INNOVATE
UNIVERSITY OF KENTUCKY RESEARCH

ANNUAL REPORT
Fiscal Years 2021-2024

CONTENTS

CONNECT

INNOVATION INSIDER NEWSLETTER

The UK Innovate newsletter, Innovation Insider, keeps readers informed about corporate partnerships, innovation training, social innovation, technology commercialization, startups, regional and national programs, grant activity, and events. It provides opportunities to stay connected with the latest news and information.

SUBSCRIBE NOW

SOCIAL MEDIA

Social media is an easy way to stay connected with UK Innovate. Follow us on LinkedIn and Twitter. Watch informational videos on YouTube.

linkedin.com/company/ukyinnovate

twitter.com/uky_innovate

youtube.com/@uky_innovate

WEBINARS

OTC and UK Innovate host webinars to keep our community educated on industry resources and programs, technology commercialization, social innovation while providing an opportunity to hear from experts on topics.

WEBSITE

research.uky.edu/ukinnovate

DEAR UK INNOVATION COMMUNITY,

The years 2021, 2022, 2023 and 2024 were incredibly challenging yet productive for UK. They were a time of change and continued growth. At the outset, UK Innovate did not exist. It was an idea in the minds of UK leadership at the beginning of fiscal year 2021. As the year progressed, expanding UK's innovation and entrepreneurship capabilities became a focal point for discussion and a key strategy for the future. The result was the launch of UK Innovate: an investment in a broader suite of services and programs to support UK innovators and the university's innovation and entrepreneurship ecosystem, which are essential to the future of both UK and Kentucky.

We saw momentum building within the Office of Technology Commercialization (OTC) and recognized the need to support faculty with innovation training, expand and diversify the innovators we serve with resources for social impact innovations, and strengthen our ability to collaborate with industry in alignment with the state's economic strategy. In response, we launched UK Innovation Training, a new Social Innovation team and UK Innovation Connect to foster research and industry partnerships. As the flagship, land-grant research institution of the Commonwealth of Kentucky, this growth represents an investment in that responsibility.

The pandemic affected research activity—first spiking, then slowing as health protocols necessitated a temporary pause. But research rebounded, bringing renewed energy and appreciation for its importance. At the same time, the spotlight on commercialization became brighter than ever. Our work remains critical to ensuring that life-improving and life-saving discoveries across our campus reach the communities that need them.

The data, success stories, program highlights and growth detailed in this annual report reflect a dedicated team working every day to bring UK research discoveries to market and to lead the developing innovation and entrepreneurship ecosystem of Lexington, Kentucky and the region. It also tells the story of a team committed to expanding access to entrepreneurship support through programs like Social Innovation, Kentucky Commercialization Ventures and Innovation Training.

Enormous opportunities lie ahead for UK and the Kentucky innovation ecosystem. UK Innovate is here to seize them through commercialization, partnerships, social impact and entrepreneurship support.

Sincerely,

Ian D. McClure
Associate Vice President for Research, Innovation and Economic Impact
Executive Director, UK Innovate

"As the state's flagship, land-grant institution, the University of Kentucky exists to advance the Commonwealth. We do that by preparing the next generation of leaders and thinkers to take on today's toughest challenges and lead tomorrow's knowledge-based economy."

Eli Capilouto,
University of Kentucky President

FOUR YEARS OF ACCOMPLISHMENTS

FY 2021

JULY 2020
OTC supports partnership between UK, Jackson State University and XLerateHealth to help HBCUs Commercialize Ideas

JULY 2020
OTC participated in Regional Innovations for Startups and Entrepreneurs (RISE) program for the third year

JANUARY 2021
UK, Jackson State University and XLerateHealth's ENRICH program recognized in Forbes

JUNE 2021
UK among Top 100 Worldwide Universities for Patents Granted

AUGUST 2021
U.S. Innovation Competitiveness Summit

AUGUST 2021
UK Innovate founding partner of KY Inno

JULY 2020
OTC partners with Launch Blue to enhance UKAccel Program

AUGUST 2020
UK joins Promotion & Tenure – Innovation and Entrepreneurship (PTIE) Coalition

SEPTEMBER 2020
OTC received $600,000 EDA Grant for Launch Blue

FEBRUARY 2021
KCV and ENRICH received "Visionary Awards" for Inclusive Innovation

JUNE 2021
UK Innovate launched

FY 2022

SEPTEMBER 2021
Kentucky Intellectual Property Alliance launched

MARCH 2022
UK Innovate launches Innovation Connect

JANUARY 2022
UK, Partners named Build Back Better Regional Finalists

AUGUST 2022
NIH Funds UK, XLerateHealth Partnership

AUGUST 2022
NSF selected UK and 8 regional universities to form new innovation hub

AUGUST 2022
UK Innovate received EDA University Center grant

FY 2023

NOVEMBER 2022
UK a strategic partner in new MI2

APRIL 2023
iCorps grant

MAY 2023
NSF Engines grant

OCTOBER 2022
UK Innovate launched Innovation Training Micro-Certification program

DECEMBER 2022
IN-PART names UK technology one of the 23 top innovation for 2023, identified by the global R&D community

APRIL 2023
Inaugural Kentucky Innovator Challenge

JUNE 2023
Co-partnered with other Kentucky organizations at BIO in Boston

FY 2024

OCTOBER 2023
UK, led by OTC, and partners awarded $12M to advance biomedical innovation and entrepreneurship

JANUARY 2024
UK, led by OTC, partners with George Mason University in First-Of-Its-Kind Award from NSF

JANUARY 2024
OneUK Launches

MARCH 2024
UK, led by UK Innovate, selected as member of ARPA-H Investor Catalyst Hub network

DECEMBER 2023
Invest Blue created through 'Build to Scale' grant awarded to UK, led by Launch Blue, and partners to support Kentucky startups and diversify investors

FEBRUARY 2024
UK Among Top 100 Worldwide Universities Granted U.S. Patents in 2023

APRIL 2024
Estate Whiskey Alliance Launches

JUNE 2024
UK among top 100 U.S. universities granted utility patents in 2023

GC GAME CHANGE

NSF Engine Development Award

In May 2023, the University of Kentucky, with partners in Kentucky and Tennessee, was awarded $1 million from the U.S. National Science Foundation's Regional Innovation Engines (NSF Engines) program. Advancing Carbon-Centric Circular Economy Technologies for Advanced Manufacturing (KY, TN), is led by a coalition called Generate Advanced Manufacturing Excellence for Change (GAME Change).

Ian McClure, associate vice president for research, innovation and economic impact and executive director of UK Innovate, is the principal investigator on the award with UK as the lead organization.

Working with 13 core partners and 53 collaborating partners, GAME Change focuses on creating a diverse innovation and talent development hub to strengthen U.S. competitiveness in next-generation manufacturing and supply chain logistics. It also aims to support closed-cycle manufacturing, reducing waste and increasing efficiencies for self-sustaining economic growth.

GAME Change hosted an inaugural Summit & Workshop at Dale Hollow, Tennessee, in August 2023. This was followed by events in Knoxville, Tennessee, in March 2024, Louisville, Kentucky, in October 2024, and Nashville, Tennessee, in February 2025.

Learn more about GAME Change at **gamechangeengine.org**

TEAM KENTUCKY
CABINET FOR ECONOMIC DEVELOPMENT

Launch Tennessee

TENNESSEE STATE UNIVERSITY

KSTC
KENTUCKY SCIENCE & TECHNOLOGY CORPORATION

tbr | THE COLLEGE SYSTEM of TENNESSEE

UNIVERSITY OF LOUISVILLE.

