

# 2019 YEAR IN REVIEW

**\$417.1M**

**IN RESEARCH AWARDS**

**\$241.8M**

**IN FEDERAL GRANTS**

**\$159.3M**

**IN NIH GRANTS**

**1,670**

**ACTIVE RESEARCH AWARDS**

**68 ACTIVE STARTUPS RELATED TO UK TECHNOLOGY**

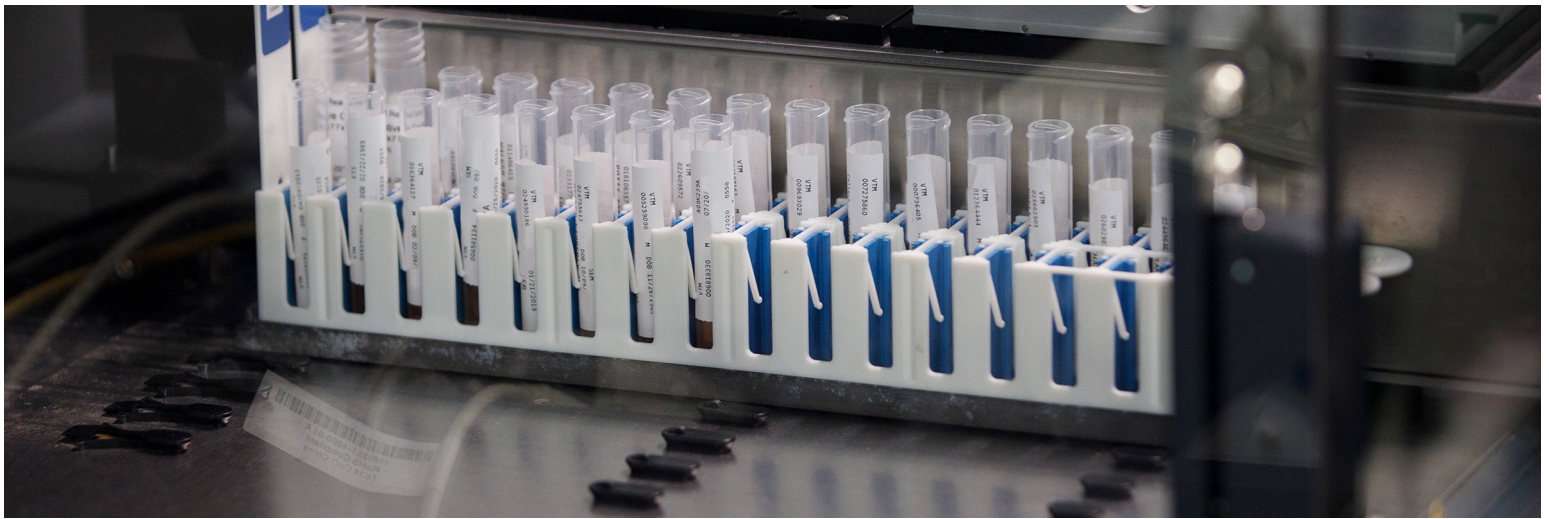
**618 WORLDWIDE PATENT ASSETS, 26 NEW PATENTS**

In 2019, UK was awarded the largest grant in its history: the \$87 million HEALing Communities Study (Helping to End Addiction Long-term). The goal of this NIH-funded project is to reduce opioid overdose deaths by 40% in three years. Twenty researchers from seven UK colleges are partnering with state cabinets and boards, district and local health departments and treatment centers to reach 16 Kentucky counties.

The Kentucky NSF EPSCoR awarded UK, University of Louisville and six other institutions across the state a five-year, \$24 million grant to support the fundamental science needed to advance next-generation manufacturing technologies, flexible electronics and robotics, and support development of a STEM-literate workforce.

In a \$6-million NSF-funded project, an interdisciplinary research group at UK, Clemson University, and the University of Idaho is examining ways to overcome a major agricultural production barrier — when a grain stem snaps before harvesting — to improve grain yields. UK principal investigator Seth DeBolt (College of Agriculture, Food and Environment) is taking a biomechanical approach to this problem called stalk lodging.

With a \$3.5 million National Institute of General Medical Sciences (NIGMS) grant, UK (the lead academic institution through the Office of Technology Commercialization), regional partners and XLerateHealth created a regional biomedical technology accelerator hub. The hub is one of four NIGMS-funded hubs to help IDeA states accelerate early-stage biomedical technology from laboratory to market.



UK lab processing tests for the COVID-19 virus on March 25, 2020.

## UK RESEARCH AND COVID-19

- UK Research created websites, policies and procedures to respond to the pandemic.
- Laboratories across campus donated gloves, masks and other forms of Personal Protective Equipment (PPE) to ensure safety of UK HealthCare employees.
- UK Research stood up three COVID-19 Unified Research Expert (CURE) Alliances to support COVID-19 research by facilitating research on the pandemic across disciplines, developing projects towards federal funding opportunities, and providing financial support for pilot projects, reagents and resources.
  - Biomedical Research (led by Becky Dutch, College of Medicine)
  - Materials and Methods (led by Brad Berron, College of Engineering)
  - Social Sciences (led by Julie Cerel, College of Social Work)
- Research projects:
  - A multi-arm clinical trial (led by Drs. Susanne Arnold, Markey Cancer Center, and Zack Porterfield, Microbiology/Infectious Disease) will determine which interventions, administered soon after diagnosis, can prevent the need for hospitalization and more importantly, reduce the stay in the ICU.
  - The Serology Working Group under CURE Healthcare Alliance are working on products under development (to serve as back-ups for Clinical Lab Assays) including an active virus PCR test and antibody (IgG, IgM) ELISA.
  - The Colleges of Agriculture, Food and Environment, Engineering, Arts & Sciences, Pharmacy, and Procurement collaborated to produce 600 two-liter bottles of hand sanitizer were provided to UK HealthCare. The Beam Institute will produce another 700 gallons in coming weeks, and they created a how-to video and guide for distillers as outreach.
  - Researchers in the College of Engineering received a National Science Foundation RAPID award to develop novel masks that trap and inactivate SARS-CoV-2 virus.
  - The College of Design is using 3-D printing to create face shields.