



## Bluegrass Advantage in Animal Sciences and the Equine Industry

April 2017

Animal sciences focuses on the production and management of livestock and domestic animals. Animal scientists apply biological, physical, and social sciences to understand and study animals' physiology, behavior, welfare, nutrition, genetics, and diseases. The animal sciences industry is becoming increasingly important as consumers seek higher quality food and finite land limits food production for the world's growing population. These issues and others offer opportunities for quality, high-paying jobs and require innovative animal scientists.

The equine industry is an important part of animal sciences, particularly for Lexington. According to VisitLEX, there are approximately 150 horse farms in Lexington and about 450 in the region. Horse farms typically focus on a specific horse breed, and farms in the Bluegrass Region tend to specialize in breeding and training Thoroughbred horses for racing. In addition to these farms, Lexington is home to the Keeneland Race Track, the Red Mile Harness Track, the National Horse Show, the Kentucky Horse Park, the International Museum of the Horse, the Rolex Three Day Event, and equestrian retirement facilities such as Old Friends Farm. Nearly 80,000 direct and indirect jobs are supported by Kentucky's horse industry and the University of Kentucky has become a leader in animal science and equine research to support this robust sector.



The equine industry is also prominent in Lexington's culture. Driving through the city, visitors will encounter 82 unique art horses, with another 57 art horses indoors. These horses were placed throughout Lexington as part of Horse Mania 2010, a public arts project celebrating Lexington's horses and artists.

### **Infrastructure Built for the Horse Industry**

Lexington and the Bluegrass Region have a strong infrastructure to support the horse industry, including horse farms, racetracks, the Kentucky Horse Park, museums, equestrian events, equine medical facilities, and research and development at the University of Kentucky.

Horse racing is a major part of the equine industry and living in the Bluegrass. Lexington is home to two historic racetracks: the Red Mile and Keeneland. The Red Mile Harness Track is the second oldest harness track in the country, known for its one-mile track made of red clay. However, Keeneland is the more popular racing facility. Established in 1936, Keeneland is a beautiful historical race track and sales complex,



drawing the world's best horses and thousands of people every year who flock to Keeneland to bet on the horses and spend time enjoying the festive atmosphere. Furthermore, the Keeneland Library is one of the largest resources for horse and racing information in the world with approximately 30,000 books, 400,000 photographic negatives, and thousands of other historical documents. In addition to being a National Historic Landmark and a unique entertainment venue, Keeneland is also a significant part

of Lexington's local economy. The University of Kentucky's Center for Business and Economic Research recently conducted a study to determine Keeneland's impact on Fayette County's economy by surveying participants at the 2014 Fall Meet, September Yearling Sale, and November Breeding Sale. All together, these three events generated \$75.6 million in direct spending in Fayette County and almost \$6.4 million in tax revenue that would not have entered Fayette County without Keeneland. In total, Keeneland's Fall Economic Impact was over \$454 million. The Spring Meet was projected to generate another \$64 million in direct spending and \$104 million in total economic impact. This means that Keeneland's total economic impact for Lexington is over \$590 million every year.

In 2015, Lexington hosted the Breeders' Cup World Championship at Keeneland for the first time. Lexington welcomed the Breeders' Cup with a week of events and activities, such as the Feeders' Cup, the annual Thriller Parade, Master Distillers' events, Here Come the Mummies, the Post Position Draw party, the Prelude to the Cup, art exhibits, horse farm tours, breakfasts at the track, and live music. The city hosted 24,000 to 40,000 visitors each day, bringing money to Lexington's restaurants, shops, and hotels that otherwise would not have entered the local economy. The economic impact was estimated at over \$65 million, based on previous host cities' experiences with Breeders' Cup.

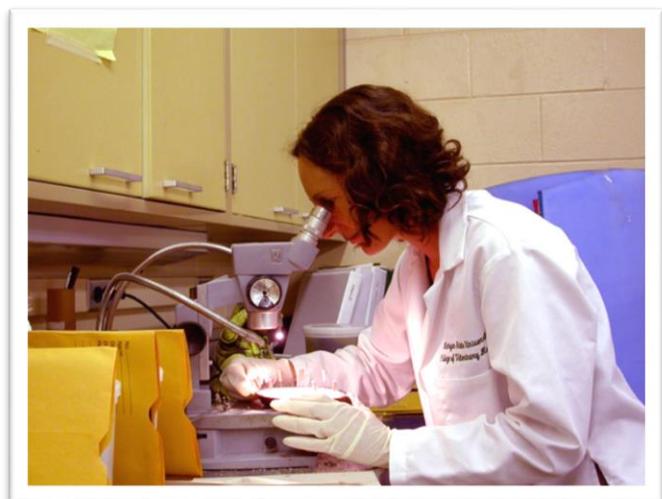
The Kentucky Horse Park is another asset of the region's horse industry. With 1,200 acres, the Kentucky Horse Park is a working farm with 50 breeds of horses. Visitors learn about horses and can take part in equine presentations and tours. More than 30 equine management and breed organization headquarters are located in the park, including the United States Equestrian Federation, the Kentucky Horse Racing Commission, the American Saddle Horse Museum, and the International Museum of the Horse, the largest, most comprehensive museum focused on horses and the historical relationship between humans and horses in the world.

