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## UK Gluck Equine Research Center: 30 Years of Improving Horse Health and Well-Being

The University of Kentucky (UK) College of Agriculture, Food and Environment recently celebrated the Maxwell H. Gluck Equine Research Center's 30th anniversary.

More than 250 equine industry representatives attended the celebration dinner in the Woodford Reserve Room at Kroger Field, in Lexington. Stuart Brown, DVM, Gluck Equine Research Foundation chair and a Hagyard Equine Medical Institute veterinarian, hosted the program honoring Peter Timoney, MVB, PhD, FRCVS, Frederick Van Lennep Chair in Equine Veterinary Science at the Gluck Center, for his lifelong contributions to equine infectious disease research.

"This evening was an exciting

opportunity to celebrate the 30th anniversary of this unique program," Brown said. "Coupled with the recognition of the distinguished career of my colleague, Dr. Peter Timoney, through a gift by Mr. Ted Bassett, this was truly a night not to be missed by anyone in our industry that has played a part in the successful legacy of this institution."

Additionally, more than 100 people attended the 30th anniversary research seminar, luncheon, and open house at the Gluck Center. The seminar featured the inaugural Teri Lear Memorial



Dr. Stuart Brown (right) hosted the event.

Lecture, given by Lear's frequent research collaborator and friend Terje Raudsepp, PhD, associate professor from Texas A&M University's College of Veterinary Medicine and Biomedical Sciences, in College Station. Lear was an equine genetics researcher and associate professor at the Gluck Center.

"I was proud to be on hand as we celebrated generations of researchers dedicated to the horse and particularly gratified that our audience was made up of families from our equine industry representing several generations of support to the Gluck Center," said Dean Nancy Cox, MS, PhD. "The support and focus from this event positions us well to further enhance our service to and partnership with the equine industry."

The center opened on June 5, 1987, with a promise to fulfill Thoroughbred breeder and entrepreneur Maxwell Gluck's legacy of furthering the UK Department of Veterinary Sciences'



Attendees toasted the 30th anniversary of the Gluck Center at the end of the evening.

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## Celebrating 30 Years



research and distinguished service to the equine industry.

The mission of the Gluck Center, a UK Ag Equine program in the College of Agriculture, Food and Environment, is scientific discovery, education, and dissemination of knowledge for the benefit of the health and well-being of horses. The Gluck Center faculty conducts equine research in seven targeted areas: genetics and genomics, immunology, infectious diseases, musculoskeletal science, parasitology, pharmacology/toxicology, and reproductive health. Their continuing efforts build upon a tradition of excellence in equine research dating back to 1915.

For more information on the Gluck Center, visit [gluck.ca.uky.edu](http://gluck.ca.uky.edu). **UK**

>Jenny Evans, MFA, is the senior veterinary science marketing and promotion specialist at the UK Gluck Equine Research Center.



Above Left: Mr. Ted Bassett and Dr. Peter Timoney  
Above: Dr. David Horohov, Provost Tim Tracy, and Dr. Peter Timoney  
Below: UK Men's Basketball Coach John Calipari stopped by the event to thank the equine industry for the work it does.



## Sports Concussions: What About the Jockeys?

The fifth race is about to begin on a sunny day at Keeneland Race Course, in Lexington, Kentucky, and the jockeys are waiting in the gate on their mounts. The bell rings and the horses spring forward, looking for the perfect spot from which to make their charge. At the second turn, the No. 8 horse stumbles and recovers, but its jockey tumbles to the dirt. He sits for a few seconds, dazed, but then leaps to his feet and scrambles to safety.

Barely topping the 100-pound mark, jockeys seem undermatched when paired with 1,000-pound Thoroughbreds. In fact, during a recent interview, one jockey listed a jaw-dropping succession of injuries: two broken collarbones, a fractured wrist, broken ribs, a fractured spine, and several occasions when he “got his bell rung.” These athletes get back to their job as quickly as possible—and potentially before they’re 100 percent. That’s because, unlike in some other professional sports that offer guaranteed contracts to their players, horse racing operates on a “pay-to-play” model: Jockeys don’t get paid unless they’re riding.

While broken bones are near impossible to miss, concussions are subtle but potentially more dangerous injuries. Concussions—brain injuries caused by whiplash or other blow to the head—are notoriously difficult to diagnose, and symptoms are

## Masthead

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## Jockey Concussions

transient but can last several days or even weeks.

Repeated concussions have a cumulative effect. A recent study in the *Journal of the American Medical Association* determined that 110 of 111 autopsied brains donated to science by former National Football League (NFL) players showed evidence of chronic traumatic encephalopathy, or CTE, a degenerative brain disease caused by repeated blows to the head and believed to be responsible for later cognitive impairment, depression, and/or aggression. Extreme examples are San Diego Chargers linebacker Junior Seau, who shot himself in 2012, and former New England Patriots star tight end Aaron Hernandez, who committed suicide in jail this spring while serving a sentence for double homicide. At this time there is no data to document CTE incidence among jockeys, though anecdotal evidence exists; for example, the effects of Gwen Jocson's repeated concussions forced her retirement from racing in 1999.

