



Cornell University College of Veterinary Medicine

Pre-Vet Newsletter

March 2012



Early Acceptance Program

The Early Acceptance Program gives exceptionally qualified applicants the opportunity to obtain admission after their sophomore year. With a seat secured in a future class the student has the opportunity to explore experiences in areas of personal interest. The Early Acceptance Program application is available on our web site at

<http://www.vet.cornell.edu/admissions/OAEarlyAcceptance.cfm>.

In addition to the application and supporting documents (transcripts, GRE scores, evaluations) you will need to submit a written plan describing how the time between acceptance and matriculation will be used.



Join us for the 46th Annual Open House Saturday, April 14, 2012; 10:00-4:00



Activities include demo's, virtual tours, exhibits, lectures, and admissions information & veterinary career sessions. This is a wonderful opportunity to come with your pre-vet club or family. For more information visit our web site at

www.vet.cornell.edu/openhouse

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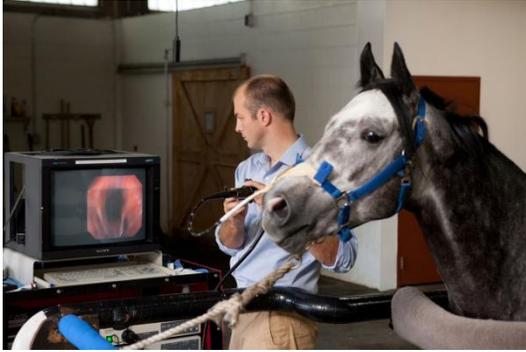


Photo by Alexis Wenski-Roberts

Reining in roaring Earlier detection and new treatments for horse racing's number-one performance problem

Article by~ Carly Hodes

It's a big day at the track. Years of training and thousands of dollars are at stake. The gates open and your horse launches forward. But his breath comes in gasps. It looks as if he's wearing a heavy mask that is blocking his access to air. Worn nerves signal sluggishly to weakened muscles that barely respond enough to open his airway. He slows and falls to the back of the pack.

This career-limiting problem affects nearly 8 percent of race horses and a higher percentage of sport horses. Officially called recurrent laryngeal neuropathy, the common equine disease is better known as "roaring" for the strained sounds affected horses make when they try to run. It shares similarities with human vocal cord paralysis, a neurological condition causing difficulty breathing and loss of speech, and requiring tracheostomy and intensive surgery. Roaring starts early and unseen, slowly wearing down the nerves that stimulate the cricoarytenoid dorsalis muscle responsible for opening the larynx.

"Upper airway problems cause poor performance in many race horses," said Dr. Jonathan Cheetham, an equine surgeon and sports medicine practitioner at Cornell's Equine Hospital. "Symptoms often show in a horse's second to fourth year, when a trainer has already invested thousands in its athletic career. The standard treatment, surgery called a laryngeal tie-back together with a 'lazer hobday' procedure to remove the vocal cords, returns 65-70 percent of treated horses to racing. But that's after six weeks of recovery and another six weeks to regain fitness. It takes a toll on the horses, their trainers, and the racing economy."

Taking roaring by the reins, Dr. Cheetham and the Equine Performance Clinic team are helping to change how veterinarians look at and treat the disease. The team running the Clinic's indoor treadmill offers good client service while researching new methods to diagnose disease earlier and improve treatments.

According to Dr. Cheetham, the horse is a useful preclinical model of human airway disease. Much of what he is learning and working out at Cornell could help restore function in human patients with laryngeal disease. The Equine Performance Clinic pioneered techniques using a trans-esophageal ultrasound to evaluate airway muscles in horses. Developed at Cornell with support from the Harry M. Zweig Memorial Fund for Equine Research, these techniques could give human doctors a new view of deteriorating laryngeal muscles and let them follow progress after treatment.

The team is developing a novel treatment for roaring using a laryngeal pacemaker to electronically stimulate the muscle and maintain its function: another technology applicable to humans with vocal paralysis.

Dr. Cheetham has spent the past year developing new ways of detecting neurological disease earlier, thanks to a grant from the Grayson Jockey-Club Foundation.

“Motor nerves need insulation from myelin sheathes to carry signals quickly,” said Dr. Cheetham. “Laryngeal neuropathy works by breaking down myelin in the two major meter-long nerves controlling the horse’s airway muscles, slowing their conduction velocity and cutting off the muscles from adequate stimulation. If we can use nerve conduction velocity to detect early myelin breakdown we may be able to catch the disease before the muscle starts shrinking.”

Placing tiny needles into the nerves, Dr. Cheetham measured conduction speeds across their length to see how speeds vary across the nerves. Next he will validate a technique that does not use needles and look at how nerve conduction velocity at the weanling stage affects performance of 2-year-old horses with the hope of confirming it as a viable diagnostic and predictive tool. Validating such a test would expand the window of detection, open doors to earlier prevention and treatments, and aid understanding of the disease mechanisms that produce roaring in horses.



Photo by Alexis Wenski-Roberts

“We have also been developing ways of enhancing nerve grafting using tissue engineering techniques,” said Dr. Cheetham. “If we can pick up problems early, we might be able to treat without invasive surgery or a permanent implant. It could be safer, cheaper, and faster, and may improve the success of recovery from airway diseases in both horses and humans.”

Upcoming Programs

We will be represented at the upcoming **MANRRS 27th (Minorities in Agriculture Natural Resources and Related Sciences) Annual Conference Career Fair**- Westin Peachtree Plaza, Atlanta, GA, Friday, March 30, 2012 (10-4) Conference registration required: <https://www.ameetingplace.com/manrrs/>

Summer College for High School Students at Cornell University~

Courses include: **Veterinary Medicine:** *Small Animal Practice*; **Veterinary Medicine:** *Conservation Medicine*; **Animal Science:** *Sustainable Animal Husbandry*; **Animal Science:** *Captive Raptor Management*.

For more information visit~

<http://www.sce.cornell.edu/sc/programs/index.php?f=Vet+Med%2FAnimal+Science>

Admissions Presentations & Tours



Spring 2012

- *Friday, March 30th from 3:00-5:00*
- *Saturday, April 14th (Open House) at 10:30, 12:30, and 2:30 (presentation & student panel)*
- *Friday May 11th from 3:00-5:00*
- *Friday, June 15th from 3:00-5:00*

*Summer 2012 dates will be
on our web site soon!*

Register for the Admissions Presentations & Tours on our web site~

<http://www.vet.cornell.edu/admissions/PresandTours.cfm>