

Zweig

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



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Healing with horses

By Olivia Hall

When Teagan Manning first began working with Hero, she felt an immediate kinship with the horse — a five-year-old mustang gelding who was still unused to being handled. The veteran recognized the same kind of exhausting stress, anxiety and hypervigilance that had been plaguing her ever since a severe training accident had cut short a 14-year career with the United States Marine Corps. “I realized that if I was going to help Hero, I was going to have to find this calm centeredness within myself, in order to help him learn and achieve the things that he needs to achieve,” Manning said. “And that calm centeredness I haven’t felt in years.”

The pair continued to train together under the auspices



Mission Mustang© brings captive mustangs together with veterans burdened with the emotional and physical scars of war.

Photo: EquiCenter

of Mission Mustang©, one of a diverse array of programs serving individuals with disabilities, at-risk youth, veterans and their families at EquiCenter in Honeoye Falls, New York. Housed at the 200-acre William and Mildred Levine Ranch, the nonprofit is a Professional Association of Therapeutic Horsemanship International Premier Accredited Center and offers therapeutic equestrian and related activities, including horseback riding and horsemanship, adaptive yoga, canine-assisted activities and farm-to-culinary classes. In 2018, in collaboration with Cornell Cooperative Extension and the Canandaigua VA Medical Center, EquiCenter secured an \$850,000 contract from the U.S. Department of Veterans Affairs’ Office of Rural Mental Health to teach therapeutic horticulture and farming to veterans on its three-acre organic farm.

When Manning joined Mission Mustang©, it was a pilot program between EquiCenter and the Bureau of Land Management (BLM) to bring captive mustangs together with veterans burdened with the emotional and physical scars of war. “Veterans are really given a purpose,” said Jonathan Friedlander, EquiCenter’s CEO and co-founder with his wife Stacy, who is an accomplished equestrian. The purpose: Gentle mustangs and prepare them for a new home.

The first four horses arrived at EquiCenter from Wyoming in 2018, joined later by six others purchased at a BLM auction at Cornell’s Oxley Equestrian Center. All come from among some 50,000 wild mustangs and burros held by the BLM in off-range corrals and pastures to ease pressure off the nearly 100,000 free mustangs that crowd into 10 western states with insufficient space to roam and thrive. Being separated from their herd and brought into captivity only heightens the mustangs’ natural self-protective instincts as prey animals. “The hypervigilance and anxiety and the desire to fit back in really mirror what many veterans with post-traumatic stress are experiencing,” Friedlander explained. “They feel a sense of

common struggle and connection to the mustangs.”

As the veterans learn — step-by-step and under the guidance of such experts as lead mustang trainer Steve Stevens — how to handle the wild animals, they themselves begin to change. “To watch the veteran have to dig deeply into his or herself, to be quiet, to be able to gentle the mustangs is a really powerful thing to see,” said Pat Wehle, a retired standardbred breeder and Zweig committee member, who serves as an informal advisor to EquiCenter. Ann Dwyer, D.V.M. ’83, also a Zweig committee member and EquiCenter advisor, is another shared connection.

A veteran named Mike no longer harbors thoughts of suicide, Friedlander reports, and another stopped wishing he’d died in Afghanistan. Manning has regained confidence and focus that extend into life outside the ring. In a letter to the future owners of Liberty, one of 10 mustangs who have been adopted to date, participant Brett Avery wrote, “I’m sure I could speak for everyone who worked with her when I say that she was the light and guidance we needed. We as veterans went to Mission Mustang© to save these horses, but in actuality they saved us!”

Having lost three military friends to suicide in the year after he retired from the U.S. Marine Corps, Avery hopes to bring such healing to many more of his fellow veterans. Last year he joined forces with Friedlander to organize Hoof-it for Heroes©. During the inaugural challenge, people from 19 states and six countries ran, walked, rode or otherwise covered a 2.2-mile distance — one pilot in

South Korea flew his jet 2.2 miles in 30 seconds — to call awareness to the 22 veterans and active military personnel who end their own lives every day. Funds raised support Mission Mustang©, which Friedlander intends to serve as a model and inspiration for other facilities around the country and world.

