



The Bluegrass Advantage in Animal Sciences, AgTech, and Equine

March 2020

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. Agriculture technology (AgTech) is an emerging sector that seeks to increase the productivity of agriculture systems and reduce the social and environmental impacts of current processes. Both industries are becoming increasingly important as consumers seek higher quality food and finite land limits food production for the world's growing population, and each sector offers opportunities for quality, high-paying jobs that require innovative scientists and engineers. By building upon the region's existing Agribusiness cluster, Animal Science and AgTech businesses find success in the Bluegrass.

The equine industry is an important part of animal sciences and AgTech, particularly for Lexington. According to VisitLEX, there are approximately 150 horse farms in Lexington and about 450 in the region¹. Horse farms typically focus on a specific horse breed, and farms in the Bluegrass Region tend to specialize in breeding and training Thoroughbreds 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 Land Rover Kentucky Three Day Event, and equestrian retirement facilities such as Old Friends Farm. Nearly 80,000 direct and indirect



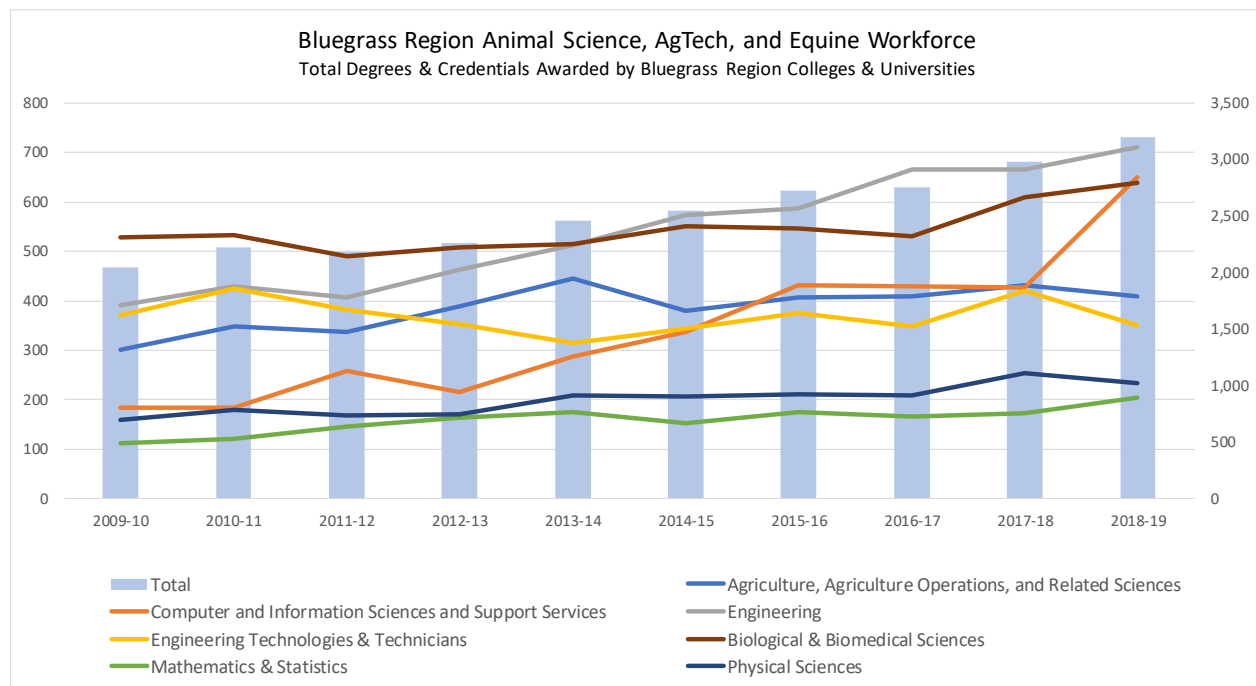
¹ <https://www.visitlex.com/idea-guide/horse-farm-tours/>

jobs are supported across the state by the horse industry and the University of Kentucky has become a leader in animal science and equine research to support this robust sector².

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. 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.