THE UNIVERSITY OF TENNESSEE CHATTANOOGA

VANDERBILT UNIVERSITY

KENTUCKY COMMUNITY & TECHNICAL COLLEGE SYSTEM

OAK RIDGE National Laboratory

University of Kentucky

THE UNIVERSITY OF TENNESSEE KNOXVILLE

WKU

National Science Foundation

NSF ENGINES
DEVELOPMENT AWARDS

Research reported on this website was supported by the National Science Foundation under Award #2302947. The opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

2021-2024
FISCAL YEARS IN REVIEW

FISCAL YEAR **2024**

Innovation Disclosures Submitted	**142**
Patent Applications Filed	**162**
Patents Issued	**43**
Agreements Processed	**1,068**
• Collaborative Development Agreements	**9**
• Data Use Agreements	**139**
• Material Transfer Agreements	**568**
• Non-Disclosure Agreements	**337**
• Other	**15**
New Licenses and Options Executed	**66**
Distributed to Innovators Since 2010	**$7.7million**
Distributed to Colleges and Departments Since 2010	**$20 million**
Gross Royalty Income	**$4.3 million**

FISCAL YEAR **2023**

UK Innovation Connect Corporate Engagements	**429**
Innovation Training Workshop Registrations	**253**
Innovations Disclosed	**114**
Primary Social Innovation Disclosures Submitted	**23**
Patent Applications Filed	**161**
Patents Issued	**32**
Agreements Executed (excluding Licenses & Options)	**1,230**
Agreements Licenses and Options Executed	**37**
New Startups Formed	**5**
Gross Royalty Income Received	**$807,906**
Distributed to Inventors Since 2010	**$6.7 million**
Distributed to Colleges and Departments Since 2010	**$17.9 million**

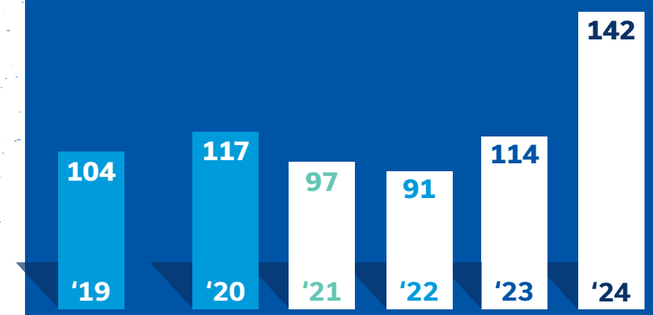
FISCAL YEAR **2022**

Innovations Disclosed	**91**
Primary Social Innovation Disclosures Submitted	**8**
Patent Applications Filed	**152**
Patents Issued	**33**
Agreements Executed (excluding Licenses & Options)	**1,237**
Agreements Licenses and Options Executed	**30**
New Startups Formed	**4**
Gross Royalty Income Received	**$1,795,014**
Distributed to Inventors Since 2010	**$6.6 million**
Distributed to Colleges and Departments Since 2010	**$17.4 million**

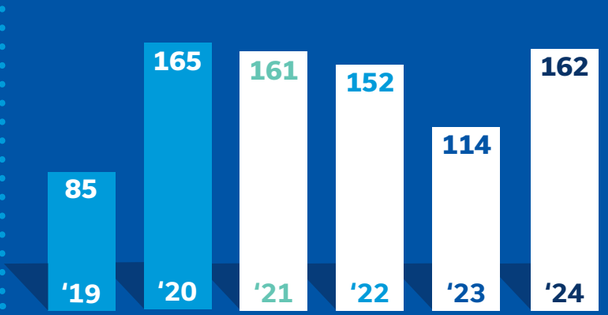
FISCAL YEAR **2021**

Innovations Disclosed	**97**
Patent Applications Filed	**161**
Patents Issued	**23**
Agreements Executed (excluding Licenses & Options)	**1,177**
Agreements Licenses and Options Executed	**29**
New Startups Formed	**6**
Gross Royalty Income Received	**$2,654,718**
Distributed to Inventors Since 2010	**$6.3 million**
Distributed to Colleges and Departments Since 2010	**$17.0 million**

INNOVATIONS DISCLOSED



PATENT APPLICATIONS FILED



INNOVATE
UNIVERSITY OF KENTUCKY RESEARCH

THE STORY

In 2021, the Office of Technology Commercialization (OTC) reached record-high levels, significantly increasing annual inventions (100%), patents (400%), licenses (350%) and startups (50%) compared with 2016 data. Driven by OTC's growth and a focus on fostering UK's innovation culture, UK Innovate was launched in July 2021 under the Office of the Vice President for Research to promote innovative and entrepreneurial activity among UK faculty, staff, students and the community.

UK Innovate was established to sustain the university's momentum in innovation and entrepreneurship while fostering economic and societal impact. Through the initiative services expanded to include corporate partnerships, innovation training and social innovation.

Corporate Partnerships

Under corporate partnerships, Innovation Connect provides dedicated resources to support industry, nonprofit and private-sector partnerships for research, innovation and economic development.

Innovation Training

Innovation and Entrepreneurial Training manages programs offering translational research, product development and entrepreneurship training, coaching and mentorship to faculty, staff and students at UK.

ENRICH Powered by XLerator Network

XLerateHealth

KCV Kentucky Commercialization Ventures

JSU 1877 JACKSON STATE UNIVERSITY

Patent Palooza! Celebrating Innovation

Technology Commercialization

OTC collaborates with innovators to strategically assess, protect and license early-stage technologies and co-create new startups.

Social Innovation

At the intersection of innovation, social entrepreneurship and transformational change, UK Innovate's social innovation initiatives scale ideas and find solutions to create impact from research to discovery.

INNOVATION CONNECT

Established in March 2022, Innovation Connect serves a bridge between UK and external partners. Innovation Connect fosters collaborations between UK's research enterprise and industry, nonprofits and the private sector to drive innovation, research and economic development in Kentucky and beyond. Innovation Connect is a gateway to maximizing the potential of UK research.

For the UK community, Innovation Connect assists in navigating the complexities of industry engagement, whether exploring partnerships, identifying potential collaborators, launching a new collaboration or seeking support for an existing relationship. Innovation Connect also facilitates on-campus connections between researchers.

For industry partners, Innovation Connect provides access to UK's leading experts, clinicians, staff and students. Whether businesses are seeking specialized expertise, capstone projects, testing capabilities, research collaborations or clinical trials, Innovation Connect links the community to UK's groundbreaking research.

Innovation Connect services for UK faculty and staff:

- Collaborative research projects
- Connections to industry and nonprofit partners
- Consortium support
- Grant programs for translational research
- Research and innovation events

Innovation Connect services for corporate partners:

- Collaborative research projects
- Connections to UK faculty experts and researchers
- Consortium support
- Grant programs for translational research
- Research facility and equipment access
- Research and innovation events
- Strategic alliances
- Student class projects

The Innovation Connect team travels across Kentucky, meeting with corporate partners and hosting events on campus to establish and foster mutually beneficial relationships.

The team hosted the inaugural Kentucky Innovator Challenge on April 11, 2023, with more than 150 attendees. For more information, please see the Engagement section on page 29.

ESTATE WHISKY ALLIANCE™

The team launched the Estate Whiskey Alliance in April 2024 at the James B. Beam Institute for Kentucky Spirits conference. The global consortium aims to advance and promote the benefits of local sourcing and production sustainability.

Connect

research.uky.edu/uk-innovate/uk-innovation-connect

CONNECT NOW

Participants at the inaugural Kentucky Innovator Challenge in April 2023.

Kim Sayre, Ian McClure, George Ward and Landon Borders during a visit to GE Aviation.

Participants listening to industry present on their needs at the inaugural Kentucky Innovator Challenge.

Holly Symonds Clark, Chelsea Ex-Lubeskie and Landon Borders representing the University of Kentucky and UK Innovate at BIO International.

Walter Mattox, founder and CEO, Gray Solutions presenting at Kentucky Innovator Challenge 2023 with their robotic dog "Spot."

INNOVATION TRAINING

Innovation and Entrepreneurial Training is a key focus of UK Innovate, providing faculty and staff with training to prepare for pre-disclosure research and better understand startup creation. The team manages select ongoing innovation and product development grants and programs led by UK and pursues new projects and strategic partnerships focused on innovation, translational research and entrepreneurship training, coaching and mentorship. These efforts support professional development and cultivate a culture of innovation at UK and throughout Kentucky.

Examples of these programs include the Kentucky Network for Innovation and Commercialization (KYNETIC), a National Institutes of Health (NIH) REACH program, and the XLerator Network, funded by the National Institute for General Medical Sciences (NIGMS).

Between fiscal years 2021 and 2023, UK Innovate developed and launched the Micro-certification program, which utilizes experiential design theory and mentorship programming to assist researchers in understanding their role in advancing science, commercialization and community impact.