Many equestrian events are held at the Kentucky Horse Park, including the Rolex Three Day Event, the National Reining Championship, and the 2010 World Equestrian Games. Lexington was the first location outside of Europe to host the World Equestrian Games, a testament to Lexington's equestrian culture and strong equine industry. Of the more than 507,000 attendees, 70% were from out-of-state, meaning that Lexington's horse industry attracted 307,000 people that otherwise would not have spent money in Lexington's economy. Direct spending by the 2010 attendees was \$128.2 million and \$22.9 million in state and local tax revenues was generated.

Lexington and Kentucky are also home to the best equine facilities in the world, including Rood & Riddle Equine Hospital, Hagyard Equine Medical Institute, Woodford Equine Hospital, and Lexington Equine Surgery and Sports Medicine. Furthermore, the University of Kentucky and its continued efforts to advance equine research have been valuable assets to the horse industry, particularly the Ag Equine Programs and the Maxwell H. Gluck Equine Research Center.

### **University of Kentucky's Equine Research**

The University of Kentucky formalized its commitment to Kentucky's equine industry by creating the Ag Equine Programs in 2005, originally named the Equine Initiative. The Ag Equine Programs is a multidisciplinary umbrella organization representing all equine activities, services, and expertise within UK's College of Agriculture, Food, and Environment. Equine faculty, staff, and students collaborate to advance equine health, performance, and management and to improve Kentucky's equine industry. The Ag Program offers adult and youth extension programs, diagnostic services by UK's Veterinary Diagnostic Laboratory (VDL), monthly Equine Diagnostic and Research Seminar Series by the Department of Veterinary Science, and a Horse Pasture Evaluation Program, among others. In fact, the VDL processes over 53,000 cases annually and the Horse Pasture Evaluation Program has evaluated over 30,000 farm acres.



The University of Kentucky's Equine Science Management (ESMA) undergraduate degree prepares students for careers in the horse industry. The Equine Science track teaches animal biology and biochemistry to prepare graduates to work with horses while the Equine Management track focuses on business, agricultural marketing, and hospitality. During the 2016-2017 school year, 304 students were enrolled in ESMA. As of 2016, over 220 students have graduated from the ESMA program.

The University of Kentucky is also producing top equine research. The Maxwell H. Gluck Equine Research Center is a premier equine research facility whose programs include genetics and genomics, immunology, infectious diseases, musculoskeletal sciences, parasitology, reproductive health, and pharmacology, therapeutics, and toxicology. In 2016, more than 80 faculty, staff, and graduate students were engaged in



*Maxwell H. Gluck Equine Research Center. Photo: [gluck.ca.uky.edu](http://gluck.ca.uky.edu).*

equine research, supported by over \$39.2 million in grants awarded. The Ag Equine Programs estimates that 110 peer-reviewed academic journal articles and 7 books/book chapters were produced by UK faculty. Major research accomplishments include vaccines, diagnostic serological tests, enzyme-linked immunosorbent assay (ELISA) test, methods for inducing the breeding season, testing for color traits, and identified the cause of Mare Reproductive Loss Syndrome. The Gluck Center also serves the equine industry by offering several testing services, reference laboratories, library and information services, the Veterinary Diagnostic Laboratory, and the Animal Genetic Testing & Research Laboratory.

### **Equine Companies and R&D in Lexington**

The Gluck Equine Research Center is a valuable research partner for many of Lexington's equine companies, including MEP Equine Solutions, LLC. A prominent animal health products company, MEP recently developed the Parasight System, an innovative parasite diagnostics and management tool, with support from the Gluck Center as a research facility partner. The Parasight System detects and diagnoses parasites through on-site sample collection, filtration, and analysis using a smartphone app. The existing method of analyzing intestinal parasites required special equipment, user expertise, manually counting fecal eggs on a microscope slide, and several days of processing, but the Parasight System is easy to use and produces immediate results on location.

Other equine companies in Lexington are also creating revolutionizing products. Equinext, LLC, develops, manufacturers, and sells injectable treatments for equine ligament, tendon tissue damage, and stifle joint injuries. Equinext is a spinoff company of Orthopeutics with headquarters and laboratory space in the Coldstream Research Campus. In 2014, Equinext released Novobrace, an injectable bioadhesive that stabilizes soft tissue injuries. Novobrace prevents more damage from occurring, reduces recovery time, and allows horses to remain active during recovery.