Friedlander invites anyone who wants to raise awareness for veteran and active military suicide and support Mission Mustang© to participate in this year’s event — likely joined by members of Queen Elizabeth II’s Household Cavalry, with whom EquiCenter has ongoing working exchanges to share best practices and programs to help wounded veterans and active military in both countries. The second annual Hoof-it for Heroes© will begin Nov. 7 and continue for 22 days. For more information, please visit: www.equicenterny.org/hooftforheroes •



*“[Veterans] feel a sense of common struggle and connection to the mustangs.”
- Jonathan Friedlander, EquiCenter president and CEO. Photo: EquiCenter*



Harry M. Zweig Memorial Fund for Equine Research Awards

NEW

\$99,336 to John Pigott and Alan Nixon for “Multi-modal Screening to Identify Thoroughbred Racehorses at Increased Risk for Catastrophic Injury of the Metacarpophalangeal Joint”

\$83,113 to Bettina Wagner for “Intranasal Biomarkers of EHV-1 Susceptibility and Protection”

\$64,463 to Michelle Delco for “Synovial Fluid Extracellular Vesicles in Equine Joint Disease and Therapy”

CONTINUED

\$89,440 to Heidi Reesink for “Unraveling Lubricin Signaling in Equine Joint Injury”

\$57,205 to Bettina Wagner for “Nasal Immunity and Its Function in Preventing Transmission of EHV-1 in Immune Horses”

Zweig Memorial Trot



Saturday, August 28, 2021
Vernon Downs, Vernon, New York
Post time: 6:10 p.m.

Information: 1-877-888-3766 | vernondowns.com/racing

Cornell bids farewell to leaders in equine medicine excellence

By Lauren Cahoon Roberts

In recent months, several equine luminaries have retired from their positions at the college. Their accomplishments have defined the cutting edge in clinical care, driven innovative discoveries and trained the next generation of world-class veterinarians. While saying goodbye to such living legends is not easy, it offers a chance to reflect on their impact.

Diving deep

Dr. Thomas Divers, the Rudolph J. and Katharine Steffen Professor Emeritus of Veterinary Medicine, has played a pivotal part in placing Cornell at the front of the pack when it comes to equine medicine. He and his colleagues have made foundational discoveries in equine motor neuron disease, Lyme disease, protozoal myelitis, equine hepatitis, equine liver disease, equine leptospirosis and more — many

of his research projects funded by the Harry M. Zweig Foundation.

Divers was drawn to Cornell thanks to its mix of both dairy cattle and equine caseload, and for the opportunity to do collaborative research concurrent with his clinical work. “That’s what drew me here, and it all worked out perfectly,” he says. “My knowledge of the clinical questions allowed me to jump in on research projects and allowed our research teams to make a difference.”

Divers has won three teaching awards at three universities, as well as the Educator of the Year Award from both the American Association of Equine Practitioners and the American College of Veterinary Emergency Critical Care and the Cornell University Hospital for Animals (CUHA) Distinguished Service Award for service to referring veterinarians. He also received the American Veterinary Medical Association’s Samuel F. Scheidy Memorial Research Award for his collaborative foundational work on equine motor neuron disease. He has authored several textbooks, book chapters and over 190 peer-reviewed scientific publications. He says the best part of working at Cornell was without question the people whom he got to work with: “faculty, staff, students, residents and referring veterinarians!”

Respiratory inspiration

Dr. Dorothy Ainsworth, professor emerita of large animal medicine, came to Cornell in 1991, drawn by its reputation, students and residents, and the chance to collaborate with world-class veterinarians. She was eager to apply her expertise in equine respiratory disease and exercise physiology, and began doing clinical research on equine heaves, roaring, asthma, foalhood pneumonia and eventually the connection between environmental contaminants and dysphagia in foals. Her research has been funded by Zweig Memorial Fund, the USDA and the NIH.

Among her foundational discoveries in equine health were her 1990s Zweig-funded studies which evaluated the normal physiology of the diaphragm — its linkage to stride frequency (entrainment) during high-intensity exercise and the effect of upper airway obstruction on this synchronization. This work made it possible to evaluate



Dr. Thomas Divers, the Rudolph J. and Katharine Steffen Professor Emeritus of Veterinary Medicine. Photo: Cornell Vet

diaphragm function in the horse for the first time and to study under what circumstances the diaphragm fatigues. Her electromyography techniques were later adapted by Dr. Norm Ducharme for evaluation of upper airway muscle activities.