Micro-certification objectives:

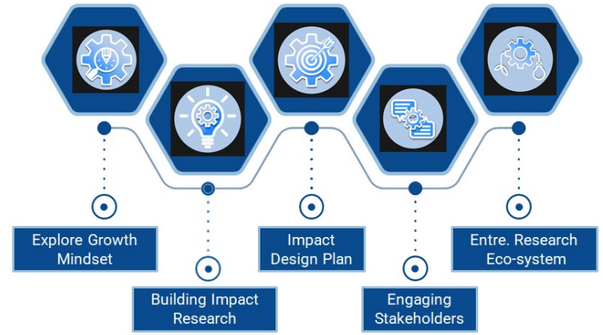
- Understand the evolving role of university researchers and their impact on the economy and society.
- Learn the design thinking process for innovation and research impact by tackling challenges from idea to validation.
- Apply design thinking methods to develop human-centered solutions for unmet societal or economic needs.

The micro-certification consists of five impact workshops and five implementation workshops, culminating in certification upon completion.

Innovation Training Workshop

IMPACT WORKSHOPS

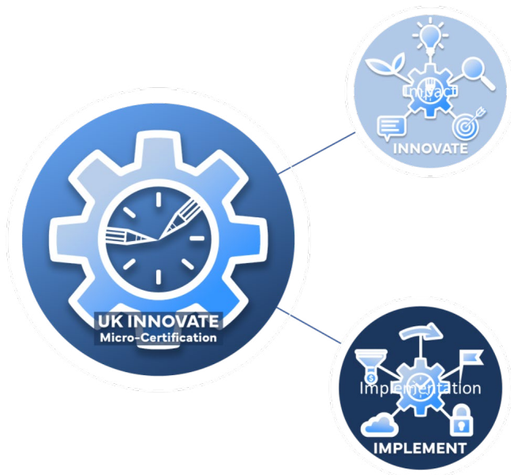
100. Explore the Growth Mindset
110. Building Impact Research
120. Impact Design Plan
130. Engaging Stakeholder
140. Entrepreneurial Research Eco-System



IMPLEMENTATION WORKSHOPS

150. The Idea to Enterprise Strategy
160. Protecting Your Idea, Before and After Validation
170. Commercialization in Education, Social Sciences, Humanities and Arts
180. Who's Writing the Checks?
200. Data in Today and Tomorrow's Companies

MICRO-CERTIFICATION



OFFICE OF TECHNOLOGY COMMERCIALIZATION

Over the last four fiscal years, the Office of Technology Commercialization (OTC) has implemented changes and expanded its services.

In April 2021, Taunya Phillips was named director of OTC, and the office was restructured. The new structure includes Matt Upton, senior associate director, leading the Intellectual Property Development Team; Eric Hartman, senior associate director, leading the Commercialization and Launch Blue Teams; Serenity Wright, associate director, leading the Social Innovation Team; and Eric Castlen, senior associate director, leading the Contracts Team.

During this time, the OTC has

RECIEVED **442** **INNOVATION DISCLOSURES** with **79** **BEING SOCIAL INNOVATIONS**

INTELLECTUAL PROPERTY APPLICATIONS FILED **662**

$17.9 MILLION in income distributed to colleges & departments

received over **$5 MILLION** in gross royalty income

152 **Licenses & Options Executed** and **4,668** other agreements (MTAs, NDA, DUAs, etc.)

$6.7 MILLION in income distributed to inventors

23 new startups from licensing of University of Kentucky technologies

The past **FOUR YEARS** have witnessed constant activity, including collaborations with UK researchers, forming partnerships and planning and executing events.

At the start of fiscal year 2021, OTC partnered with XLerateHealth and Jackson State University (JSU), with support from the XLerator Network, to launch Engaging Researchers and Innovators for Commercialization at HBCUs (EnRICH).

XLerateHealth

JSU 1877 JACKSON STATE UNIVERSITY®

In October 2020, OTC was awarded a three-year, **$600,000** grant from the Economic Development Administration (EDA) Build to Scale Program, funding the expansion of Launch Blue. In the early FY 2021 Launch Blue assumed management of the UKAccel Program to create a more robust offering. Under Launch Blue's leadership, the program grew and was renamed UAccel in FY 2022.

OTC was awarded a **THREE-YEAR $600,000** grant from the Economic Development Administration

ENRICH Powered by XLeratorNetwork

KCV Kentucky Commercialization Ventures

OTC is a founding partner in EnRICH and Kentucky Commercialization Ventures (KCV). Each received a **$25,000** prize in the Lab-to-Market (L2M) Inclusive Innovation Ecosystem Prize Competition in the "Visionary" category in FY 2022. KCV, along with the XLerator Network—OTC's Southeast IDeA Hub funded by the National Institute of General Medical Sciences (NIGMS)—also won prizes from the U.S. Small Business Administration (SBA) that year. KCV received a **$50,000** Growth Accelerator Fund Competition award, and the XLerator Network received a **$150,000** Small Business Innovation Research Catalyst prize.

In June 2021, the National Academy of Inventors (NAI) and the Intellectual Property Owners Association (IPO) named UK a Top 100 Worldwide University for Patents Granted. A member institution of NAI, UK ranked 96th with 29 U.S. utility patents granted in 2020.

TOP 100 Worldwide University for Patents Granted in June 2021

UK technology named one of the 23 TOP innovations for 2023 as identified by the global R&D community

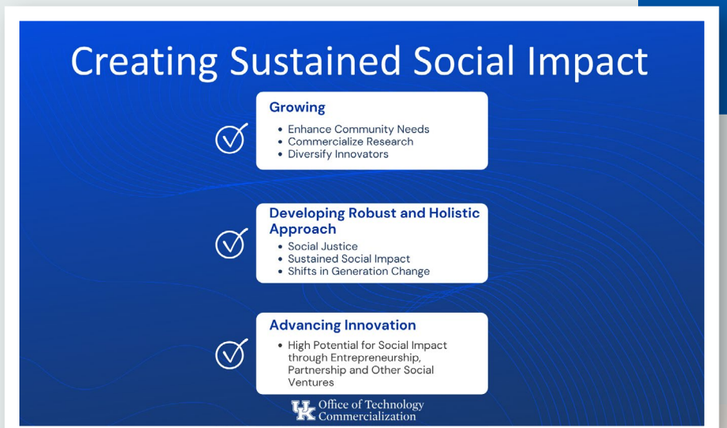
IN-PART, which connects academia and industry, named UK technology one of the top 23 innovations for 2023 as identified by the global R&D community. The technology, titled "Generation of Hydrogen by Thermal Hydrolysis of Sodium Borohydrides," was developed by Hyun-Tae Hwang and Geo-Jong Kim from the Department of Chemical and Materials Engineering in the College of Engineering.

OTC hosts its signature event Patent Palooza! each fall to recognize and celebrate UK innovators. It also hosts the annual UK Women Innovators Network event in March during Women's History Month.

Patent Palooza! Celebrating Innovation

SOCIAL INNOVATION

Activities, initiatives and action for sustained social impact.



SUBMITTED

56

Primary Social Innovation Disclosures

FY 2024

Examples of social innovation:
Apps, Aquaponics, Clothing Lines, Comic Books, Curriculum, Farm to Table, Games, Programs, Regenerative Farming, Sustainable Energy, Training, Workshops

research.uky.edu/office-technology-commercialization/social-innovation

LEARN MORE

INNOVATION SPOTLIGHTS:

Villainous Vape

INNOVATORS: Melinda Ickes, Ph.D. is Director of Graduate Studies and Associate Professor in the Department of Kinesiology and Health Promotion in the College of Education and Joel Thompson, Ph.D. is the Research Development Director and Pilot Funding Project Manager in the Center for Clinical and Translational Science.

Ickes and Thompson created the Villainous Vape comic book to communicate research on e-cigarette use among youth and emerging adults. The comic book follows a college student dealing with their dependence on e-cigarettes. It provides a practical and empowering addition to youth e-cigarette education and empowerment.

BRIEF Health Lessons

INNOVATORS: Charles Carlson, Ph.D., retired from Psychology in the College of Arts and Sciences, Audrey Darville, co-director of the Tobacco Prevention & Treatment Division with the BREATHE research team in the College of Nursing, Angela Grubbs, DNP, Assistant Professor in the College of Nursing, Craig S. Miller, DMD, faculty in College of Medicine (formerly College of Dentistry), and Julie Plasencia, Ph.D., RDN, LD, Associate Professor and Director of the Didactic Program, Dietetics and Human Nutrition in the Martin-Gatton College of Agriculture Food and Environment.

