

Brought to you by the UK Equine Initiative and Gluck Equine Research Center

UK Farm Provides a Chance for Student Learning

Visitors to Fasig-Tipton Company and the Kentucky Horse Park might have noticed the new stone walls and University of Kentucky insignia along Newtown Pike, but might not know what occurs behind those walls on UK's Maine Chance Equine Campus, the university's research and teaching farm in north Lexington. (Maine Chance is part of the collective North Farm complex that includes Spindletop Farm and provides a location for the equine health research conducted by Gluck Equine Research Center scientists.)

Before and after classes each day, a group of 10 students care for about 116 horses as part of UK's experimental breeding program. The Maine Chance property has been used as a working farm since the late 1800s. The University purchased the property from Elizabeth Arden in 1967 as an expansion opportunity for agriculture research and programs. The farm has been home to Kentucky Derby winners Aristides and Jet Pilot.

Although run as a commercial operation, Maine Chance's breeding program is designed to provide an opportunity for students to learn the day-to-day operations of a large breeding farm.

In addition to maintenance tasks such as mucking and mowing, students have the opportunity to be involved with the horses from birth to the sales ring.

"On commercial farms, interns do a lot of 'grunt work.' They don't get the hands-on experiences they get here," Farm Manager Brittney Gamler said. "They get to help with foaling, taking mares to the breeding shed; they get more out of it if it's more hands-on."



Students agree that working for Maine Chance Farm is a unique situation for hands-on learning experiences.

Students agree that working for Maine Chance is a unique situation for hands-on learning experiences they might not be exposed to in commercial breeding operations.

ARTICLES OF INTEREST

Horses Needed for Equine Metabolic Syndrome Research Project

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Upcoming Events

(STUDENT LEARNING ...)

"You have the opportunity to learn on the job rather than be expected to already know something," said Ashley Meyer, an animal science senior.

"I chose Maine Chance because it's more flexible with my class schedule and lets me do a little bit of everything. I'm not stuck in a yearling or mare barn all the time," said Maggie Hitron, a senior studying animal sciences with an equine focus, about why she enjoys working at the farm.

Both students said sales are their favorite time of the year at the farm. Before yearlings go to auction, each student is assigned a horse to prep and show at the sale, giving them the opportunity to see the end product of their labors. While neither is sure where they will work after graduation, Meyer and Hitron believe the skill sets they have learned here will serve them well in the future.

The individual focus seems to be working out well for the horses, too. The farm made headlines during the Fasig-Tipton February sale when it sold an Offlee Wild filly for \$22,000 despite the depressed sales market.

"I see our mission as research and teaching first. The last part is the horses ... a by-product of that is the Offlee Wild filly," said Bryan Cassill, assistant farm manager of Maine Chance Farm. "There is value in the whole program from foaling to sales prep."

All proceeds from auctioned horses goes toward farm operation expenses.

While Maine Chance has historically been home to Thoroughbreds, the current program also includes Quarter Horses. Its two active



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stallions, both high point champions, are Medal of Valor and Slowly Passing Breeze, who are bred via artificial insemination to Thoroughbred mares to produce appendix horses for private sale. All horses in the program, including the stallions, are donations. Thoroughbreds are bred on donated seasons from local farms.

Cassill said Lexington breeders have become more supportive of the program in recent years, and he is grateful for every donated stallion season.

In addition to the breeding program, Maine Chance Equine Campus is home to many of the equine research studies conducted by Animal and Food Sciences and Gluck Equine Research Center scientists. Horses that are not sold at auction often return for participation in trials examining nutrition, physiology, parasitology and pasture composition. Upcoming projects include studies on amino acid composition in muscle,

bermudagrass pastures, selenium intake, and nutrition of pregnant mares.

Unsold horses are also used for teaching undergraduates in the equine science and management program. Behavior and handling classes are a requirement for graduation, and those classes allow students to teach young horses to walk a course on a lead-line and older horses to lunge under a surcingle. Although there are several student clubs focused on competition riding, they train at private facilities. Riding classes are not offered as part of the science-based degree program.

With the creation of the Equine Initiative in 2005, plans were made to update and construct new facilities on the Maine Chance campus. Since then, a 10,000-square-foot teaching pavilion has been constructed for active demonstrations, and a nearby existing barn has been renovated inside and out to become a foaling barn and teaching facility. In addition, several buildings have been updated or constructed on the Spindletop Farm side of North Farm. There are future plans to build a learning center with classrooms and laboratories, two new research barns, and a livestock exhibition center.

For more information about Maine Chance Farm contact Laurie Lawrence, PhD, a professor in the University of Kentucky's Department of Animal and Food Sciences, at llawrenc@uky.edu. **UK**

Natalie Voss is a UK equine communications intern and undergraduate student in equine science.