During the healing process after a concussion, victims can experience headaches, memory loss, balance issues, sleep disturbances, and/or disorientation. That, says UK College of Health Sciences researcher Carl Mattacola, PhD, ATC, is a dangerous state to be in if you're trying to pilot a 1,000-pound horse around a track at 30 miles per hour. That's why he's developed a clinical and research interest in helping jockeys.

Historically, Mattacola says, attention paid to jockeys has been secondary to the equine athlete. But as the awareness of concussions' dangers has risen, all corners of the racing industry—the tracks, the horse owners, and the jockeys themselves—have come together to assess the situation and lay the groundwork for a new model. That process has its origins in Kentucky, born of a partnership between the Jockeys' Guild, The Jockey Club, and the UK College of Health Sciences, among others. This is the second year of a pilot project to gather baseline cognitive data on every jockey racing in Kentucky. Mattacola spearheads the project and, starting with Keeneland's 2017 Fall Meet, baseline cognitive and neuromuscular testing was mandatory for every jockey.

Mattacola says most professional



Historically, attention paid to jockeys has been secondary to the equine athlete. But as the awareness of concussions' dangers has risen, the racing industry has come together to improve jockey health and safety.

sports leagues—such as the NFL and National Hockey League—have concussion protocols that guide decisions about when a player is healthy enough to return to play, but it's difficult to copy their model from whole cloth because each state—and sometimes individual tracks—operates under different sets of rules, so return to ride protocols aren't consistent.

“Our group wants to create change in how we manage and assess concussions in horse racing, so we're beginning local and hope to use that data to develop a protocol that can be transferred to other states,” he says.

Mattacola uses a blood pressure metaphor to illustrate how the data he's collecting would be useful.

“If we know what your blood pressure is this year, and you come back and that changes, we can try to determine the underlying factors or the underlying mechanisms that contributed to that change,” he said. “Similarly, the

baseline assessment provides additional information to the health care provider when a jockey falls, which can help him or her make a decision about whether to suspect a concussion.”

Jockeys' Guild National Manager Terry Meyocks said the Equine Jockey/Rider Injury Prevention Initiative is a logical extension of the Jockey Health Information System (JHIS), a database that stores jockeys' medical histories for access by racetrack medical personnel in the event of a jockey injury. A collaboration by the Jockeys' Guild, The Jockey Club, several Thoroughbred organizations, and physician and Keeneland medical director Barry Schumer, MD, the JHIS immediately demonstrated its merit when a jockey fell on the first day the project was rolled out in 2008.

“Our job is to protect jockeys by making sure that they operate in a safe racing environment,” Meyocks said. “As the issue of concussions has come to the forefront, we've made it a priority to educate our jockeys and find ways to protect them, which is in everybody's best interest.”

At the Jockey's Quarters on Keeneland's opening day, the clerk of scales sends a jockey to Carolina Quintana, a certified athletic trainer and a doctoral student from UK College of Health Sciences. She administers the sport concussion assessment tool (better

Click to view a video about the study featuring Dr. Carl Mattacola.



## Jockey Concussions

known as SCAT-5), composed of a series of questions gathering a detailed injury history and data related to cognitive

and neuromuscular performance. Then the jockey completes several simple tasks, such as counting backward by threes and standing on one foot for balance testing.

The jockey acts a bit sheepish as his

friends look on in amusement, but this testing, which will be entered into his JHIS record, will be invaluable should he suffer a head injury.

There was not instant buy-in among jockeys, who were concerned that the project might affect their livelihood. But Mattacola and Quintana quickly won them over in a series of meetings as the pilot project took shape.

“We—especially Carolina—have established a strong rapport with the jockeys, and they now recognize that we are not here for any other reason than to help them,” Mattacola said. “If they were to be injured, we would have the data to make a healthy decision on their behalf.”

This is not Mattacola’s first foray into the jockey’s world. In 2015 he conducted a series of tests to determine how well several equine helmet models protected wearers from repeated impacts, which helped inform guidelines for replacing helmets after a fall and prompted the Jockeys’ Guild to reinforce that all riders wear ASTM-approved helmets. His work on helmet safety lent him credibility with the jockeys as he nudged the concussion pilot study to fruition.

“It’s impossible to eliminate all concussions in sports, but we’re obligated to do what we can to prevent it, to recognize it when it occurs, and to keep the jockey’s long-term health and safety first in mind,” he said. The fact that he is also a horseman didn’t hurt his standing with the jockeys either.

As Mattacola watches the next race, it’s easy to see that he’s reacting more to the jockeys than the horses.

“Now that I know these guys so well, I watch where they are in position, their style, their riding behaviors, and try to figure out how we can help them with technique and performance,” he said.

His next chapter could be applying the resources of the UK Sports Medicine Research Institute (SMRI) to provide jockeys with more tools to improve performance and prevent injury.