BRIEF (Brief, Regular, Integrated, Energetic, and Fun) Health Lessons is an engaging tool developed for third-grade children. The lessons aim to provide a stimulating experience by offering a series of fun, integrative message cards for teachers to use. Most cards contain a health message, a question and an activity that can be completed in about five minutes.

Launch Blue

Launch Blue is dedicated to growing Kentucky's innovation and entrepreneurial ecosystem. The initiative partners with stakeholders across the Commonwealth and beyond to foster an environment where emerging technologies and social solutions reach their full potential, advancing UK's mission to strengthen Kentucky's innovation economy.

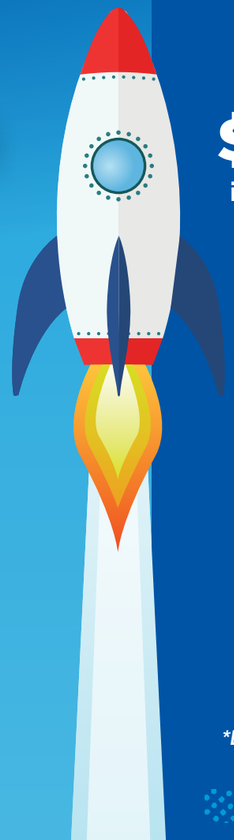
UAccel QuickStart & I-Corps Program

UAccel is a virtual 12-week, two-phase program offering professional development and experiential learning for innovators in higher education and early-stage startup founders.

Phase I: UAccel QuickStart introduces lean startup methods to help innovators identify the best commercialization pathway for their technology.

Phase II: I-Corps builds on UAccel QuickStart, preparing innovators for federal grants, startup formation or the National I-Corps Program.

The U.S. National Science Foundation's Innovation Corps (I-Corps™) program is an immersive entrepreneurial training initiative transforming invention into impact. UK is a member of the NSF Mid-South I-Corps Hub.



97
Teams served in UAccel

$14 million
in Grant funding raised by UAccel teams*

9
Patents issued to UAccel teams*

12
Licenses executed by UAccel teams

8
UAccel teams accepted into National I-Corps

**Data gathered Oct. 2023–Sept. 2024 for FY 2024*

"Prior to UAccel, our team had no experience with customer discovery, nor did we understand how our technology fits within the broader commercial landscape. The program provided us with a fantastic opportunity to learn and put to practice new skills that we continue to build on as we decide on the best path forward for our technology."

Chad Risko, Ph.D.
Associate Professor of Chemistry,
College of Arts and Sciences

Pre-Seed Accelerator Program:

The Pre-Seed Accelerator is a virtual 12-week program that trains startup founders in lean startup practices while helping them develop a scalable, repeatable business model. Startups set weekly goals to gain stage-appropriate traction and build their investor pipeline.

25
Startups headquartered in Kentucky

8
Startups headquartered outside Kentucky:
California, Indiana, Illinois, Massachusetts, Michigan, New Jersey, New York & North Carolina

26
Startups served in pre-seed accelerator

15
Startups raised pre-seed capital*

31
Startups raised seed capital

14
Startups are post revenue

0
Startups transitions from UAccel to pre-seed accelerator

**Data gathered Oct. 2023–Sept. 2024 for FY 2024*

"Launch Blue has been the most helpful professional experience I've had in many years. There's a very personal, human touch with the coaches and mentors involved with Launch Blue. A culture has been cultivated where everybody wants everybody to win, even though there are multiple groups and investors in this tiny startup ecosystem here in Kentucky. #ItsNotBinary, everyone wants everyone to win."

Mandy Ralston
CEO and Founder,
NonBinary Solutions

Launch Blue Ambassador Program

Launch Blue's Ambassador Program provides real-world career preparation in startups, higher education, tech writing, commercialization, finance, venture capital and angel investing. Ambassadors gain hands-on experience in commercialization, investment, marketing and communications. Ambassadors build confidence and highly desirable skills, preparing them for successful careers.

Launch Blue has engaged 15 undergraduate students in the Ambassador Program.

Connect with Launch Blue:

Email: x@launchblue.org
Website: LaunchBlue.org

Social Media:

linkedin.com/company/launch-blue
@launchblueky
@launchblueky
/LaunchBlue

TECHNOLOGY SPOTLIGHTS

FY 2021

Apple Watch App System to Monitor Bone Marrow Transplant Patients

INNOVATORS:
MING-YUAN **CHIH,** College of Health Sciences
GERHARD **HILDEBRANDT,** College of Medicine
YONGWOOK **SONG,** Center for Visualization & Virtual Environments

This mobile and wearable system supports bone marrow transplant patients in their recovery journey by promoting physical activity, improving communication with providers and boosting motivation for recovery. The app provides key services addressing patients' most pressing needs and filling a gap in the market.

IR 2556: Dual-Color CsPbBr3 Nanocrystals Prepared by Water

INNOVATORS:
XIAOBING **TANG,** Stanley and Karen Pigman College of Engineering
FUQIAN **YANG,** Stanley and Karen Pigman College of Engineering

This technology provides a sustainable method to produce all-inorganic CsPbBr3 perovskite nanocrystals (PeNCs) on a large scale by replacing toxic organic solvents with deionized water. The process, which uses ultrasonication at room temperature instead of high temperatures, enhances optical stability while eliminating pollutants. This innovation advances the sustainability and scalability of perovskite nanocrystals.

FY 2022

IR 2654: Zafirlukast Treatment for Cancer

INNOVATORS:
SYLVIE **GARNEAU-TSODIKOVA,** College of Pharmacy

Zafirlukast compounds have been identified as dual inhibitors of arterial and venous thrombosis, specifically targeting thiol isomerases like PDI, ERp5, ERp57 and ERp72. This novel treatment combats cancer-induced thrombosis without increasing bleeding risk and may also serve as an antineoplastic or chemotherapeutic agent. It offers a comprehensive solution to improve cancer treatment by reducing medication regimens and side effects.

IR 2638: CNS Modulators as COVID Therapeutics

INNOVATORS:
LINDA P. **DWOSKIN,** College of Pharmacy
JILL REBECCA **TURNER ORTINSKI,** College of Pharmacy

UK researchers discovered that NMDA receptor antagonists, including ifenprodil and memantine, block respiratory depression and prevent neuropathology and morbidity caused by SARS-CoV-2 infection. These neuroprotective drugs may significantly reduce mortality and morbidity when repurposed as COVID-19 treatments.

FY 2023

IR 2329 & 2648: Silicone Based Human-Like Artificial Skin with Instructional Videos

INNOVATORS:
DESHANA **COLLETT,** College of Health Sciences
SAMUEL **POWDRILL,** College of Health Sciences

This innovation involves a layering method to create a silicone-based, human-like artificial skin and muscle simulation model. It supports a variety of suture techniques, intramuscular and subcutaneous injections, abscess creation and skin flap manipulation for wound closure training. The model mimics real skin and tissue response, with customizable hardness levels. Instructional videos supplement the model, providing guidance on wound closure techniques.

IR 2740, 2752 and 2759: 3D Microfluidic Intracellular Delivery Device

INNOVATORS:
GUIGEN **ZHANG,** Stanley and Karen Pigman College of Engineering
SHENG **TONG,** Stanley and Karen Pigman College of Engineering

This 3D microfluidic transfection device provides a high-throughput, clog-free platform capable of delivering up to 100 million cells per minute per channel with consistent results at the individual cell level. The technology offers a gentler, more efficient approach to transfection, eliminating manual pipetting steps and reducing costs. By enabling scalable and compliant cell therapy production, it supports advancements in cancer treatment and other genetic, metabolic and infectious diseases.

FY 2024

IR 2750 The Graham Test

INNOVATORS:
MICHAELA **KEENER,** College of Health Sciences
KIMBERLY **TURNLIN,** College of Public Health

The Graham Test is a portable hardware system designed for sports and occupations that require balance and quick decision-making. Using a wearable interactive sensor, it accurately measures balance and reaction time. Its sensitivity, reliability and user-friendly design make it an effective tool for concussion assessment, helping individuals safely return to activities requiring these essential skills.

IR 2526 RNAi for Control of Japanese Beetle

INNOVATORS:
RAMESH **KUMAR DHADAPANI,** Martin-Gatton College of Agriculture, Food and Environment
Subba Reddy Palli, Martin-Gatton College of Agriculture, Food and Environment

This technology uses RNA interference (RNAi) to control Japanese beetle infestations by silencing targeted genes, preventing feeding and ultimately killing the insect. Applied to American linden trees or rose shrubs, this approach specifically targets Japanese beetles without harming other organisms, providing an environmentally friendly pest control solution.