Technology for the Future of Farming

Agribusiness has existed, evolved, and diversified from the time when people first farmed. Many experts use the terms AgTech and Agribusiness interchangeably while others draw a distinction between the two by defining AgTech exclusively as “the application of technology – especially software and hardware technology – to the field of farming”³. Regardless of the definition, Lexington has established and emerging companies that are bringing innovation to the way we grow crops, raise animals, and turn them into consumers products. Agriculture businesses in the Bluegrass benefit from the top talent available at the region’s 10 colleges and universities.



Source: Kentucky Council on Postsecondary Education, Data Center, Degrees, Accessed 23 Mar. 2020.

² <https://horseswork.com/industry-facts/>

³ <https://www.forbes.com/sites/erikkobayashisolomon/2018/10/31/agtech-a-great-investment-for-the-future/#54fe0cdb1a09>

AppHarvest

With their headquarters located in downtown Lexington and the first of many high-tech greenhouses in Morehead, KY, AppHarvest has set out to make Appalachia

America's AgTech Capital. AppHarvest's innovative greenhouses use 90% less water than traditional farming methods, grow produce year-round, and reduce diesel consumption in transportation by 80% due to their location within 70% of the U.S. population⁴. In 2019, the startup secured \$82 million in funding to build a 60-acre greenhouse that will provide 285 full-time jobs. The company's model allows them to distribute produce to the top 25 grocers nationally. AppHarvest is utilizing partnerships to build their vision with the support of the University of Kentucky, Pikeville University, Wageningen University, Sunset Produce, SOAR, Goodwill, Revolution's Rise of the Rest Fund, ValueAct Spring Fund, and Equilibrium Capital's Controlled Environment Foods Fund⁵.

Much like AppHarvest, Stellar Plants is using indoor vertical farming systems to produce crops year-round, with higher yields, and free from pesticides, herbicides, and insecticides. Additionally, the company's systems use 97% less water than traditional farming techniques. One of Stellar's distinguishing factors is that they only deliver within 50 miles of their operation to ensure the freshest produce possible⁶. Currently, the business is only growing leafy greens with plans to expand their offerings.



Smart Farm Systems has taken a different approach to bringing innovation to agriculture. Smart Farm has created a wireless monitoring and control system that provides farmers with enhanced control and information through remote irrigation pumps and more accessed using a mobile app or other smart device. The system increases farm efficiency and profitability by enabling farmers to provide the right amount of water at the right time and in the right place. Smart Farm's products are perfect for medium to large-scale flood and furrow irrigation farmers. Beyond transforming agriculture, the company's solutions can be applied to quarry sites and mines for significant savings.

⁴ <https://www.appharvest.com/>

⁵ <https://hypepotamus.com/news/appharvest-82-million-investment/>

⁶ <https://stellar-plants.com/about>

Industrial Hemp and Cannabidiol

Known as the plant with 50,000 uses, industrial hemp's fibers, hurds, seeds, and oil can be used to produce a wide array of products ranging from insulation and concrete to textiles and medicines. Cannabidiol (CBD), the oil coming from the plant, is the part most often referenced for its proposed medicinal benefits. The FDA has approved one CBD based drug called Epidiolex which is used for the treatment of seizures associated with Lennox-Gastaut syndrome and Dravet syndrome in people 2 years of age and older, but consumers have reported an array of other benefits including pain relief, anxiety and depression treatment, reducing acne, promoting heart health, and alleviating cancer-related symptoms. According to Research and Markets, the global industrial hemp market is expected to grow from \$4.6 billion in 2019 to \$26.6 billion in 2025⁷.

Kentucky's climate, soil, and proximity to major markets makes it the ideal location for hemp businesses. Companies in the Commonwealth have access to an abundant supply of growers, top universities pioneering research on the versatile crop, the agglomeration effects of a thriving hemp and biotech cluster, and to 65% of the U.S. personal income and population within a day's drive.