Lexington also boasts major international companies in the equine industry, such as Neogen Corporation, LGC Group, Hallway Feeds, and Equine Diagnostic Solutions.

Neogen is an international food-allergy biotech company that produces food and animal safety products and technology. Neogen's Animal Safety Division is located in Lexington and develops, manufactures, and markets diagnostics, veterinary instruments, pharmaceuticals, rodenticides, disinfectants, vaccines, and ELISA testing kits.



Photo: [www.keeneland.com](http://www.keeneland.com)

LGC Group operates international independent drug surveillance laboratories specializing in doping control for animal sports, as well as providing veterinary services, animal feed testing, sample management, reference materials, and genomics solutions for clients in the pharmaceutical, agricultural biotechnology, food, environment, sports, government, and academic sectors. LGC Group provides drug testing for premier events in the horse industry, such as the equine competitors in the 2012 and 2016 Olympic and Paralympics Games, and the Lexington facility provided services for the 2011 and 2015 Breeders' Cup and multiple years of the Kentucky Derby. LGC Group is based in England, but its Lexington location allows the international company to be close to its highest profile clients, Kentucky thoroughbreds. In fact, LGC expanded its Lexington operation in 2016 due to strong demand for its expertise.

Hallways Feeds is an equine nutrition technology and manufacturing company, as well as a major feed supplier to the thoroughbred racing industry in Kentucky and around the world. Hallway Feeds produces over 40,000 tons of feed annually.<sup>1</sup> Half of Hallways Feeds products are purchased in Fayette County and its contiguous counties, while 35% travels to other major racing states such as New York, California, and Florida, and the remaining 15% is exported overseas. Hallway Feeds works in partnership with Kentucky Equine Research, an international equine nutrition, research, and consultation company located in Versailles, KY, to design premium horse feed and develop databases of growth data for Thoroughbred foals and yearlings to improve the health and athleticism of horses.

Equine Diagnostics Solutions (EDS) is an equine specialty testing laboratory focused on diagnosing and monitoring equine infectious diseases, including equine herpes, West Nile virus, equine infectious anemia, equine influenza, rhodococcal pneumonia, equine proliferative enteropathy, and salmonellosis. EDS provides testing and services worldwide and is located in Coldstream Research Campus.

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<sup>1</sup> As of 2014.

## Local Attributes

The horse industry is not only a core segment of Lexington's economy, it is also at the heart of the local culture. From streets named after famous racehorses – such as Citation Boulevard, Man O'War Boulevard, and Sir Barton Way, to name a few – to citywide horse-themed public art, Lexington is truly a horse city.

Lexington's educated workforce is vital to supporting the equine industry. The 2015 Census data ranks Lexington the 11<sup>th</sup> most educated county in the nation, with 41.6% of the population 25 years or older with at least a bachelor's degree. Even more impressive, 18.9% of the population over age 25 has an advanced degree, ranking Lexington #9 among cities with at least 300,000 people. This is due in part to being within 40 miles of 10 different colleges and universities. Nearly 70,000 students are enrolled in these institutions, graduating over 16,000 annually. Lexington was ranked the World's 24<sup>th</sup> Smartest City by *National Geographic* in 2014, #1 Best Mid-sized City for New College Grads Starting Careers by *Onlinedegrees.com* in 2016, and the 19<sup>th</sup> Best College Town in America by *Best College Reviews* in 2016.



Thursday Night Live. Photo: Commerce Lexington Inc.

Lexington has many other competitive advantages for attracting and retaining businesses. The city's central location and excellent transportation system puts Lexington within a 600-mile radius of the majority of the nation's manufacturing employment, retail sales, and population, meaning that the Bluegrass is within overnight range of more than half of the U.S. market. Furthermore, the city's high quality of life consistently receives recognition from a variety of publications, such as #16 Best Large City to Live In by *WalletHub* (2016), #21 Best County

for Young Professionals by *Niche* (2016), and among *Forbes'* Best Places to Retire (2016). Lexington excels in areas such as affordable housing, public schools, standard of living, and access to education and healthcare. Another of Lexington's strongest attributes is our business climate. *Forbes* ranked Lexington #16 Best Place for Business and Careers and *Area Development* ranked Kentucky #10 Best State for Doing Business in 2015 – predicated on our solid job growth, the education of our labor force, and low business costs.

With an educated workforce, access to top colleges and universities, a strong commitment to equine R&D at the University of Kentucky, two race tracks, horse farms, and a prominent horse culture, the equine industry will continue to thrive in Kentucky's Bluegrass Region.

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