The SMRI was conceived to research injury prevention and performance optimization for the U.S. military, but that data can easily be applied to other physically intensive activities, including horse racing. Within the institute is a biomechanical analysis lab that uses video game development technology and a first-in-class custom racing simulator with a fully interactive race

## GRAD STUDENT SPOTLIGHT

### FERNANDA CESAR

From: Brasilia, Brazil

Degree and institutions where received:  
**DVM, University of Brasilia**  
**MS and residency, Auburn University**  
**College of Veterinary Medicine, MS**

Diplomate, American College of Veterinary  
**Internal Medicine**



Fernanda Cesar, DVM, MS, Dipl. ACVIM, chose to come to the Gluck Equine Research Center because of its tradition of excellence in equine research. She is currently studying equine neonatal immunology, with a focus on *Rhodococcus equi* and young foals’ immune responses to this bacteria under the supervision of David Horohov, PhD, chair of the UK Department of Veterinary Science, director of the Gluck Center, and Jes. E. and Clementine M. Schlaikjer Endowed Chair at the Gluck Center.



UNIVERSITY OF KENTUCKY PHOTOS

*R. equi* is considered one of the most important pathogens of young foals worldwide as it can cause life-threatening bronchopneumonia. At endemically affected farms disease morbidity rates can be close to 100% and mortality rates can reach 40% for *R. equi* pneumonia.

Despite many efforts, currently there is no protective vaccine against *R. equi* commercially available. So, disease prevention is extremely important. Cesar’s *in vivo* (in the live horse) and *in vitro* (in the laboratory) research has focused on examining components of foals’ innate and adaptive immune responses after they are either challenged with *R. equi* or exposed to the bacteria naturally. The main question she hopes to address is whether there are any differences in immune responses between foals that are able to spontaneously recover from rhodococcal lung infection without ever showing clinical signs and those in which the lung infection progresses to clinical pneumonia, requiring medical intervention.

“If we can answer this question, this information has the potential to be applied as an early diagnostic test with immediate clinical impact,” Cesar said.

“Over the past three years, we have performed two challenge studies and have collaborated with some of the local equine veterinary clinicians in order to gather a representative number of samples,” she continued. “I hope to have exciting results to share after we finish processing all the samples in the lab and analyzing all the data.”

When asked what her most valuable takeaway from the program is, Cesar said, “All the laboratory work has been pretty much new to me since my background is mostly clinical.

“I have always read about techniques such as ELISAs, flow cytometry, and PCR, but had never actually performed and troubleshoot them before,” she explained. “Also, the *in vitro* cell stimulation and immunostaining have been a great deal of my learning experience. I am positive that a better understanding of these techniques will make me a better clinician when it comes to interpreting results that rely on them.”

Cesar will graduate in spring 2018. **UK**

>Alexandra Harper, MBA, is the operations and communications coordinator for the UK Ag Equine Programs.

## Jockey Concussions

experience. A neurobehavioral laboratory aids in concussion prevention and recovery. Other labs focus on performance and metabolism, musculoskeletal assessments, and other performance metrics. These combine to support all athletic types and levels.

Mattacola's journey into the jockey's world has brought a tangible appreciation for the way these men and women—by necessity small and lightweight—manage animals 10 times their size.

"They are a pretty amazing group of athletes, so the personal side of helping them is there, as well," he said. "This is truly gratifying work." **UK**

>Laura Wright and Allison Perry, marketing/news bureau staff from the Public Relations and Marketing Department for the UK Medical Campus, provided this information.

## Evaluating Horse Pastures in Fall: Green is Good, Brown is Bad



If your cool-season grass pastures are green during the fall, chances are they're healthy and productive.

Changes in foliage color tell us that fall is here and winter's on its way. Some of these changes are beautiful, such as the maple leaves turning vibrant red and orange. Others aren't so breathtaking—the pine needles turning brown and piling up under the tree, for instance.

But for cool-season grasses, color changes can tell us much more—about the pasture's makeup and health, for example—and provide a brief snapshot of the pasture's composition. In short, if your cool-season grass pastures are green now, that's good. If they're brown, that's bad.

Cool-season grass species dominate pastures in the transition zone and northern tier of the United States (which extends north from Tennessee). These species include Kentucky bluegrass, orchardgrass, tall fescue, ryegrass, and smooth bromegrass. Cool-season grasses thrive best in the spring and fall, when daytime temperatures are between 60-75°F. During

## UKVDL Disease Mapping Initiative Featured Map

### Leptospiral Abortions

Leptospirosis is an acute and sometimes chronic zoonotic (transmitted between animals and humans) bacterial infection in horses caused by the pathogen *Leptospira interrogans*. This pathogen is commonly found in wildlife, including rats and mice, and can survive in surface water, ponds, streams, or moist soil for long periods during mild temperatures.