HORSE NEEDED FOR EQUINE METABOLIC SYNDROME RESEARCH PROJECT

The Equine Genetics research group at the University of Minnesota College of Veterinary Medicine is collaborating with Ray Geor, PhD, from Michigan State, and Nicholas Frank, PhD, from the University of Tennessee, to investigate the disease occurrence and genetics of equine metabolic syndrome (EMS). Bob Coleman, PhD, PAS, UK Department of Animal and Food Sciences, is also involved in this research project.

EMS is a devastating disease characterized by the three main features of obesity, insulin resistance, and laminitis. Certain breeds or individual horses are predisposed to EMS, and are often referred to as “easy keepers.” These horses are efficient at utilizing calories and often require a lower plane of nutrition to maintain body weight than other horses. The difference in EMS susceptibility among horses managed under similar conditions is likely the result of a genetic predisposition.

The goal of this investigation is to better understand the role of breed, gender, age, environment (diet and exercise) and genetics in EMS. The success of the study depends on the collection of data from as many horses with EMS as possible; therefore, assistance of horse owners and their veterinarians is critical. To identify the underlying genetic susceptibility to EMS, genetic marker

WEED OF THE MONTH

Common name: Nimblewill

Scientific name: *Muhlenbergia schreberi* J. F. Gmel.

Life Cycle: Perennial

Origin: United States

Poisonous: No

Nimblewill is a warm season perennial grass that is widespread across the eastern United States. It is a commonly occurring plant in many types of pastures and turf, but it is found especially in Kentucky bluegrass fields. This stolon-producing (stem tissue that grows along the ground) grass can generate dense stands because the stolons root at the nodes and produce dense, fibrous root systems.

The leaf blades are smooth with few hairs and are a grayish-green color with a loosely spreading growth habit.

Nimblewill emerges in the spring and grows throughout the summer. It thrives under a wide range of climatic conditions, especially during the dry summer months usually encountered in Kentucky. The plant turns brown in winter and is considered unsightly by many horse pasture managers.

One reason nimblewill persists in pastures is because horses, and other animals, rarely eat this plant. Mowing is ineffective as a control tactic. Currently there is not a herbicide available that will control the nimblewill and not cause severe damage to desirable pasture grasses.

Consult your local Cooperative Extension Service personnel for information on nimblewill in your area. [UK](#)

William W. Witt, PhD, a researcher in Plant and Soil Sciences, provided this information.



Nimblewill

(EMS RESEARCH ...)

information will be compared between horses with EMS and non-EMS control horses. The long-term goal is to use these EMS genetic markers to detect horses susceptible to EMS and laminitis before they have clinical signs. Once susceptible horses are identified, management practices can be initiated to better protect them from developing disease.

Horse owners participation in the study involves three steps:

1. The first step is to fill out a brief, 10-question online survey at www.cvm.umn.edu/equine-genetics/EMS/home.html. Within approximately one month the owner will be notified if the horse is deemed an appropriate candidate to proceed to Step 2. While not all horses will be chosen to proceed to Step 2, the information provided will still be used in the initial descriptive study of EMS.
2. If a horse is selected as a potential candidate, its owner will be sent a link to a second online survey requesting additional information about the horse and its management along with information about another horse on the property not suspected of having EMS to serve as a "control." An ideal control horse will be of similar age and breed, have no history of laminitis, not be considered overweight, and not showing signs of Cushing's (delayed shedding, increased drinking/urination). The owner will also be asked to submit several simple body measurements for both horses and digital photos of the

horse suspected of having EMS.

3. Approximately six to eight months following the second survey owners of horses selected for inclusion in the genetic study will be asked to work with their veterinarians to provide a blood sample which the research group will analyze free of charge for glucose, triglyceride, non-esterified fatty acid, and insulin concentration (both the owner and veterinarian will receive notification of the results). A portion of the blood sample will be used for DNA isolation and stored for genetic research.

Horse owners assisting in the project will be providing information essential to further understanding EMS and ultimately determining ways to better manage and treat horses suffering from EMS. To learn more about the equine metabolic research project and how to get involved, please visit: www.cvm.umn.edu/equinegenetics/EMS/home.html. **UK**

Prepared by Nichol Schultz, DVM, and Molly McCue, DVM, MS, PhD, Dipl. ACVIM, and submitted by Bob Coleman, PhD, PAS, UK Department of Animal and Food Sciences.

PORTRAIT UNVEILING OF FORMER GLUCK CENTER DIRECTOR TIMONEY

Mats Troedsson, DVM, PhD, Dipl. ACT, chair of UK's Department of Veterinary Science and director of the Gluck Equine Research Center, and Lexington-based artist Federico Pizzurro unveiled a portrait of Peter Timoney, MVB, PhD, FRCVS, former Gluck Center director and department chair, on March 10 during a portrait unveiling ceremony.

