function," Hackett says.

While the procedure can be challenging for a young horse already recovering from a traumatic birth and aspiration pneumonia, thanks to Cornell's expert care team, including top anesthesiologists and surgeons, Chacco came through it well. For

a couple of days after the surgery, he had to be fed through a tube since he couldn't nurse because he had swelling around the roof of his mouth. Once the swelling went down with medical treatment and time, the doctors placed him under the mare, and he was able to nurse with no problem.

"It happens very often that we have complicated cases on which multiple services and clinicians collaborate," says Delvescovo. Indeed, the theriogenology, medicine, surgery and other teams provided care throughout and kept the owner and referring



Chacca and Chacco.
Photo: provided

veterinarian informed. "A huge part of our work is being able to communicate effectively and work together closely for the best interest of the patient."

Paddock reports that Chacco is doing well and is a super-friendly little foal. "He's the world's largest golden retriever," she says. She says she is beyond grateful to the team at the Cornell Equine Hospital, who had also performed orthopedic surgery, splint bone removal, on Chacca, the foal's mom, a few years ago when she was still jumping. "They're top of their game, top of the industry. They saved her life. They saved his life. They're the best." ●



Chacca jumping at a show. Photo: provided

2024 Harry M. Zweig Memorial Fund Committee Cornell University College of Veterinary Medicine

Scott Ahlschwede, D.V.M.
Rood & Riddle Equine Hospital
Saratoga Springs, NY

Gabriel Cook, D.V.M.
New England Equine Practice
Patterson, NY

Janet Durso, D.V.M.
Middletown, NY

Ann Dwyer, D.V.M.
Genesee Valley Equine Clinic, LLC
Sottsville, NY

Laura Javicas, V.M.D.
Rhinebeck Equine LLP
Rhinebeck, NY

Ralph Scunziano
New York State Gaming Commission
Schenectady, NY

Richard Schosberg
Muttontown, NY

Lorin D. Warnick, D.V.M., Ph.D.
Austin O. Hooey Dean of Veterinary
Medicine
Cornell University College of
Veterinary Medicine
Ithaca, NY

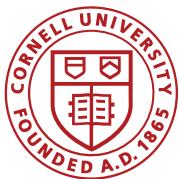
Patricia Wehle
Pittsford, NY

Robert Williams
New York State Gaming Commission
Schenectady, NY

William Wilmot, D.V.M.
NYS Thoroughbred Breeding &
Development Fund Corporation
Saratoga Springs, NY

Brian Zweig
Rensselaer, NY

*The Harry M. Zweig Memorial Fund
Committee extends its gratitude to exiting
committee member Ronald Ochrym.*



College of **Veterinary Medicine**

Zweig News Capsule
S3-216 Schurman Hall
Ithaca, NY 14853-6401

NON-PROFIT ORG.
U.S. POSTAGE
PAID
CORNELL
UNIVERSITY



The Harry M. Zweig Memorial Fund for Equine Research honors the late Dr. Harry M. Zweig, a distinguished veterinarian, and his numerous contributions to the state's equine industry. In 1979, by amendment to the pari-mutuel revenue laws, the New York State Legislature created the fund to promote equine research at the College of Veterinary Medicine at Cornell University. The Harry M. Zweig Committee is established for the purpose of administering the fund and is composed of individuals in specified state agencies and equine industry positions and others who represent equine breeders, owners, trainers and veterinarians.

Visit us online
bit.ly/ZweigFund

Our site provides information on the projects and publications resulting from the Zweig Memorial Fund, and demonstrates the objectives of the Fund in promoting equine health in the racing industry. The Zweig News Capsule is published twice a year, and can be downloaded at bit.ly/ZweigNews. Please encourage other equine enthusiasts to visit the site.

Cornell University is an equal-opportunity, affirmative-action educator and employer.