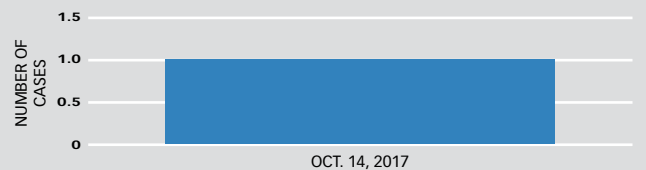
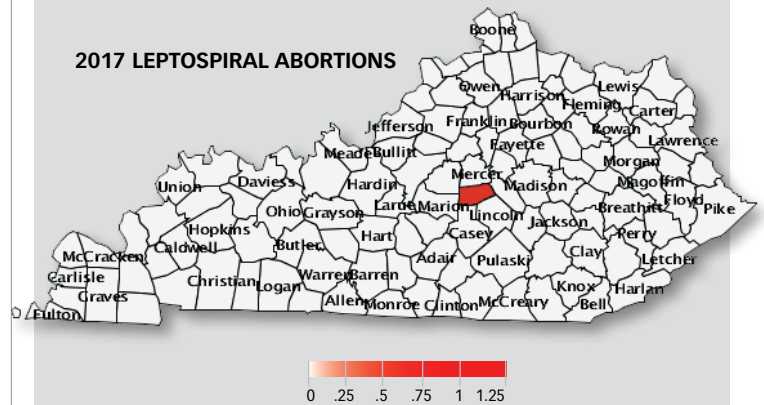
Horses can contract leptospiral bacteria through mucous membranes of the eyes or mouth; broken skin by contact with infected urine, blood, or tissues; eating hay or grain that has been contaminated by infected urine; or drinking from contaminated standing water.

Leptospirosis bacteria can be present in apparently healthy horses. However, it can also lead to abortions in pregnant mares and has been linked to eye problems, such as equine recurrent uveitis (also known as moon blindness).

Individuals with questions or concerns about disease outbreaks can contact the University of Kentucky Veterinary Diagnostic Laboratory (UKVDL) at 859/257-8283. **UK**

>Jacqueline Smith, PhD, MSc, BSc, Dipl. AVES, UKVDL epidemiologist and adjunct professor of epidemiology at Lincoln Memorial University, is the founder of the UKVDL Disease Mapping Initiative, a database designed to record all infectious disease cases submitted to the UKVDL.

#### 2017 LEPTOSPIRAL ABORTIONS



See each month's featured map at [vdl.uky.edu/FeaturedMap](http://vdl.uky.edu/FeaturedMap)

the spring, plants are emerging from dormancy and growing rapidly. In fall, these plants are busy preparing for winter by storing energy in their roots and producing new tillers. Fall nitrogen applications help this process along, further boosting root development, enabling plants to better survive winter

## Fall Pasture Evaluations

and green up earlier in spring. It isn't too late to apply fall nitrogen in most areas. For more information about fall nitrogen applications, see *Soil Sampling and Nutrient Management* at [forages.ca.uky.edu](http://forages.ca.uky.edu).

In contrast to cool-season grasses, warm-season grasses should now be on their way out. These forages, such as crabgrass, foxtail, nimblewill (which isn't grazed by horses and is considered undesirable), and bermudagrass, grow best when temperatures are over 80°F. Except in the Deep South where warm-season grasses dominate, cooler temperatures cause these grasses to begin dying (or going dormant in the case of nimblewill and bermudagrass). Some warm-season grasses, such as foxtail and nimblewill, generally aren't good-quality forages or aren't palatable and, therefore, are not ideal in pastures. Species such as crabgrass can be high-yielding and nutritious, but still might not be ideal in northern regions because of their short growing season. Bermudagrass is a perennial that will survive winter, if located far enough south; it rarely thrives north of the Ohio River unless managed carefully and exclusively.

For horse owners or managers with cool-season grass pastures, fall (especially after a frost) is an excellent time to quickly evaluate pasture health and productivity. If green grasses dominate the pasture, it's likely that your cool-season grasses are growing with ideal temperatures and rainfall and good soil fertility. Brown pastures, on the other hand, are probably dominated by warm-season grasses, or your cool-season grasses are being starved of soil fertility and acceptable growing conditions. While managers can't make up for warm temperatures or poor rainfall, they can take steps to determine if pastures are deficient in soil nutrients or overrun by warm-season grasses. Your local county extension agent or farm consultant can assist in identifying cool- and warm-season grasses, as well as collecting soil samples.

### Measuring Green Cover: There's an App for That

Most horsemen should be able to look at a pasture and gauge the overall health by color. But for those who want



Figure 1A

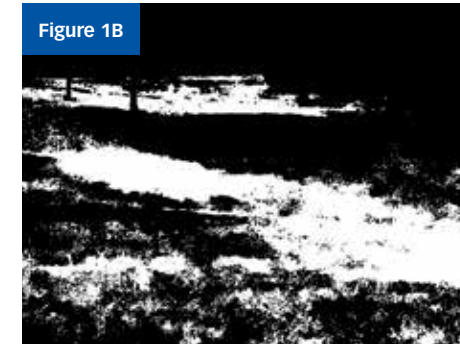


Figure 1B



Figure 2A

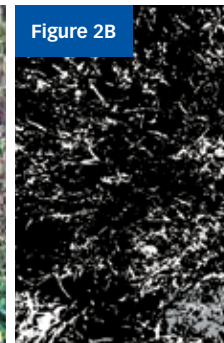


Figure 2B



Figure 3A



Figure 3B

a more objective measurement, there's an app for that. Oklahoma State University developed Canapeo, a multipurpose green canopy cover measurement tool that allows users to photograph a pasture and analyze the photo for green and brown pixels. Green pixels show as white and are healthy, living,

productive material (but remember that green weeds will also be included). Brown pixels are shown as black and represent bare soil, dead or dying material, or dormant plants.