AgTech Scientific operates on the four pillars of farming first, research and development, extraction and manufacturing, and consumer products to support their trademark "Root to Shelf" (R2S). The company seeks to provide only the best hemp-derived products through their high-tech farming techniques compliant with Good Agricultural Practice (GAP) guidelines and by developing evidence-based pharmaceutical grade products in partnership with the nearby University of Kentucky. AgTech's R2S Branded CBD Pet & Equine formulates are currently in their 3rd year of clinical trials with the aim to support verifiable claims in the marketplace⁸. AgTech announced their Paris, Ky location in 2018 with a \$5 million investment and the creation of 271 jobs.



Colorpoint's hemp greenhouse. Photo: AgTech Scientific

AgTech Scientific
from root to shelf™



capabilities⁹. In 2018, Zelios announced an expansion to their operations with a reported investment of \$2.1 million and the creation of 44 jobs.

Dedicated to responsibility, innovation, and sustainability for the right reasons, Zelios is an emerging leader in the hemp industry. Recognizing Kentucky's historical connection to hemp along with the logistical advantages the Bluegrass provides, the company established their largest facility in Lexington to allow for continuous growth in their processing

⁷ www.researchandmarkets.com

⁸ <https://agtechscientific.com/#clinical-trials>

⁹ <https://zelios.com/facilities/>

Elemental Processing supplies the CBD market with oils, distillates, and isolates used in many retail products including capsules, tinctures, skincare, beverages, and health care products. Elemental Processing's main facility spans over 42,000 square feet, contains cutting edge machinery for supercritical and subcritical CO2 extraction, and is in Lexington, KY. In addition to processing for hemp-derived products, the company has contracts on thousands of acres of licensed hemp farms providing a consistent and reliable supply of biomass¹⁰.



Hemp crops. Photo: Elemental Processing

For a list of more hemp companies in the Bluegrass, see Appendix A.

Beverage Manufacturers & Headquarters in the Bluegrass

The state of Kentucky has historically had a strength in the beverage production industry. This largely stems from the Commonwealth's abundant farms and history as the birthplace of bourbon and the first commercial winery in America, First Vineyard¹¹. According to the Kentucky Cabinet for Economic Development, Kentucky ranks 6th in the nation for total number of farms, has nearly 50,000 employees in food and beverage related industries, and has over 300 food and beverage related facilities¹². Kentucky's agricultural access and history combined with its competitive advantage in logistics and distribution due to its central location have led to explosive growth in all types of beverage manufacturing. All of this gives AgTech companies unparalleled access to both their suppliers and target markets in a destination also known for agricultural tourism.



The Bluegrass Region contains globally recognized, beverage brands across the bourbon, beer, and soft drink industries alongside several regional favorites. One of the local signatures, Ale-8-One Bottling Company was established in 1902 in Winchester, KY just outside of Lexington. The company is still privately owned today. Ale-8-One (pronounced "a late one) produces a citrus and ginger soda that resembles a mild ginger beer. The business has grown over the years and now includes cherry flavors. In 2019, Ale-8-One announced an expansion with \$19.4 million of investment and creation 40 full-time jobs¹³.

Global giants in the soft drink industry, Coca Cola and Pepsi-Cola, also call the Bluegrass home. Coca Cola Bottling Company Consolidated has 252 full-time employees at their Lexington facility. Pepsi-Cola Bottling Co. has 580 employees in the Bluegrass between their Lexington and Winchester



¹⁰ <https://www.elementalprocessing.com/farming>

¹¹ <https://www.firstvineyard.net/history.html>

¹² https://thinkkentucky.com/Webfiles/docs/Existing_Industries/Food-Beverage-2016.pdf?71

¹³ <https://www.kentucky.com/news/business/article225929795.html>

locations¹⁴. Both companies benefit from the superior access to supply chains and major consumer markets offered in the Bluegrass.