NAI FELLOWS FY 2021-2023

"The NAI Fellows Program was established to highlight academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society. Election to NAI Fellow status is the highest professional distinction accorded solely to academic inventors."

– National Academy of Inventors website

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2019
KUNLEI **LIU**
College of Engineering
(formerly Center for Applied Energy Research when award was received)

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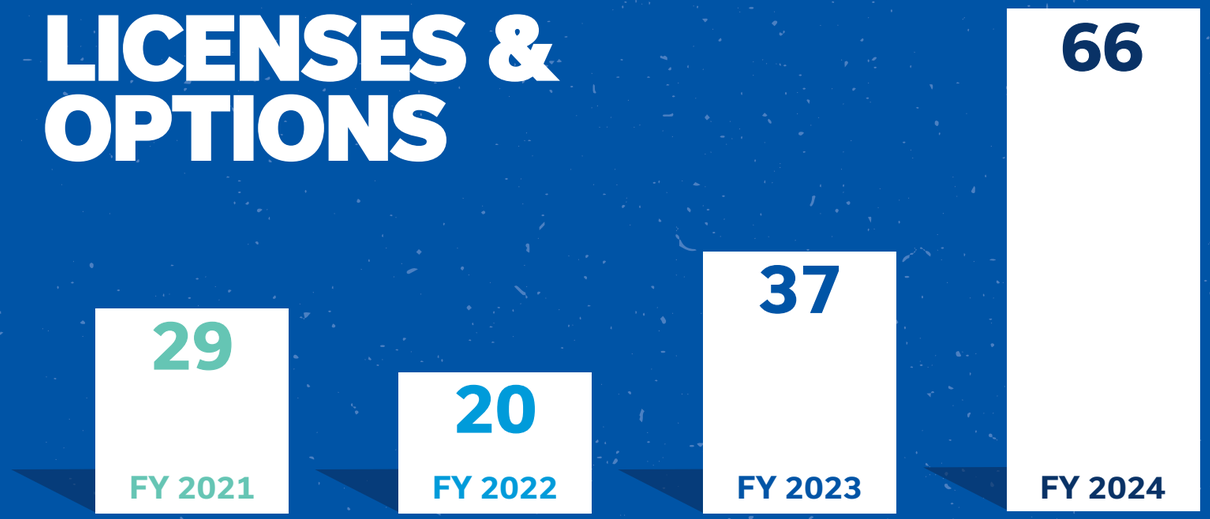
College of Pharmacy

2022
LINDA **DWOSKIN**
College of Pharmacy

2022
CHANG-GUO **ZHAN**
College of Pharmacy

2024
DIBAKAR **BHATTACHARYYA**
College of Engineering

LICENSES & OPTIONS



Licenses and Options for FY 2021

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Do-Min Lee
Na-Re Lee
Wooin Lee
Zach Miller
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AVA Surgical Technologies, LLC
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Guoqiang Yu

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Fang Zheng

VivaMed Stimulant Solutions, LLC
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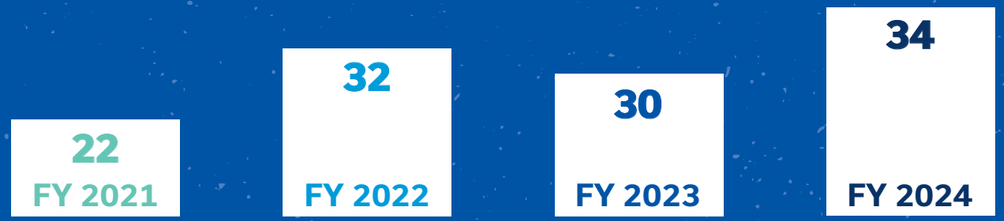


FY 2021 (22 issued)

10,702,826 - Method and apparatus for increasing mass transfer in aqueous gas adsorption processes
Zhen Fan, Kunlei Liu, Joshuah Stolaroff, Leland Widger

10,723,859 - Lignin valorization in ionic liquids and deep eutectic solvent via catalysis and biocatalysis
Lalitendu Das, Enshi Liu, Jian Shi, Joseph S. Stevens

10,738,328 - Method and system for terpene production platforms in yeast
Joseph Chappell, Wu Shuiqin, Xun Zhuang

10,755,146 - Network architecture for generating a labeled overhead image
Nathan Jacobs, Scott Workman

10,772,940 - Cocaine hydrolase-FC fusion proteins for cocaine and methods for utilizing the same
Hsin-Hsiung Tai, Chang-Guo Zhan, Fang Zheng

10,773,330 - Measurement of three-dimensional welding torch orientation for manual arc welding process
YuMing Zhang

10,781,446 - RNA nanoparticle for treatment of gastric cancer
Daxiang Cui, Peixuan Guo, Bing Liu, Fei Pan, Dan Shu, Yi Shu, Chunlei Zhang

10,788,426 - Detection of hydroperoxides using chemically-stimulated luminescence from structured compound semiconductors
William L. Boatright

10,793,450 - Potential of zero charge-based capacitive deionization
Xin Gao, James Landon, Kunlei Liu, Ayokunle Omosebi

10,794,830 - Detection of organic free radicals and reactive oxygen substances using chemically-stimulated luminescence from structured compound semiconductors
William L. Boatright

10,828,381
RNA nanoparticles and method of use thereof
Peixuan Guo, Hui Li, Wei Luo

10,842,422 - Compact low-cost fiberless diffuse speckle contrast flow-oximeter
Jeffrey Todd Hastings, Chong Huang, Guoqiang Yu

10,854,911 - 1,9,10-substituted phenothiazine derivatives with strained radical cations and use thereof
Matthew D. Casselman, Corrine F. Elliott, Subrahmanyam Modekrutti, Susan A. Odom, Chad Risko

10,864,212 - Compositions and methods for treating retinal degradation
Jayakrishna Ambati, Benjamin Fowler

10,868,534 - Adiabatic logic-in-memory architecture
S. Dinesh Kumar, Himanshu Thapliyal

10,875,890 - Peptide inhibitors targeting the Neisseria gonorrhoeae pivotal anaerobic respiration factor AniA
Konstantin Korotkov, Aleksandra E. Sikora

10,883,962 - Electrical double layer in nanopores for detection and identification of molecules and submolecular units
Samuel Bearden, Guigen Zhang

10,892,525 - Rechargeable batteries including high-voltage cathode and redox shuttle conferring overcharge protection
Corrine F. Elliott, Aman P. Kaur, Susan A. Odom

10,900,357 - Blowing curtain face ventilation system for extended cut mining using passive regulator
Todor P. Petrov, Andrzej M. Wala

10,954,201 - Two-electron donating phenothiazines and use thereof
Matthew D. Casselman, Aman P. Kaur, Susan A. Odom

10,975,412 - Method for designing compounds and compositions useful for targeting high stoichiometric complexes to treat conditions, including treatment of viruses, bacteria, and cancers having acquired drug resistance
Peixuan Guo, Dan Shu

11,021,760 - Fungal chromosome-end knockoff strategy
Mark L. Farman, Simona Florea, Christopher L. Schardl

FY 2022 (32 issued)

11,060,096 - RNA-based compositions and adjuvants for prophylactic and therapeutic treatment
Peixuan Guo, Daniel L. Jasinski, Emil F. Khisamutdinov, Hui Li

11,085,044 - miRNA for treatment of breast cancer
Peixuan Guo, Farzin Haque, Hui Li, Dan Shu, Yi Shu

11,094,933 - Polysiloxane binders
Yang-Tse Cheng, Susan A. Odom, Darius A. Shariaty

11,098,296 Mutants of cocaine esterase
Donald Landry, Chang-Guo Zhan

11,103,504 - Combination of a DNA condensation-inducing compound and an Eis inhibitor for antibiotic treatment
Sylvie Garneau-Tsodikova, Nicole Neeltje van der Wel

11,103,509 - Methods of treating pain and/or inflammatory disorders using lapatinib
Chang-Guo Zhan, Fang Zheng, Shuo Zhou, Ziyuan Zhou

11,105,815 - Compositions and methods for enhancing neuro-repair
Florin Despa, Larry B. Goldstein

11,123,341 - Butyrylcholinesterase inhibitors for treatment of opioid use disorder
Chang-Guo Zhan, Fang Zheng