Ideally, the app developers say, pastures should be more than 60% green when being grazed. Pastures with less than 60% should be monitored closely, and those with less than 40% green should not be grazed. While this app cannot replace a visual inspection by horse farm managers, it does provide a more objective measure of pasture health. Canapeo is available for free in both the iTunes and Google Play stores.

In this Central Kentucky pasture (Figure 1A), horses grazed the cool-season grasses on the top and upper slope all summer while allowing warm-season grasses to grow. However, they were reluctant to graze in the valley below. This, along with good soil moisture from a leaking water tank, means the valley area is still covered in cool-season grasses and makes for a dramatic difference for fall grazing availability.

While designed for close-up pasture photos, Canapeo detected green in 29% of this picture, with green areas (the valley) in white and brown areas (the hill top) in black (Figure 1B). A close-up of the hill top area (Figure 2A) shows it is heavily dominated by crabgrass, which takes on a dull green/brown color in Kentucky in mid-October. Canapeo detected only 8% green in this photo (Figure 2B). In the same pasture, the valley area is still dominated by cool-season grasses (Figure 3A); lush orchardgrass, tall fescue, and white clover growth is abundant, with green tissues detected in 98% of the photo (Figure 3B).

### What to do When Fall Pastures are Struggling

Cool-season pastures overrun with warm-season grasses likely were heavily grazed over the spring and summer. Apply fall nitrogen on these pastures to stimulate the remaining cool-season plants. Other soil fertility requirements, such as phosphorus, potassium, and lime, can be determined by a soil test, but these products can be applied anytime the weather allows. Apply fertilizer when leaves are dry to the touch, but not during periods of drought. Spring (or ideally next fall) seeding might be needed to boost pasture production.

PHOTOS COURTESY KRISTA LEA

## Fall Pasture Evaluations

### Take-Home Message

Late fall, after a frost, is an ideal time to visually evaluate your cool-season pastures' health and productivity. With cool-season grasses and legumes active and warm-season grasses dying or going dormant, color is a simple way to observe your pasture's overall composition.

Remember the phrase originally coined by A.J. Powell Jr., PhD, a former UK turf specialist: "Green is good; brown is bad." **UK**

>Krista Lea, MS, UK Horse Pasture Evaluation Program coordinator, and Tom Keene, MS, hay extension specialist, both within UK's department of plant and soil sciences, provided this information.

## Riding Through Life—With Greater Comfort

*Karin Pekarchik, the senior extension associate for distance learning within UK Department of Biosystems and Agricultural Engineering, recently conducted a study on bra use and health outcomes in female equestrians. Here, she shares what she learned.*

Equestrianism, a significant part of the horse industry, is important to the existing social fabric and continued economic success of Central Kentucky, yet little research exists on equestrian health and wellness. Most research is conducted on the horse, and when it

focuses on the rider, it is usually something major—concussions, fractures, falls, or death. But what about day-to-day issues that impact riding, such as aching backs, a lack of time to ride, and, for female riders, poorly fitting bras and breast pain? A deeper understanding and improved awareness of female equestrian health and wellness issues, motivations, and perceptions are important because they legitimize the mental, physical, and social challenges equestrians face.

To address this gap, I conducted a research survey as part of my master's thesis in UK's Department of Community and Leadership Development in the spring of 2017 to gauge female equestrians' attitudes toward health and wellness, with a focus on breast pain and discomfort.

The survey, "Riding through Life: A

Lifespan Study of the Attitudes, Behaviors, and Areas of Educational Opportunity for Female Equestrians Toward Bra Use and Health Outcomes When Engaged In Equestrian Sports," was distributed through seven news outlets that were approved by the UK Institutional Review Board. It consisted of seven sections: equestrian demographics; equestrian health and exercise; riding and physical activity; bras and bra fit; equestrian breast discomfort/pain; breast history; and health information and knowledge. Data analysis for manuscripts and publication in peer-reviewed journals is ongoing.

Overall, more than 1,000 biological females over the age of 18 completed the online survey. Of the participants, more than 70% resided in the United States. The five states with the highest number of participants were, California, Florida, Kentucky, Minnesota, and Pennsylvania. More than 70% of the respondents reported being between 18 and 50 years old.

Generally, the survey showed that women experienced pain (at different levels) both while riding and from riding. While not all women experienced pain, significant numbers did, with particular identification of back pain. Another common theme when women were asked about negative health consequences as a result of their riding was breast discomfort/pain. Women did not always indicate breast discomfort/pain when asked directly, but reported breast discomfort/pain in subsequent questions that used different phrasing.

Women also freely offered their perceptions and complaints about bra fit and offered suggestions as to how bra design could be improved to specifically accommodate the riders' needs. These findings suggest that women might not directly identify that there are health-related impacts of riding that require further attention.