Another line of Ainsworth's Zweig-funded research uncovered the genomic origins of recurrent laryngeal neuropathy, or roaring — a common and economically important cause of exercise intolerance in horses — revealing that growth traits connected to height also dispose horses to the condition.

One of her more recent NIH-funded studies focused on the correlation between dysphagia in newborn foals and ground water chemical contaminants associated with natural gas fracking. Implementation of a well water filtration system reduced chemical concentrations and the dysphagia.

In addition to having received a Norden Teaching Award, she was also awarded the SUNY Chancellor's Award for Excellence in Faculty Service.



*Dr. Dorothy Ainsworth, professor emerita of large animal medicine.
Photo: Jonathan King/Cornell Vet*

For Ainsworth, the best aspect of working at Cornell has been the diversity of cases she saw. "Nothing was ever boring — it was always fun," she says. "I did internal medicine because I like puzzles, and every case was a puzzle to solve."

Airway pioneer

James Law Professor Emeritus of Surgery Dr. Norm Ducharme is a world-renowned expert in the upper airways of the horse, with years of practice that have refined his surgical techniques, such as the standing tie back forward surgery — a procedure he pioneered and perfected. He also established efforts in reinnervating nerve tissue in the equine airway through nerve transplants, as well as the electrical stimulation of the muscles surrounding the larynx.

In addition to contributing to Cornell's expertise in the upper airways of the horse, Ducharme has also been a leader in equine arthritis, sports medicine, animal rescue and general surgical techniques. "I strongly believe that there are solutions to the pressing problems that exist and that we just have to find them and never settle for what's good enough," says Ducharme.

While at Cornell, Ducharme served as medical director at



Dr. Norm Ducharme, the James Law Professor Emeritus of Surgery. Photo: Rachel Philipson/Cornell Vet

CUHA from 1990-2014 and as chief medical officer at Cornell Ruffian Equine Specialists (CRES) since 2017. He acted as president and chair of the board of the American College of Veterinary Surgeons from 2005-2007 and was inducted in the University of Kentucky Hall of Fame for Equine Research in 2016.

His interest and excellence in the world of equine airway management wasn't something he always planned on. "I thought at first, okay, I'll try this for four years and then something else that's more exciting will come along. It just never happened — it has been fun the whole time."

Joint and genes

Dr. Alan Nixon, professor emeritus of large animal surgery, made his name as the director of Cornell's Comparative Orthopaedics Laboratory, where he was able to push the boundaries of knowledge and capabilities in orthopedic surgery, regenerative medicine and orthopedic research. He has also served as the Chief Medical Officer of CRES from 2014-2017 and served as chief of surgery at CUHA from 2002-2006.

His groundbreaking work in these areas has landed him on a 15 most influential veterinarians list and induction into the Equine Research Hall of Fame in 2009.

Nixon has served on the editorial review board for journals such as *Veterinary Surgery*, served as a consultant to the FDA panel on cell and gene therapy, written two textbooks on equine orthopedics and authored roughly 280 papers and book chapters, and served as a member of numerous veterinary organizations.

Among his achievements is the transplantation of cartilage cells and gene therapy to treat acute joint injuries — a cutting-edge treatment that has also benefitted human patients. In a culmination of many years of support from the Zweig Memorial Fund, he was awarded a \$1.8 million grant from the NIH to investigate his innovative techniques in healing damaged joints.

Farewell but not goodbye

Although these luminaries in equine scholarship won't be walking the hallways at Cornell as often as they once did, their legacy lives on through the hundreds of students they taught, residents they guided and research teams they advised. Years of compassionate care for patients, combined with their expertise in the field of equine medicine, established a foundation on which others can build for years to come. •



*Dr. Alan Nixon, professor emeritus of large animal surgery.
Photo: Cornell Vet*

Cornell University College of Veterinary Medicine

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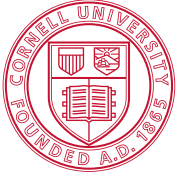
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The Harry M. Zweig Memorial Fund for Equine Research honors the late Dr. Harry M. Zweig, a distinguished veterinarian, and his numerous contributions to the state's equine industry. In 1979, by amendment to the pari-mutuel revenue laws, the New York 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.



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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.

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