In 2019, Kentucky's exports of whiskey hit a new high of \$485 million due largely to the growing national and international appeal of the beverage¹⁵. For more than 200 years, Kentucky's legendary distilleries have crafted the world's finest bourbons. This tradition can be explored on the Kentucky Bourbon Trail tour. The Bluegrass features nine distilleries within 30 miles of Lexington, including Alltech's Lexington Brewery and Distillery in downtown, Woodford Reserve in Versailles, and Four Roses in Lawrenceburg. Another famous Kentucky brand, James E. Pepper whiskey, reopened in 2017 in Lexington's Distillery District, where it originated in 1879. The \$1.3 million investment includes a museum.



Even as an industry rooted in tradition, bourbon companies are innovating around the ways they've made the spirit for centuries. The University of Kentucky and Beam Suntory have partnered to create the James B. Beam Institute for Kentucky Spirits. The partnership was created to ensure economic sustainability within the state's spirits industry by creating innovation, educating communities, and establishing a pipeline of highly skilled talent. The James Beam Institute has created the Distillation, Wine, and Brewing Studies Undergraduate Certificate Program to meet the demand for an equipped and passionate workforce¹⁶.



Although Kentucky is famous for its bourbon, the craft beer movement in Lexington and the Bluegrass Region is alive and well. Craft breweries are now scattered across Kentucky, and increasingly Lexington's residents are seeking out craft brewers in addition to sampling classic bourbons. The Brewgrass Trail is dedicated to showcasing the craft brewers establishing themselves in the Bluegrass¹⁷.

Within Lexington, there are 10 craft breweries including West Sixth Brewing, which has undergone four expansions since 2015. Country Boy Brewing is another popular brewery located adjacent to downtown. In 2015, Country Boy expanded their operations just north of Lexington in Georgetown, Kentucky with an investment of \$4,145,000 and resulting in 20 full-time jobs.

¹⁴ <https://locateinlexington.com/data-facts-and-figures/major-employers/>

¹⁵ <https://www.lanereport.com/121989/2020/02/whiskey/>

¹⁶ <https://beamstitute.ca.uky.edu/>

¹⁷ <https://www.kentuckytourism.com/ky-taste/culinary-trails/brewgrass-trail/>



Country Boy Brewing's Georgetown facility. Photo: brewbound.com

For a list of more beverage manufacturers and headquarters in the Bluegrass, see Appendix B.

Food Manufacturers & Headquarters in the Bluegrass

When someone thinks about foods associated with Kentucky, odds are they'll think of Kentucky Fried Chicken (KFC) and the rest of the Yum! brands that are headquartered an hour west of Lexington in Louisville, KY, but not as many know just how many other national and international brands have locations across Kentucky. In Mt. Sterling, Nestle Prepared Foods makes the entire supply of Hot Pockets. Nestle chose to consolidate their operations to Kentucky from Colorado in 2013. In Pikeville, Kellogg's manufactures Pop-tarts. In Owensboro, Ragu prepares their Spaghetti Sauce. Food manufacturing spreads across the Commonwealth, but perhaps the most impressive is JM Smucker Company's Jif peanut butter facility in Lexington.

The iconic household brand Jif Peanut Butter is made in the Bluegrass. The Jif plant in Lexington is the largest peanut butter production facility in the world¹⁸, requiring 188 billion peanuts annually and employing around 290 people. Since 2013, Smucker has invested over \$143 million in the Lexington facility to increase efficiency and productivity, improve machinery and equipment, and increase product line capacity.



Lexington's Jif plant is the largest, peanut-butter producer in the world.

The headquarters of another international brand, A&W Restaurants, is located in the University of Kentucky's Coldstream Research Campus. The company is co-owned by Yum! Brands and A Great American Brand, LLC and is known for their signature root beer, floats,



¹⁸ https://thinkkentucky.com/Webfiles/docs/Existing_Industries/Food-Beverage-2016.pdf?84

and all-American food. Founded in 1919, A&W recently celebrated their 100th anniversary. In 2019, the company secured land within the Coldstream Research Campus to build their new headquarters.