To more fully explore health and wellness of equestrians, exercise riders, and jockeys, Kimberly I. Tumlin, PhD, of UK College of Public Health, and I have started the Equestrian Wellness Initiative (EWI), a branch of UK's existing female health registry, Women's Health and You (WHY). The mission of WHY is to improve women's health through research, and it provides women the opportunity to help reduce the gap for women in medical research



Study results suggest that women might not directly identify that there are health-related impacts of riding that require further attention.



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## Bra Use and Breast Health Study

by responding to surveys about their health. Participants also receive information on health issues and research opportunities of interest to them. Since 2006, more than 17,000 women across Kentucky have joined.

The mission of the interdisciplinary EWI is to improve wellness of the equestrian community, including riders and nonriders and professionals and recreational participants alike. We hope to draw together resources that are specific

to the equestrian community and aid in health and wellness of this unique group that shares a common bond: the horse. Initially, EWI will focus on increasing the understanding of motivations and perceptions of why riding is a professional and recreational choice and focus on factors that encourage, limit, or prevent engagement in the industry, regardless of discipline.

The overall program goal is to inform and guide interventions, education, and policy to promote wellness and population health outcomes in the performance-based occupations of the equine sector in the agricultural industry. **UK**

## John Timoney Recognized for Equine Streptococcal Disease Research Contributions

John F. Timoney, MVB, DSc, PhD, professor emeritus at the UK Gluck Equine Research Center, was recognized for his lifelong contributions to equine streptococcal disease research at a Havemeyer Foundation Workshop, held Sept. 19-21 in Gallatin Gateway, Montana.

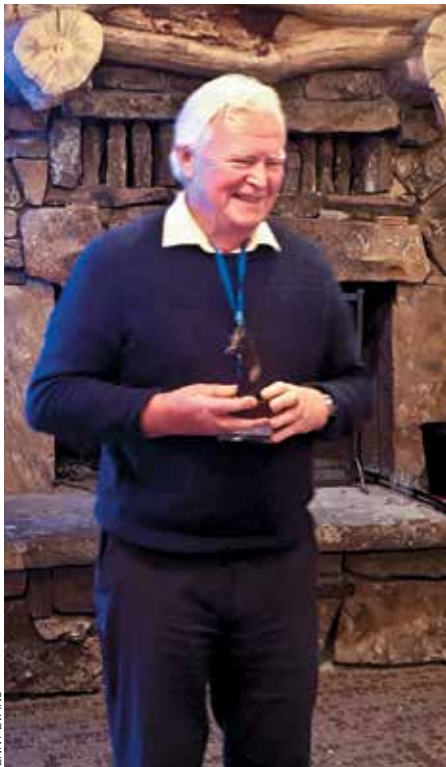
Workshop host Robert Keene, DVM, of Boehringer Ingelheim Animal Health, presented Timoney with a

bronze statue.

The UK Gluck Center also sponsored the workshop on "Getting to Grips with Strangles and other Streptococcal Diseases." More than 40 researchers and scientists representing eight countries attended the workshop.

Timoney retired from the UK Department of Veterinary Science in 2016 after 34 years. **UK**

>Jenny Evans, MFA, is the senior veterinary science marketing and promotion specialist at the UK Gluck Equine Research Center.



JENNY EVANS

Dr. John Timoney was honored at a Havemeyer Foundation Workshop last month in Montana.

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## UKVDL Goes Mobile to Educate Kentuckians

Students filed into the West Jessamine Middle School library, whispering to one another about what was hiding under tablecloths. Uneeda Bryant, DVM, a veterinary pathologist from the UKVDL, was about to present an interactive learning experience to teach students about the lab's role in safeguarding animal health in Kentucky and about career options in veterinary medicine.

"Many people don't realize the work we do at the UKVDL actually saves the lives of other animals," Bryant said. "A big part of what we do in the pathology section of the lab is determining why animals die. If an owner knows that his cow died of pneumonia, for example, they can go back to the farm and check their other animals and use the antimicrobial susceptibility report provided to them to guide them to the appropriate treatment regimen to use to prevent the disease from spreading."

Bryant started each class with a video of a lab submission. Students watched as necropsy technician Sara Welsh performed an equine necropsy to determine the cause of the horse's death. A few students looked away, but most watched in amazement as things they had learned about animal anatomy came to life on the screen. It spurred questions about animal disease, treatments, and even jobs associated with pathology.

West Jessamine Middle School agricultural exploration teacher Anna Campbell said her intent when inviting Bryant was to spur discussion about things they were learning in class and for students to discover ways to create a sustainable future as they grow up and choose vocations.

"I try to give my students a lot of meaningful experiences and to show them that agriculture affects everyone's life," she said. "I think having visitors like Dr. Bryant helps them see there are a lot of career opportunities out there related to agriculture that aren't on a farm."

After the video, Bryant and Campbell removed the tablecloths to reveal samples of some of the lab's past findings. Students put on gloves and began

to touch and explore preserved animal parts and learn about eye abnormalities, tumors, parasites, gallstones, kidney stones, and even cow hairballs. The students reacted with oohs and ahhs and asked lots of questions that Bryant was happy to answer.