11,123,711 - System and method for alcohol oxidation reaction of lignins
Mark Crocker, Justin K. Mobley, Yang (Vanessa) Song

11,136,666 - Ordered nanotubes on a two-dimensional substrate consisting of different material properties
Armin Ansary, Mathias J. Bolan, Mohsen Nasseri, Douglas R. Strachan

11,140,843 - Alteration of tobacco alkaloid content through modification of specific cytochrome P450 genes
Steven Bowen, Ralph Dewey, Lily Gavilano, Balazs Siminszky

11,149,282 - Systems and methods for the production of linear and branched-chain hydrocarbons
Joseph Chappell, Shuiqin Wu

11,155,643 - Glucan kinases and methods for processing starch using the same
Matthew S. Gentry, Craig W. Vander Kooi

11,155,897 - Low-cost selective precipitation circuit for recovery of rare earth elements from acide leachate of coal waste
Rick Q. Honaker, Wencai Zhang

11,180,867 - Continuous wet-spinning process for the fabrication of PEDOT:PSS fibers with high electrical conductivity, thermal conductivity and Young's modulus
Ruben Sarabia Riquelme

11,186,895 - Continuous solvent extraction process for generation of high grade rare earth oxides from leachates generated from coal sources
Alind Chandra, Rick Q. Honaker, Joshua Werner

11,202,589 - System and method for assessment of retinal and choroidal blood flow noninvasively using color amplification
Romulo J. Albuquerque, Nicholas Andrew Bell, Paras Vora

11,206,146 - Architecture for generating physically unclonable function response
Carson Labrado, Himanshu Thapliyal

11,207,614 - Single stage clarifier and mixing assembly
Joshua Werner

11,207,627 - Filter assembly and scrubber section for a continuous miner
Ashish Ranjan Kumar, Steven Schafrik, Oscar Velasquez, William Chad Wedding

11,207,634 - Apparatus and method for recovering an amine solvent from an acid gas stream
Bradley D. Irvin, Kunlei Liu, Amanda Warriner, Leland Widger

11,217,811 - Unique redox-active phenothiazine combinations with depressed melting points for increased solubility and method of use in energy storage and in redox flow batteries
Giorgio Baggi, Aman P. Kaur, Susan A. Odom

11,219,623 - Inflammasome inhibition for the treatment of Parkinson's disease, Alzheimer's disease and multiple sclerosis
Jayakrishna Ambati, Kameshwari Ambati, Benjamin Fowler

11,224,609 - Mithramycin derivatives having increased selectivity and anti-cancer activity
Joseph Eckenrode, Cai-Xia Hou, Markos Leggas, Anhisek Mandal, Prithiba Mitra, Jurgen Rohr, Oleg Vyacheslav Tsodikov

11,230,714 - Gene silencing kills emerald ash borer, an exotic, invasive tree-killing insect
Lynne K. Rieske-Kinney, Thais Barros Rodrigues

11,282,700 - Method for manufacturing perovskite-based devices in ambient air
Zhi David Chen, Feng Wang

11,293,031 - Alteration of tobacco alkaloid content through modification of specific cytochrome P450 genes
Steven Bowen, Ralph Dewey, Lily Gavilano, Balazs Siminszky

11,325,901 - Prostaglandin E synthase inhibitors and methods for utilizing the same
Kai Ding, Chang-Guo Zhan, Fang Zheng, Ziyuan Zhou

11,325,939 - RNA nanoparticles for brain tumor treatment
Carlo Croce, Peixuan Guo, Farzin Haque, Tae Jin Lee, Carlo Croce

11,326,138 - Cell culture device and methods of use thereof
Christine A. Trinkle, Soroosh Torabi, Ren Xu

11,338,232 - Efficient non-clogging inertial vortex type particle scrubber
Ashish Ranjan Kumar, Steven Schafrik, Allison Taylor

11,345,756 - CCR3 inhibition for ocular angiogenesis and macular degeneration
Jayakrishna Ambati

FY 2023 (30 issued)

11,413,326 - Compositions and methods for enhancing neuro-repair
Gregory J. Bix

11,414,614 - Production of fuel pellets
Thomas C. Keene, Darrell N. Taulbee

11,433,052 - 5-LOX and COX-2 inhibition for treatment in connection with blood-brain barrier dysfunction
Bjoern Bauer, Anika M. Hartz, Brent Scot Sokola

11,439,621 - Method of treating stimulant use disorder using a combination of topiramate and phentermine
Craig R. Rush

11,439,950 - Electrochemical cell, method and apparatus for capturing carbon dioxide from flue gas and decomposing nitrosamine compounds
Xin Gao, James Landon, Kunlei Liu, Jesse G. Thompson

11,447,405 - Apparatus to remove harmful chemical species from industrial wastewater using iron-based products
Keemia Abad, Xin Gao, James Landon, Kunlei Liu, Zilong Ma, Ayokunle Omosebi, Jesse G. Thompson

11,452,448 - System, device, and method for determination of intraocular pressure
E. Britt Brockman, Jeffrey Todd Hastings, Ziong Ma, Ingrid St. Omer, Ayokunle Omosebi John Wright

11,453,884 - Method and system for terpene production platforms in yeast
Joseph Chappell, Shuiqin Wu, Xun Zhuang

11,466,045 - Mithramycin oxime derivatives having increased selectivity and anti-cancer activity
Markos Leggas, Khaled Attla Shaaban Mahmoud, Jurgen Rohr, Jon S. Thorson, Jianjun Zhang, Yinan Zhang

11,473,070 - Increased polypeptide production yields of butyrylcholinesterase polypeptides for therapeutic use
Chang-Guo Zhan, Fang Zheng

11,484,860 - Apparatus and method for enhancing yield and transfer rate of a packed bed
Bradley D. Irvin, Kunlei Liu, Roger S. Perrone

11,504,335 - Increased cell retention in diseased site when cells encapsulated in gelatin methacrylate and polyethylene glycol diacrylate hydrogels
Ahmed K. Abdel-Latif, Bradley J. Berron, Anuhya Gottipati, Irina Kalashnikova

11,535,592 - Antimicrobial compounds, compositions, and method
Sylvie Garneau-Tsodikova, Octavio Alberto Gonzalez

11,553,715 - Synthesis and formulation of lignin derived compounds as treatment of plant diseases
Ryan M. Kalinoski, Jian Shi

11,560,334 - Concrete repair coating
Tristana Duvallet, Robert B. Jewell, Anne E. Oberlink, Thomas L. Robl

11,560,559 - Inducing production of full-length progranulin (GRN) from nucleotides including mutations containing a premature stop codon (PTC)
Haining Zhu

11,564,394 - Distorted gold (I)-phosphine complexes and methods for use as antifungal agents
Samuel G Awuah, Emily Kristen Dennis, Sylvie Garneau-Tsodikova, Jong Hyun Kim

11,571,394 - Modified-RNA nanoparticles for induction of RNA interference
Ramesh Kumar Dhandapani, Subba Reddy Palli

11,576,963 - Multivalent live-attenuated influenza vaccine for prevention and control of equine influenza virus (EV) in horses
Thomas M. Chambers, Luis Martinez-Sobrido

11,578,071 - Preparation of pyrazolo[3,4-B]pyridines as antimalarials
Scott Charles Eagon, Rodney Kip Guy, Jared Hammill

11,578,101 - Proteasome inhibitors
Kyung Bo Kim

11,591,575 - Compositions and methods for pest control management
Angelika Fath-Goodin, Kendra Hitz Steele, Bruce A. Webb

11,596,912 - Single stage clarifier and mixing assembly
Joshua Werner

11,602,535 - Compositions and methods for treating retinal degradation
Jayakrishna Ambati, Benjamin Fowler

11,623,316 - Testbed device for us in predictive modelling of manufacturing processes
Julius Schoop

11,649,458 - Inhibiting angiotensinogen to attenuate aortic pathology in Marfan syndrome
Jeff Chen, Alan Daugherty, Hong Lu, Mary Sheppard

11,651,319 - Innovative manufacturing methods for next-generation products, processes, and systems
Ryan Bradley, Ibrahim S. Jawahir

11,660,269 - Liposomal compounds and methods of use thereof
Ahmed K. Abdel-Latif, Ahmed Al-Darraji, David Feola, John Gensel, Vincent J. Venditto