In 2016, More Than A Bakery, LLC announced their location in the Bluegrass with a reported investment of \$55.1 million and creation of 310 full-time jobs. The bakery's initial operations include a 250,000 square foot manufacturing facility on over 100 acres of land to be used for future expansion. The company's site consultant, Brandon Talbert, stated, "Ultimately, the City of Versailles was chosen based on several key factors, including the desirability of the local Versailles community and surrounding Lexington region; available land and proximity to raw materials and transportation needs, as well as an attractive economic development incentive package and other assistance from the state of Kentucky."¹⁹ More Than A Bakery is a testimony to the value of the strategic advantages the Bluegrass provides to agribusiness.

For a list of more food manufacturers and headquarters in the Bluegrass, see Appendix C.

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 Harness Track and Keeneland. The Red Mile is the second oldest harness track in the country, known for its one-mile track made of red clay. Attending a Spring or Fall Meet at Keeneland is an annual tradition for many. Established in 1936, Keeneland is a beautiful, historical racetrack 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.



Keeneland is also a significant part of Lexington's local economy. The University of Kentucky's Center for Business and Economic Research 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 year²⁰.

¹⁹ <https://locateinlexington.com/wp-content/uploads/More-Than-a-Bakery-Company-Press-Release.pdf>

²⁰ <http://cber.uky.edu/publications/research-report/2015/measure-economic-impact-keeneland-racing-and-sales-lexington>



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' Cup²¹. After a successful first event, the Breeders' Cup announced in 2018 that the World Championship will return to Lexington in 2020.

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 (USEF), 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.

In 2019, USEF opened their new 35,000 square foot headquarters in Lexington. The layout of the space promotes increased visitor engagement and maximizes collaborative workspace for the 155 employees of USEF, while representing and providing resources for the 11 breeds, 18 disciplines, 20 affiliates, and more than 145,000 members that encompass the US Equestrian Federation. As part of the United States Olympic and Paralympic Committee family, the building proudly displays the official designation of the Olympic rings and the Paralympic symbol and is located directly inside the main entrance at the iconic Kentucky Horse Park²².



U.S. Equestrian hosted the ribbon cutting of their new headquarters. Photo: Andrea Evans/U.S. Equestrian

Many equestrian events are held at the Kentucky Horse Park, including the Land Rover Kentucky 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

²¹ <https://www.keeneland.com/sites/default/files/BC2020Announcement-BC-FactSheet.compressed.pdf>

²² <https://www.usef.org/media/press-releases/us-equestrian-hosts-official-grand-opening-of-new>

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.

For a list of equine-related organizations in the Bluegrass, see Appendix D.

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. The College offers 21 undergraduate and 23 graduate programs that awarded 699 degrees and credentials in 2019²³. 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 45,000 cases annually and the Horse Pasture Evaluation Program has evaluated over 30,000 farm acres²⁴.



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The University of Kentucky's Equine Science Management (ESM) 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 2019-2020 school year, 305 students were enrolled in ESM²⁵. As of 2019, 390 students have graduated from the ESM program²⁶.