Sixth-grader Presley Howard believes she would like to be a large-animal veterinarian one day.

"I've always had a fascination with horses and cows," she said. "I just think it would be super cool to take care of a lot of animals. Every summer, I go spend time at my Papaw's farm. I have been able to get over the fact that animals die; that's just how life is, but what I want is to be able to help more animals than we have to put down."

Campbell likes to see the lightbulbs going off in her students' minds as they realize just how important agriculture is to them, their families, and their communities.

"I have been trying to talk to them about how our population is booming and how we have to find creative ways to produce enough food to feed everyone," she said. "Very few kids in my classes have lived on a farm. Very few of them have even visited a farm. We have to help them make a connection to agriculture in some way."

Bryant takes her show on the road all over Kentucky each year. She sees it as an outreach opportunity to teach youth about a nontraditional career path in veterinary medicine as well as educating the community about the plethora of services offered at the UKVDL, which is part of the UK College of Agriculture, Food and Environment.

"Some people are more visual and gain a better understanding through hands-on learning," she said. "So, we bring the lab to them, and it opens a door to talk about what we do." **UK**

>Aimee Nielson is an agricultural communications specialist in the UK College of Agriculture, Food and Environment.

**"Most people don't realize the work we do at the UKVDL actually saves the lives of other animals."**

DR. UNEEDA BRYANT

## UK Department of Veterinary Science Reaches 100th Seminar Series Milestone

On Sept. 28, the UK Department of Veterinary Science held its 100th Equine Diagnostic and Research Seminar Series with 126 people in standing-room-only attendance at the UKVDL.

Seven speakers presented lectures during a mini-symposium focused on "Ensuring the Golden Years: Care of Old Horses."

**Amanda Adams, PhD**, associate professor at the UK Gluck Center, kicked off the seminar with a look at immunosenescence and how it affects old horse care. She spoke about vaccinations, anthelmintics (deworming drugs), and nutrition.

Next, **Marian Little, DVM**, of Luitpold Pharmaceuticals, described how to construct a wellness program for the aging performance horse. She spoke about the importance of monitoring age-related changes and the common health issues in senior sport horses.

**Lisa Tadros, DVM, PhD, Dipl. ACVIM**, from Michigan State University, spoke about common endocrine diseases in older horses and how to diagnose them. She touched on laminitis, metabolic syndrome, and pituitary pars intermedia dysfunction (PPID).

**Jack Easley, DVM, MS, ABVP, Dipl. AVDC (Eq)**, of Easley Equine Dentistry, followed up Tadros' presentation with a talk on dental care for geriatric horses. He focused specifically on older horse dentition and dental disease.

Then, **Sarah Ralston, VMD, PhD, Dipl. ACVN**, who recently retired from Rutgers, The State University of New Jersey, gave an overview of "Feeding the Old Grey Mare." She covered how to determine whether a healthy aged horse needs dietary changes by evaluating blood work, dentition, the presence or absence of kidney and liver failure, and more.

**Kristine Urschel, PhD**, from UK, then shared how to feed the older horse with PPID and/or insulin resistance, where she covered nutritional challenges with PPID, hay and grain quality, and insulin resistance.

The final speaker of the day was

## 100th Seminar Series

**Scott Fleming, DVM, CF**, of Rood & Riddle Equine Hospital, who discussed podiatry for the geriatric horse. He described diseases and ailments that commonly impact aged horses and shoeing techniques to treat them.

The last seminar this year will take place Nov. 16 and cover “Horse

Behavior—Using Learning Theory in Everyday Situations.” Camie Heleski, PhD, a lecturer within the UK Equine Science and Management undergraduate program, will speak from 4-5 p.m. at the UKVDL.

The UK Department of Veterinary Science offers continuing education credits for veterinarians through attendance of seminars and other professional presentations by visiting scholars. These seminars focus

on equine research. Information on forthcoming seminars and presentations both eligible and noneligible for continuing education credit is available at [gluck.ca.uky.edu/events](http://gluck.ca.uky.edu/events).

Individuals with questions regarding the symposium can contact Adams at [Amanda.adams@uky.edu](mailto:Amanda.adams@uky.edu). **UK**

>Katie Lampert is a marketing and communications intern at the UK Gluck Equine Research Center.

## Pasture Management Workshop to Take Place in Louisville

A special equine-focused workshop will be held at the American Forage and Grassland Council’s (AFGC) annual conference Jan. 15, 2018, in Louisville, Kentucky.

“The equine workshop will focus on results from recent research projects that can be applied to farm management situations,” said Bob Coleman, PhD, UK horse extension specialist. “This is a great opportunity for horse owners, farm managers, or those in the service industry that work and advise these groups to take new information and apply it to the pastures and paddocks they manage.”

Presentations will include:

- Pasture management to optimize horse health—Bridgett McIntosh, PhD, Virginia Tech University;
- Grazing bermudagrass in Kentucky—Bob Coleman, PhD, UK horse extension specialist;
- Managing horse preference in pastures—Laurie Lawrence, PhD, professor in UK’s Department of Animal and Food Sciences;
- Grazing alternative forages in horse pastures—Krishona Martinson, PhD, University of Minnesota; and
- Pasture management on a budget—Gary Webb, PhD, Missouri State University.