Timoney joined the faculty in UK's Department of Veterinary Science in 1983. He served as department chair from 1989 to 2008 and director of the Gluck Center from 1989 to 2006. He is currently a professor and holder of the Frederick Van Lennep Chair in Equine Veterinary Science.

The portrait unveiling ceremony was attended by 90 people, including several local veterinarians. Each of the past directors and department chairs' portraits are displayed in the Gluck Center auditorium.

To view Pizzurro's art and for contact information, visit www.federicopizzurro.com. **UK**



Dr. Mats Troedsson and Federico Pizzurro unveiled a portrait of Dr. Peter Timoney.

BLACK STALLION LITERACY FOUNDATION HOSTS PROFESSIONAL DEVELOPMENT WORKSHOP

A Black Stallion Literacy Foundation (BSLF) professional development workshop was held on the University of Kentucky campus March 25.

The Black Stallion Literacy Foundation aims to use the magic of live horses and books by Walter Farley to spark the imagination of first grade students so they will want to learn to read, and to motivate fourth grade students so they will come to learn the enjoyment of reading. The purpose of this particular workshop was to familiarize teachers with the program, introduce them to new ways to increase literacy skills in elementary classrooms, and integrate music and literacy into a classic piece of children's literature.

In the workshop attendees heard from leaders in the equine industry, including Tim Farley, co-founder of the Black Stallion Literacy Foundation, as well as education professionals who discussed how to integrate literacy strategies into the classroom.

"The purpose of the BSLF Teacher Workshops is to familiarize teachers with the BSLF program," said Wendy Lambert, PhD, director of education and technology at BSLF. "Information about the history and scope of the program is provided, and teachers get hands-on experience with various teaching strategies that they can utilize

Kentucky International Equine Summit to Address Horse Industry Challenges

The 2010 Kentucky International Equine Summit, a biennial event on April 26 and 27, will feature 74 speakers and panelists dealing with a broad range of challenges facing all segments of the horse industry. The event will be held in Lexington, Ky., and is sponsored by the University of Louisville College of Business and the University of Kentucky College of Agriculture.

"The aim of the Summit is to bring experts from industry and academia together to discuss the most critical non-political issues facing the horse industry in hopes that leaders of the industry the officers, directors, and committee members of national and state horse organizations can use the dialogue to meet those challenges," said Rich Wilcke, Summit chair and director of the University of Louisville's Equine Industry Program.

The Summit, which will be held at the Downtown Hilton, is organized as a six-day conference that

takes place over only two days by having three sessions occurring simultaneously, with attendees free to move as they choose among the tracts. The tracts for 2010 are: New Ideas in Equine Media and Technology; Equine Industrial Structures and Strategies; Increasing Globalization of Equine Activities; Equine Association Leadership/Management; Postsecondary Equine Education Programs; and Equine Regulatory and Jurisdictional Issues.

Only the luncheons on both days are plenary sessions. John Long, Chairman of the 2010 Alltech FEI World Equestrian Games and CEO of the United States Equestrian Federation will be the luncheon speaker on Monday, April 26. Nick Nicholson, president of the Keeneland Association, will speak at the luncheon on Tuesday, April 27.

For more information, including session details, and special registration rates, visit www.ky-equinesummit.com. 

Amy Lawyer, Equine Industry Program, College of Business, University of Louisville.



with their own students as they teach Walter Farley's *The Black Stallion*. The BSLF curriculum is aligned with state and national standards and, thus, assists teachers in preparing their students for standardized tests, in addition to providing a meaningful and memorable learning experience for the children."

The Black Stallion Literacy Program was presented in partnership with The Kentucky Horse Park, The Kentucky Horse Park Foundation, UK

School of Music, International Museum of the Horse, Kentucky Children's Hospital, Kentucky Bank, PepsiCo Inc., Columbia Gas of Kentucky, and ABC 36 WTVQ-TV. For additional information on this program e-mail molliejam@gmail.com. **UK**

Alexandra Harper is a UK equine communications intern and undergraduate student in communications.

Bonnie to Speak at Distinguished Lecture Series

Nina Bonnie, accomplished equestrienne, Kentucky Horse Park Foundation creator, and a driving force behind the park, will speak at the University of Kentucky Equine Initiative Distinguished Industry Lecture Series. The event will take place April 1 in the Maxwell H. Gluck Equine Research Center auditorium on the UK campus beginning at 6:30 p.m. EDT. The lecture series is free to students and the general public.