²³ <https://administration.ca.uky.edu/content/quick-facts>

²⁴ <https://equine.ca.uky.edu/horsepastures>

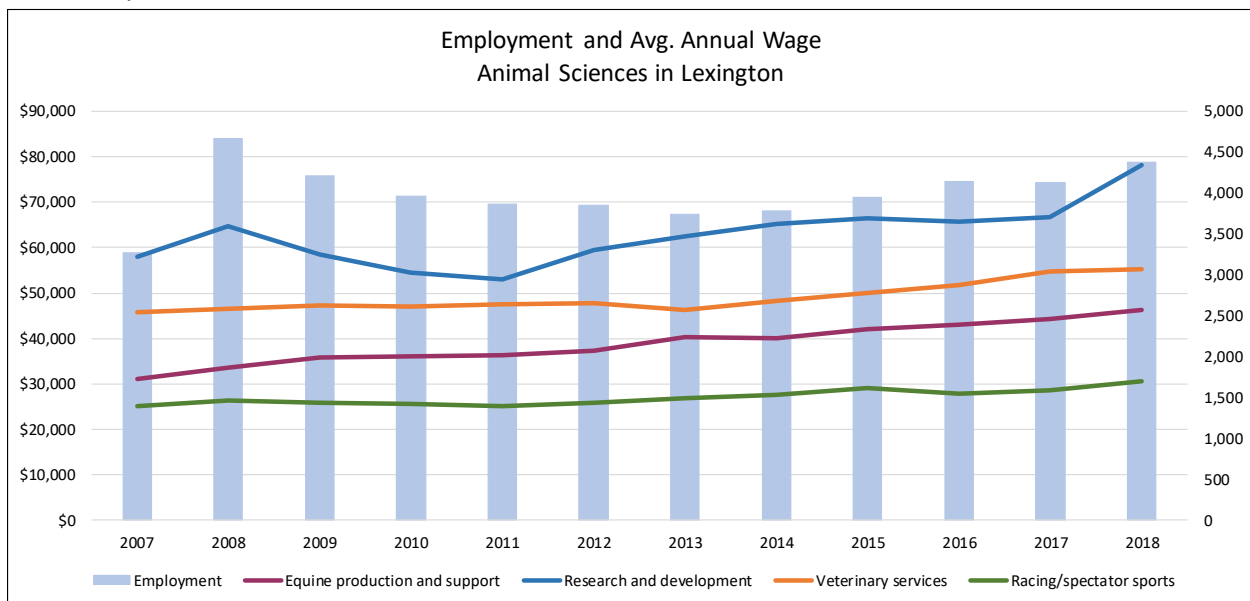
²⁵ <https://cpe.ky.gov/data/enrollment.html>

²⁶ <https://cpe.ky.gov/data/degrees.html>

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 equine research, supported by over \$39.2 million in grants awarded. The Ag Equine Programs estimates that 110 peer-reviewed academic journal articles and seven books/book chapters were produced by UK faculty²⁷. 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.



Maxwell H. Gluck Equine Research Center. Photo: gluck.ca.uky.edu.



Source: Bureau of Labor Statistics, QCEWS, Annual Averages.

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 Poop2Proof, an innovative parasite diagnostics and management tool, with support from the Gluck Center as a



²⁷ <http://gluck.ca.uky.edu/research-and-service-report>

research facility partner. Poop2Proof 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 Poop2Proof 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 international companies in the equine industry, such as Neogen Corporation, Hallway Feeds, and Equine Diagnostic Solutions.

The Neogen Corporation 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.



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 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.



Photo: [VisitLEX Gallery](#)

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.

For a list of more Animal Science, AgTech, and Equine R&D companies in the Bluegrass, see Appendix E.

Local Attributes

Lexington's educated workforce is vital to supporting the equine industry. The 2018 Census data ranks Lexington the 12th most educated city in the nation, with 42.9% of the population 25 years or older with at least a bachelor's degree. Even more impressive, 18.6% of the population over age 25 has an advanced degree, ranking Lexington 11th 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 18,000 annually. Lexington was ranked the 4th Top Potential Tech Growth Center by *the Brookings Institute* in 2019, 6th Best Midsized City in Economic Growth Potential by *Business Facilities* in 2018, and the 7th Best City for New College Grads by *SmartAsset* in 2019.



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 over two-thirds 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. market²⁸. Furthermore, the city's high quality of life consistently receives recognition from a variety of publications, such as 3rd Best Cities to Raise a Family by *Zumper* in 2018, 8th Best City to Live in America by *Money* in 2018, 3rd City with the Best Work-Life Balance by *SmartAsset* in 2020, 15th Best City for Young Professionals by *GOBankingRates.com* in 2019, and 1st Most Affordable City for an Early Retirement by *SmartAsset* in 2018. 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. *SmartAsset* ranked Lexington the 6th City with the Lowest Startup Costs in 2019 and *Site Selection* ranked Kentucky the 14th Best State Business Climate. For a look into life in Lexington, click [here](#).

With an educated workforce, access to top colleges and universities, elevated capacity for innovation, manufacturing and logistics advantages, high quality of life, and a prominent history of agricultural industries spanning equine, produce, hemp, and spirits, the Animal Sciences, AgTech, and Equine will continue to thrive in Kentucky's Bluegrass Region.