11,660,574 - Dibakar Bhattacharyya, **Rollie G. Mills, Mohammed Mottaleb, Lindell Ormsbee, Anthony Saad**

11,673,109 - Apparatus and method for enhancing yield and transfer rate of a packed bed
Bradley D. Irvin, Kunlei Liu, Roger S. Perrone

FY 2024 (34 issued)

11,692,003 - Mithramycin derivatives having increased selectivity and anti-cancer activity
Joseph Eckenrode, Cai-Xia Hou, Markos Leggas, Anhisek Mandal, Prithiba Mitra, Jurgen Rohr, Oleg Vyacheslav Tsodikov

11,712,432 - Method of treating cancer with an elevated glycogen content
Matthew S. Gentry, Ramon Sun, Lyndsay EA Young

11,717,520 - Compositions and methods for treating retinal degradation
Jayakrishna Ambati, Kameshwari Ambati, Benjamin Fowler

11,730,743 - Protection of cells from degeneration and treatment of geographic atrophy
Jayakrishna Ambati

11,730,750 - Drugs for GRP78 cell surface translocation and Par-4 secretion
Ravshan Burikhanov, Vivek M. Rangnekar, David S. Watt

11,761,937 - Apparatus and method for trace gas detection utilizing unmanned aerial vehicles
Marcelo I. Guzman, Travis J. Schuyler

11,773,401 - bZIP transcription factors regulate conversion of nicotine to nornicotine
Darlene Madeline Lawson, Sitakanta Pattanaik, Sanjay K. Singh, Ling Yuan

11,778,965 - Alteration of tobacco alkaloid through modification of specific cytochrome P450 genes
Steven W. Bowen, Ralph Dewey, Lily Gavilano, Balazs Siminszky

11,793,829 - Development ofsspolylysine:epigallocatechin-3-o-gallate and dsRNA polyplexes for control of mosquitoes
Ramesh Dhadapani, Subba Reddy Palli

11,795,189 - Formulation and method for spray-drying D-tagatose
Heather Campbell

11,807,859 - Alteration of tobacco alkaloid content through modification of specific cytochrome P450 genes
Steven Bown, Ralph Dewey, Lily Gavilano, Balazs Siminszky

11,813,118 - Loupe-based intraoperative fluorescence imaging device for the guidance of tumor resection
Chong Huang, Nick McGregor, Thomas Pittman, Guoqiang Yu

11,819,799 - Compact absorption column for CO2 capture
Kunlei Liu, Heather Nikolic

11,821,054 - Method for recovering valuable elements from precombustion coal-based materials
Rick Q. Honaker, Wencai Zhang

11,827,718 - Antibodies for binding pathologic forms of calcineurin
Jenna Gollihue, Rodney Guttman, Susan D. Kraner, Christopher M. Norris

11,833,185 - Anti-neurodegenerative thereapeutic, method of manufacture, and use
Raymond T. Bartus Sr., Luke H. Bradley, Don M. Gash, Greg A. Gerhardt

11,851,391 - Antifungal compounds and methods of forming the same
Nishad Thamban Chandrika, Sylvie Garneau-Tsodikova, David S. Watt

11,857,914 - Electrochemical apparatus for acid gas removal and hydrogen generation
Reynolds Frimpong, Xin Gao, Kunlei Liu, Ayokunle Omosebi

11,883,409 - Protection of cells from degeneration and treatment of geographic atrophy
Jayakrishna Ambati

11,890,490 - Quality assurance device with passive optical component and remote camera
Dennis Cheek, Quan Chen, Janelle Molloy

11,920,039 - Malachite green radio-chromic compounds and radiation sensing systems incorporating the compounds
John E. Anthony, John Bobbitt, James Nicholson, Brent Peters, Aaron Washington

11,932,557 - Detection and extraction of plastic contaminants within water using hydrophobic deep eutectic solvents
Jameson Hunter, Wenqi Li, Qing Shao, Jian Shi, Yuxuan Zhang

11,932,897 - Biosynthesis of curcuminoids in mammalian cells
Daniel W. Pack, Logan Warriner

11,938,443 - Hybrid post-combustion CO2 capture system and method
Kunlei Liu

11,964,028 - RNA nanoparticles and method of use thereof
Peixuan Guo, Hui Li, Wei Luo

11,964,172 - Quality assurance device for a medical accelerator
Dennis Cheek, Quan Chen, Janelle Molloy

11,980,687 - Liposomal compounds and methods of use thereof
Ahmed K. Abdel-Latif, Ahmed Al-Darraji, David Feola, John Gensel, Vincent J. Venditto

11,984,046 - Surgical skills training model
DeShana Collett, Samuel Powdrill

11,986,464 - 5HT3R antagonist for use in treating aneurysms and cardiovascular risk
Yasir Alsiraj, Eric M. Blalock, Lisa A. Cassis, Mark Ensor, Sean Thatcher

11,987,564 - PTPRD inhibitors and uses thereof
Ian Henderson, Thomas Edward Prisinzano, George Uhl, Wei Wang

11,998,547 - Compositions and methods for treating multiple sclerosis
Jayakrishna Ambati, Kameshwari Ambati, Benjamin Fowler

11,999,676 - Vesicular monoamine transporter-2 ligands and their use in the treatment of psychostimulant abuse
Peter A. Crooks, Derong Ding, Linda P. Dwoskin, Rodney Kip Guy, Jared Hammill, Stefan Kwiatkowski, Na-Ra Lee, Markos Leggas, Jon S. Thorson, David S. Watt, Guangrong Zheng

11,999,803 - Proteasome inhibitors
Kyung Bo Kim

12,019,081 - Method for detection and quantification of CLN3 protein
Beatrix M. Ueberheide, Qingjun Wang

UK STARTUP COMPANIES FORMED IN FISCAL YEARS 2021-2024

FY 2021 6

1. Arisu Therapeutics, Inc.
2. Cellie Coping Company, LLC
3. Cinsano Pharma, Inc.
4. HuM ed Technologies, Inc.
5. LEMSMENKEM, LLC
6. VerraGlo, LLC

FY 2022 4

1. Neocycl Holdings, Inc.
2. VivaMed Opioid Solutions, LLC
3. VivaMed Stimulant Solutions, LLC
4. X Met, LLC

FY 2023 5

1. CritterFitters
2. CircCure
3. PhytoGenesis
4. VivaMed PG Solutions
5. VSI Composites

FY 2024 7

1. Bluegrass Pharmaceuticals, Inc.
2. Bone Diagnostics and Devices Company, Inc.
3. IMNovations, Inc.
4. Iridesce Solutions, Inc.
5. Occlusion Technologies, LLC
6. TourniTech, LLC
7. Vesicure Technologies Corp.

STARTUP SPOTLIGHTS

Cellie Coping Company, LLC

Meghan L. Marsac, Ph.D., is an assistant professor of pediatrics in the UK College of Medicine, a pediatric psychologist at UK HealthCare and CEO of the UK startup Cellie Coping Company. The company develops Cellie Coping Kits to support children and their families after a medical diagnosis by providing communication techniques and coping strategies. Each kit includes a toy named Cellie, a booklet for caregivers and flashcards for kids.

celliecopingcompany.com »

PhytoGenesis LLC

Aardra Kachroo, Ph.D., and Pradeep Kachroo, Ph.D., professors in the plant pathology in the Martin-Gatton College of Agriculture, Food and Environment, are co-founders of PhytoGenesis LLC. The startup was founded to commercialize a technology that enhances crop protection by activating the plant's defense system, known as systemic acquired resistance. This environmentally friendly product provides lifetime protection with a single application.

phytogenesis.com »

PROGRAMS

KYNETIC

The Kentucky Network for Innovation and Commercialization (KYNETIC) is part of the Innovation and Entrepreneurship Training focus of UK Innovate. The program, funded by National Institutes of Health's (NIH) Research Evaluation and Commercialization Hub (REACH) program, supports faculty, staff, trainees and students who want to accelerate the introduction of their groundbreaking innovations to the marketplace to address unmet needs to benefit human health. The KYNETIC hub is led by UK, University of Louisville and the Kentucky Cabinet for Economic Development, with support from Kentucky Commercialization Ventures.

KYNETIC
Kentucky Network for Innovation and Commercialization

MIR

Mentors-in-Residence (MIR)

The Mentor-in-Residence (MIR) program to connect subject matter experts with UK Innovators, providing coaching and guidance on transforming their technology into viable businesses, products or services. Over the past three years, experts have been engaged to support UK Innovators through the program.