"The Distinguished Industry Lecture Series is a signature program of the UK Equine Initiative. It is designed to showcase distinguished industry practitioners from the broad equine industry," said Nancy Cox, MS, PhD, associate dean for research of UK's College of Agriculture, Kentucky Agricultural Experiment Station director and administrative leader for the Equine Initiative. "While students, from UK and our higher education partners, are a primary audience, the program is also valuable for a variety of our stakeholders. We are very pleased to showcase the outstanding contributions of Nina Bonnie with this second lecture in the series."

UK's inaugural lecture featured Keeneland President Nick Nicholson in November 2009.

This second lecture series is sponsored by Equine Medical Associates, PSC. Cox credited Dan Rosenberg, Equine Initiative executive-in-residence, as instrumental in planning the event and providing guidance.

For more information about the event visit www.ca.uky.edu/equine or e-mail equineinitiative@uky.edu. **UK**

Holly Wiemers, MS, is communications director for UK's Equine Initiative.

EQUINE PHARMACOLOGY, THERAPEUTICS, AND TOXICOLOGY

The equine pharmacology, therapeutics, and toxicology program at the Gluck Equine Research Center focuses on interactions among performance-enhancing drugs and therapeutic medications in performance horses. Early work focused on the detection of performance-enhancing drugs, and in 1983, U.S. Patent #4,473,640 for morphine detection was awarded.

Soon thereafter, work commenced on the development of highly sensitive enzyme linked immunosorbent assay (ELISA) tests for medications not approved for use in horses. An ELISA test is equivalent to a home pregnancy test; it is highly sensitive, needs only one drop of urine, and can be completed within an hour. These highly sensitive tests revolutionized drug testing in the late 1980s, and this work is ongoing. This technology was licensed to Lexington-based Neogen Corp. In cooperation with Neogen, approximately 100 highly sensitive ELISA tests capable of detecting about 300 drugs and therapeutic medications used in performance horses are now available to equine drug testing laboratories worldwide.

Because of the great increase in testing sensitivity associated with the introduction of ELISA tests, it became necessary to specifically identify the close to 50 therapeutic medications used routinely by veterinarians to protect the health

and well-being of horses. These medications have been identified and research is underway to ensure they are appropriately regulated in performance horses. As such, there is now a need for defined regulatory thresholds in plasma or urine for these 50 therapeutic medications so the high sensitivity of modern analytical methodology does not interfere with the proper veterinary care of performance horses.

Work from the program first established “proof of principle” of the concept of defined regulatory thresholds for therapeutic medications in equine plasma or urine. The program now focuses on providing the required certified reference standards and stable isotope internal standards necessary for accurate quantification of medications in the regulatory context. A problem in this area is that many of the required standards are standards of unique equine drug metabolites or metabolite fragments.

Additionally, because of the accreditation requirements of forensic laboratories, these reference standards must be prepared for distribution in a facility accredited to International Organization for Standards (ISO) standards and provided with a full ISO/IEC-17025 compliant certificate of analysis. Work on creating and certifying these standards is currently underway in cooperation with two Central Kentucky companies, Frontier Biopharm and the Neogen Corp.

In the area of therapeutics, in the mid-1990s the program identified the unique clinical efficacy of diclazuril and related substances in the

prevention and treatment of equine protozoal myeloencephalitis (EPM). This research gave rise to U.S. Patent #5,583,095, which led to the first FDA-approved treatment for equine protozoal myeloencephalitis, Marquis, now marketed by the Bayer Corporation under this patent. Ongoing research is exploring further applications of this therapeutic initiative.

More recently in 1996, the program was awarded U.S. Patent #7,074,843 for novel short-acting equine/veterinary tranquilizer. Other approaches to equine pharmacology and therapeutics in general are in progress. **UK**

Thomas Tobin, MVB, MSc, PhD, MRCVS, Dipl. ABT, is a Professor in the Departments of Veterinary Science in the Gluck Equine Research Center and in the Graduate Center for Toxicology.

UPCOMING EVENTS

April 1, 6 p.m., Second Equine Distinguished Lecture Series with Nina Bonnie, Gluck Equine Research Center Auditorium.

April 22-25, Rolex Kentucky Three Day Event, Kentucky Horse Park.

April 26-27, Kentucky International Equine Summit, Lexington downtown Hilton. See www.kyequinesummit.com for more information.

April 29, 4 p.m., Department of Veterinary Science Equine Diagnostic Research Seminar Series at the Kentucky Horse Park. Cornell University's Don Schlafer, BS, DVM, MS, PhD, and Professor of Comparative Obstetrical and Gynecological Pathology, will speak about reproduction.

UK Equine Initiative and/or Gluck Center faculty and/or staff are participating in all of these events.



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