²⁸ <https://thinkkentucky.com/kyedc/pdfs/LogisticsQuickFacts.pdf?07112017&91>

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Appendix A – A List of Select Hemp Companies in the Bluegrass

Company	County
AgTech Scientific, LLC	Bourbon
Anavii Market	Fayette
Apical Hemp, LLC	Woodford
Aquatic Laboratories, LLC	Fayette
Atalo Holdings, Inc.	Clark
Bios Labs Kentucky, LLC (aka BIOS CBD)	Clark
Bluegrass Hemp Labs, LLC	Fayette
CABO Holdings, LLC	Fayette
Central Kentucky Solutions, LLC	Fayette
Curaleaf	Fayette
Ecofibre Limited	Harrison
Elemental Processing, LLC	Fayette
FOUSER ENVIRONMENTAL SERVICES, LTD.	Woodford
GenCanna Global USA Incorporated	Clark
Kentucky Cannabis Company LLC	Woodford
Kentucky Mobile Extraction LLC	Fayette
KYLEX BOTANICALS, LLC	Fayette
Lexsci Labs, Inc.	Fayette
Nature's Rhythm LLC	Bourbon
PROCESS MANAGERS, LLC	Clark
Radical 200 Institute LLC	Scott
Resonate Foods LLC	Madison
SPACE TANGO, INC.	Fayette
Sunjoined, LLC	Fayette
TEC BIOSCIENCES INC.	Fayette
The Pilot Farm, LLC	Boyd
UNITED HEMP INDUSTRIES LLC	Fayette
Voyekov Labs LLC	Fayette
Wilsondom LLC (aka HEMPfinity, LLC)	Fayette
Zelios	Fayette

Appendix B - A List of Select Beverage Manufacturers & Headquarters in the Bluegrass

Company	County
Ale 8 One Bottling Co	Clark
Alltech Lexington Brewing and Distilling Co Inc	Fayette
Barrel House Distilling	Fayette
Beam Suntory	Franklin
Beam Suntory	Franklin
Blue Stallion Brewing Company	Fayette
Bluegrass Distillers	Fayette
Buffalo Trace Distillery	Franklin
Capitol Brewing Company LLC	Franklin
Castle & Key	Woodford
Coca Cola Bottling Company Consolidated	Fayette
Country Boy Brewing	Scott
Dreaming Creek Brewery	Madison
Equus Run Vineyards	Woodford
Ethereal Brewing	Fayette
Fusion Brewing	Fayette
Glenns Creek Distilling LLC	Franklin
Hartfield & Company Distillery	Bourbon
Highbridge Springs Water Inc	Jessamine
HP Drinks	Madison
James E Pepper Distilling Company	Fayette
Kentucky Eagle Inc.	Fayette
Mirror Twin Brewery	Fayette
My Old Kentucky Foam	Scott
Pepsi-Cola Bottling Co	Fayette
Pepsi-Cola Bottling Co	Clark
Pivot Brewing	Fayette
Rock House Brewing	Fayette
Rooster Brewing	Bourbon
Sig Luscher	Franklin
Talon Winery & Vineyards	Fayette
Versailles Brewing Company	Madison
West Sixth Brewing Company LLC	Fayette
Wise Bird Cider Co.	Fayette
Woodford Reserve Distillery	Woodford

Source: ThinkKentucky.com, KY Cabinet for Economic Development Food & Beverage Industry Profile, 2016; SelectKentucky.com, KY Cabinet for Economic Development, NAICS 312 Beverage Manufacturing; Locateinlexington.com, Commerce Lexington Economic Development, Major Employers, 2019.