The workshop is scheduled for “Producer Day,” when presentations and posters are focused on applied research that can impact farms and managers now.

The AFGC, which aspires to be the “leader and voice of economically and environmentally sound forage-focused agriculture,” hosts an annual conference



ANNE M. EBERHARDT/THE HORSE

Conference attendees can take new information they learn and apply it to the pastures and paddocks they already manage.

in January in different locations within the Southeastern United States. This marks the first year that AFGC will include an equine-only workshop.

“Kentucky is in the heart of horse and forage country and is the ideal location to host the first AFGC Equine Workshop,” said Martinson, an equine extension specialist and the workshop organizer. “With the increasing interest in managing horse pastures and the growing body of research, now is the perfect time to talk about horse pasture management.”

Producer Day will begin with a keynote address from Greg Peterson. He and his siblings are best known as the Peterson Brothers, and they produce parody videos about agriculture on their farm in Kansas. With the success of their videos, Peterson now speaks regularly as an agriculture advocate at events across the United States and internationally. The equine workshop

will follow the keynote address with three additional afternoon workshops, poster sessions, the Forage Spokesperson Competition, and the playoff round of the National Forage Bowl.

“This conference is all things forages, from establishment to grazing management, harvesting, and feeding,” said Ray Smith, PhD, UK forage extension specialist and AFGC past-president, who will oversee the conference. “Forages are managed similarly, regardless of what species is grazing them. While this conference is traditionally focused on beef cattle and hay production, horse owners will find a wealth of information in any session. The addition of an equine-focused workshop shows that AFGC is truly committed to the advancement of forages for all livestock, including horses. Kentucky is proud to be the first to host this workshop and hopes it will continue in the future.”

## Pasture Management Workshop

One-day registration is \$75 and includes breakfast, lunch, and the keynote address, as well as all workshops, poster sessions, competitions, and a large trade fair for all types of farm supplies and services. More information can be found at [www.afgc.org](http://www.afgc.org). Walk-in registration will be allowed until venue capacity is reached. **UK**

>Krista Lea, MS, is the UK Horse Pasture Evaluation Program coordinator.

## Upcoming Events

### Nov. 10, 8 a.m.-5:30 p.m.

5th Annual USDA NIFA Symposium:  
Equine Arteritis Virus Research Outcomes,  
Griffin Gate Marriott Research and Spa,  
Lexington, Kentucky  
Register online at  
[2017eavsymposium.eventbrite.com](http://2017eavsymposium.eventbrite.com).

### Nov. 16, 4-5 p.m.

UK Department of Veterinary Science  
Equine Diagnostic Research Seminar  
Series  
Topic: Horse Behavior—Using Learning  
Theory in Everyday Situations  
Speaker: Camie Heleski, PhD, University  
of Kentucky  
Location: UK Veterinary Diagnostic  
Laboratory

## Stay Socially Connected to UK Ag Equine Programs

The UK College of Agriculture, Food and Environment has several equine-related social media pages featuring the latest news and events information.

Follow us on Twitter:

**UK Ag Equine Programs:** @UKAgEquine

**UK Maxwell H. Gluck Equine Research Center:** @UKGluckCenter

**NEW!! UK Veterinary Diagnostic Laboratory:** @UKVDL



Prefer Facebook? Like these pages administered by us:

**UK Ag Equine Programs:** An overarching framework for all things equine at UK, including the undergraduate degree program, equine-related student organizations, equine research and outreach activities.

**UK Equine Alumni:** A community established for the alumni of UK's equine programs, including ESMA, graduate students and clubs and teams' members.

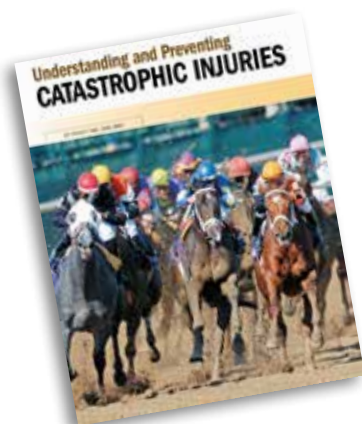
**UK Maxwell H. Gluck Equine Research Center:** The mission of the Gluck Center is scientific discovery, education and dissemination of knowledge for the benefit of the health and well-being of horses.

**NEW!! UK Veterinary Diagnostic Laboratory:** The mission of the UKVDL is to develop and apply state-of-the-art diagnostic methodology to improve animal health and marketability, to protect the public health and to assist in the preservation of the human-animal bond through the principles of One Health.

**UK Horse Pasture Evaluation Program:** A service program offered to Kentucky horse farms with the goal of overall improved pasture management.

**Saddle Up SAFELY:** A rider safety awareness program sponsored by UK HealthCare, UK College of Agriculture, Food and Environment and many community organizations. It aims to make a great sport safer through education about safe riding and horse handling practices. **UK**

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