UKPITCH

UKPitch supports UK researchers in pitching their research, technology, intellectual property or startup at competitions, conferences and similar events. The program provides an opportunity for researchers to present their innovations in settings that foster commercialization and entrepreneurship. Several UK researchers have leveraged UKPitch to showcase their technology or startup at events like BIO on the Bayou and other conferences.

UKPitch

PARTNERSHIPS

BIO International
UK Innovate staff collaborated with other Kentucky organizations to develop a Kentucky-focused booth at the 2023 International BIO Conference. Representatives from UK, Commerce Lexington, Kentucky Commercialization Ventures, University of Louisville, UPS and others participated. The Health Network in Louisville led this effort to establish a strong Kentucky presence at the conference.

KCV
Kentucky Commercialization Ventures

Kentucky Commercialization Ventures (KCV)
UKPitch supports UK researchers in pitching their research, technology, intellectual property or startup at competitions, conferences and similar events. The program provides an opportunity for researchers to present their innovations in settings that foster commercialization and entrepreneurship. Several UK researchers have leveraged UKPitch to showcase their technology or startup at events like BIO on the Bayou and other conferences.

KY Innovation Hubs
UK Innovate partnered with Awesome Inc and other local organizations to create StartupLEX, an entrepreneur-focused community that fosters growth, education and a culture of giving. The initiative is supported by a grant from KY Innovation, part of the Cabinet for Economic Development.

IDeA Regional Entrepreneurship Development (I-RED) Program
XLerateHealth (XLH), a national healthcare accelerator based in Louisville, Kentucky, in partnership with UK Innovate, has been awarded the first phase of a potential $3.25 million multiyear grant from the National Institutes of Health (NIH) through the IDeA Regional Entrepreneurship Development (I-RED) Program. This grant supports the development and launch of experience-based entrepreneurship and commercialization training tools tailored to academic institutions across the Southeast U.S., benefiting faculty, researchers, innovators and students.

Since 2018, XLH and UK have led this effort through the XLerator Network, an NIH-funded partnership promoting the commercialization of life science and healthcare innovations across 25 academic institutions in the Southeast IDeA states, including Kentucky, Arkansas, Louisiana, Mississippi, South Carolina, West Virginia and Puerto Rico. The NIH I-RED award enables XLerator Network participants to expand prior work by developing, launching, testing and validating entrepreneurship education and training tools that help translate biomedical discoveries into commercial products.

ENRICH
Powered by XLeratorNetwork

Engaging Researchers and Innovators for Commercialization at HBCUs (ENRICH)
As part of the XLerator Network, an NIH-funded initiative led by XLerateHealth, UK partnered with Jackson State University to launch ENRICH. This program is designed for faculty and student innovators at HBCUs in all IDeA-eligible states, encompassing 25 HBCUs. ENRICH provides underrepresented minorities with access to expert knowledge, entrepreneurship best practices, professional networks, mentorship and additional resources.

MI2 METALS INNOVATION INITIATIVE

Metals Innovation Initiative (MI2)
In 2022, UK became a strategic partner in the Metals Innovation Initiative (MI2), a Kentucky-based nonprofit. MI2 "provides collaborative, industry-led executive leadership to attract and promote advanced research, sustainability, commercialization and talent development in Kentucky's metal industry and, ultimately, for Kentucky to be seen as the preeminent destination for metals innovation," according to their website.

Promotion & Tenure – Innovation and Entrepreneurship (PTIE) Coalition
Ian McClure, Associate Vice President for Research, Innovation and Economic Impact, was the co-author of a study published in Science (September 17, 2021). "The recommendations proposed in this paper help institutions consider how they might remove bias in the tenure and promotion review process to more fully assess and value entrepreneurial, innovative endeavors that deliver the kinds of societal impacts universities are increasingly being called on to provide," said McClure.

Patent Palooza!
Celebrating Innovation

Patent Palooza!
Patent Palooza! is our signature yearly event that recognizes and celebrates UK innovators for successful intellectual property (IP), commercialization deals, SBIR/STTR awards and completion of entrepreneurship programs.

In November 2021, we celebrated the accomplishments of UK innovators for FY 2019, FY 2020 and FY 2021, which were delayed due to COVID. We were excited to celebrate and recognize UK faculty innovators at the FY 2022, 2023 and 2024 event.

UK WOMEN INNOVATORS Network

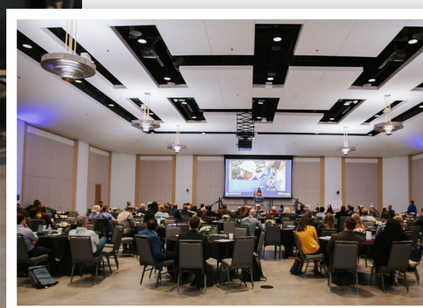
UK Women Innovator's Network (UKWIN)
The UK Women Innovator's Network (UKWIN) program aims to increase the number of UK women engaged in innovation by preparing them to take on leadership roles at every stage of the commercialization process. Each year, UKWIN hosts an event in March during Women's History Month.

KENTUCKY INNOVATOR CHALLENGE
Coming together to solve future-forward problems for Kentucky!

Kentucky Innovator Challenge (KIC)
In April 2021, UK Innovate hosted the inaugural Kentucky Innovator Challenge (KIC), bringing together leaders from businesses, service organizations and higher education for a one-day summit to identify Kentucky's most pressing challenges and explore collaborative solutions through research and innovation.

The first event featured three tracks, two federal funding presentations, 11 industry presentations, two keynotes, and over 150 attendees. Industry presenters delivered 15-minute TED-style talks.

The event is held annually in April.



UK INNOVATE STAFF AWARDS

EXEMPLARY STAFF AWARD

The staff person who best represented UK Innovate's mission statement and actively exhibited the UK Innovate Operating Model in all work activities.

The winner is selected by the UK Innovate Leadership Team.

2023
RECIPIENT
NATALIE **DAMRON MCCORMICK**
Senior Contracts Coordinator
Office of Technology Commercialization

2023
RECIPIENT
ERIN **SHEA**
I-Corps Program Manager
Launch Blue

2022
RECIPIENT
KENDRA **STENZEL**
Commercialization Manager
Office of Technology Commercialization

2021
RECIPIENT
JACQUELINE J. **GREENE**
Director, Marketing and Communications
UK Innovate

RELATIONSHIPS AWARD

The staff person who best exhibited the UK Innovate Operating Model principle to put relationships on a pedestal and built and maintained relationships with others outside the office that created value to UK Innovate

The winner is selected by the UK Innovate Staff.

2023
RECIPIENT
SERENITY **WRIGHT**
Associate Director of Social Innovation
Office of Technology Commercialization

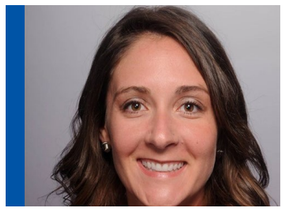
2022
RECIPIENT
LAURA **HALLIGAN**
New Ventures Manager
Office of Technology Commercialization

2021
RECIPIENT
EMMANUEL **SMITH**
Commercialization Manager
Office of Technology Commercialization

SERVICE AWARD

The staff person who best exhibited the UK Innovate Operating Model principle to provide exemplary customer service to others outside the office in their work responsibilities.

The winner is selected by the UK Innovate Staff.



2023
RECIPIENT
CHELSEA **EX-LUBESKIE**
Innovation Connect Manager
UK Innovate

2023
RECIPIENT
LIZ **KNAPP**
Commercialization Manager
Office of Technology Commercialization

2022
RECIPIENT
HOLLY **SYMONDS CLARK**
Senior Commercialization Manager
Office of Technology Commercialization

2021
RECIPIENT
LAURA **HALLIGAN**
New Ventures Manager
Office of Technology Commercialization

SUPPORT AWARD

The staff person who best practiced the UK Innovate Operating Model principle to support others within the office to complete work activities, projects and goals.

The winner is selected by the UK Innovate Staff.

2023
RECIPIENT
MEG **BRENNAN**
Social Innovation Program Coordinator
Office of Technology Commercialization

2022
RECIPIENT
NATALIE **DAMRON McCORMICK**
Senior Contracts Coordinator
Office of Technology Commercialization

2021
RECIPIENT
JESSICA **DAVIS**
Data Support Specialist
Office of Technology Commercialization

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