Appendix C - A List of Select Food Manufacturers & Headquarters in the Bluegrass

Company	County
A&W Restaurants, Inc.	Fayette
Bluegrass Animal Products Inc.	Fayette
Cargill Animal Nutrition	Clark
Clem's Refrigerated Foods	Fayette
Critchfield Meats	Fayette
Fazoli's Restaurant Group Inc.	Fayette
Gluten Free Miracles Bakery & Café	Fayette
Hallway Feeds	Fayette
Hunt Brothers Pizza, Pizza Wholesale of Lexington Incorporated	Bourbon
Laura's Lean Beef	Fayette
Mingua Beef Jerky	Bourbon
More Than A Bakery LLC	Woodford
Old Kentucky Chocolates LLC	Fayette
Process Managers, LLC	Clark
Rebecca Ruth Candy & Tours	Franklin
Sharp's Candies Inc	Fayette
The J.M. Smucker Company	Fayette
Uncle Charlie's Meats Inc	Madison
Weisenberger Mills Inc	Woodford
Winchester Farms Dairy	Clark
Woodford Feed Co Inc	Woodford

Source: ThinkKentucky.com, KY Cabinet for Economic Development Food & Beverage Industry Profile, 2016; SelectKentucky.com, KY Cabinet for Economic Development, NAICS 311 Food Manufacturing; Locateinlexington.com, Commerce Lexington Economic Development, Major Employers, 2019.

Appendix D – A List of Select Equine-Related Organizations in the Bluegrass

Company
American Associate of Equine Practitioners
American Farriers Association
American Hackney Horse Society
American Hanoverian Society
American Saddlebred Horse Association
Association of Racing Commissioners International
Breeders' Cup LTD
Brooke USA
Carriage Association of America
Central Kentucky Riding for Hope
Certified Horsemanship Association
EQSportsNet
Equestrian Events Inc.
Equine Land Conservation Resource
Friesian Horse Association of North America
High Hoep Steeplechase
Irish Draught Horse Society of North America
Kentucky Equine Education Project
Kentucky Horse Council, Inc.
Kentucky Horse Park Foundation
Kentucky Horse Racing Commission
Kentucky Mountain Saddle Horse Association
Kentucky Thoroughbred Association
KWPN North America
National Horseman's Benevolent and Protective Association
National Thoroughbred Racing Association
National Walking Horse Association
North American Riding Academy
Paso Fino Horse Association
Racetrack Chaplaincy of America
Rocky Mountain Horse Association
The Jockey Club
The Jockey's Guild
The Pyramid Society
The Race for Education
Thoroughbred Owners and Breeders Association
United Professional Horsemen's Association
United States Dressage Federation

United States Equestrian Federation, Inc.
United States Hunter Jumper Association
United States Polo Association
United States Pony Clubs, Inc.

Source: Commerce Lexington Economic Development, 2019; kyhorsepark.com, Kentucky Horse Park, National Horse Center.

Appendix E - A List of Select Animal Science, AgTech, and Equine R&D Companies in the Bluegrass

Company	County
Alltech	Jessamine
Biological Prospects	Fayette
Blue Equine Pharmaceuticals, Inc.	Fayette
Bluegrass Advanced Materials, LLC	Fayette
Doc Lane's Veterinary Pharmacy	Fayette
DSM Nutritional Products LLC	Clark
Equine Diagnostic Solutions LLC	Fayette
Equinext, LLC	Fayette
Gibson Laboratories LLC	Fayette
Hippo Manager Veterinary Software, Inc.	Fayette
Kinetic Technologies, LLC	Fayette
LGC Ltd	Fayette
MosquitoMate, Inc.	Fayette
Nano-Mite Technologies, LLC	Fayette
Naprogenix, Inc.	Fayette
Neogen Corporation	Fayette
OdoRcept LLC	Woodford
ParaTechs Corporation	Fayette
RedLeaf Biologics, Inc.	Fayette
Space Tango, Inc.	Fayette
Stellar Plants	Fayette
TEC Biosciences Inc.	Fayette
Thrive Animal Health (aka Equithrive)	Fayette
Veterinary Data Services, Inc.	Fayette
Water Warriors Inc.	Fayette

Source: SelectKentucky.com, KY Cabinet for Economic Development, NAICS 541711-2; Commerce Lexington Economic Development, 2019; PitchBook.com, PitchBook, Accessed Mar. 2020.