

# The Economic Value of KU Innovation Park



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**KU INNOVATION PARK** is a growing community of innovation, entrepreneurship, and commercialization. The Park offers a variety of enterprise services for technology and bioscience businesses at any level, from concept to industry. The Park is directly adjacent to the University of Kansas (KU) and works collaboratively with all aspects of the university to meet company needs. This may include work in developing a specific talent pipeline, establishing research partnerships to accelerate development of solutions to technical challenges, or leveraging KU's many resources and analytical capabilities. KU Innovation Park strives to support start-ups by supporting entrepreneurs as they take the first steps and hit the ground running by connecting them to the resources they need. The Park also aims to help existing businesses grow and succeed, to bridge the commercialization gap, and to develop a diversified economy.

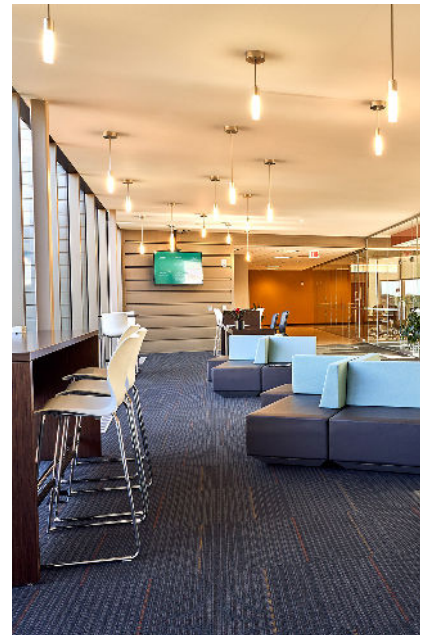
In the heart of Lawrence, Kansas, KU Innovation Park stands as an example of collaborative economic development progress. It's a place where cutting-edge research and entrepreneurial spirit intersect, fostering the transformation of innovative ideas into thriving enterprises. To kick off the fiscal year, the Brookings Institute's research revealed a remarkable statistic—Lawrence was outpacing all other cities in America in tech job growth during fiscal year (FY) 2019–20. This report highlighted the tech sector employment by metro, and the growth in Lawrence was a staggering 16%, surpassing the traditional industry hubs of San Francisco (4.3%) and Austin (3.4%). This achievement is a testament to the concerted efforts of entities across Lawrence, particularly the economic development alliance of the University of Kansas, the City of Lawrence, Douglas County, and The Chamber of Lawrence—the Park's founding partners.

The Park supports a variety of industries in Douglas County and serves county businesses. Additionally, the benefits created by KU Innovation Park extend to the state and local government through increased tax revenues. This study measures the economic impacts created by the Park on the business community and the benefits the Park generates to Kansas taxpayers. The following two analyses are presented:

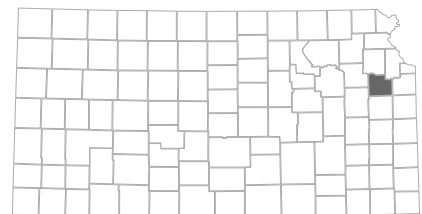
 **Economic impact analysis**

 **Taxpayer benefits analysis**

All results reflect employee, business, and financial data, provided by KU Innovation Park, for FY 2022-23. Impacts on the Douglas County economy are reported under the economic impact analysis and are measured in terms of added income. The benefits for Kansas taxpayers is reported under the taxpayer benefits analysis.



KU Innovation Park is a growing community of innovation, entrepreneurship, and commercialization striving to make businesses successful and the economy strong.



Douglas County, Kansas

# Economic impact analysis



*KU Innovation Park promotes economic growth in Douglas County through its direct expenditures and the resulting expenditures of county businesses. The Park serves as an employer and buyer of goods and services for its day-to-day and construction operations. Numerous start-up companies have formed as a result of programs and knowledge at KU Innovation Park. Finally, the Park supported nearly 70 businesses in Douglas County in FY 2022-23, helping them sustain or even grow their businesses.*

## Operations spending impact



KU Innovation Park adds economic value to Douglas County as an employer of county residents and a large-scale buyer of goods and services. In FY 2022-23, payroll at the Park was \$965.0 thousand, much of which was spent in the county for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the Park spent \$2.2 million on expenses related to facilities, supplies, and professional services.

The Park's operations spending added \$1.2 million in income to the county during the analysis year. This figure represents the Park's payroll, the multiplier effects generated by the in-county spending of the Park and its employees, and a downward adjustment to account for funding that the Park received from county sources. The \$1.2 million in added income is equivalent to supporting 13 jobs in the county.

### Impacts created by KU Innovation Park in FY 2022-23



Operations spending impact

**\$1.2 million**

+



Construction spending impact

**\$8.5 million**

+



Start-up company impact

**\$9.9 million**

+



Business support impact

**\$116.9 million**



Total economic impact

**\$136.5 million**

OR



Jobs supported

**1,015**

## From Startland News: Lawrence cybersecurity startup raises \$1.85M pre-seed round led by KC's Flyover Capital

A trio of high-profile regional investors backed Invary in June 2023 with a \$1.85 million pre-seed round. Led by Kansas City-based Flyover Capital, Invary is a startup focused on detecting hidden malware and preventing costly ransomware attacks. KU Innovation Park also made an investment in the company, along with a state program, the NetWork Kansas GROWKS Equity program.

The cybersecurity pioneer uses Zero Trust, a concept in the field that uses architecture built to trust nothing. The pre-seed funding is expected to help launch Invary's Runtime Integrity service, its flagship product that is designed to uncover and neutralize hidden threats that confound modern threat detection systems. Invary licenses technology from the National Security Agency (NSA).





## Talent pipeline

Money talks. That's evident in a recent report by Donna Ginther, a distinguished professor of economics at the University of Kansas. Kansas salaries are lower for most business and engineering jobs than surrounding states. But companies located in KU Innovation Park defy those numbers.

- At the end of June 2023, the Park was home to 67 companies employing nearly 645 people with an annual payroll of \$42 million.
- The average salary for a Park employee is approximately \$66,000, roughly twice the Lawrence and Kansas median per capita income.
- The Park is focused on creating jobs in high-wage, high-growth industries to ensure a sustainable and healthy economy that's diverse and resilient.

Brain drain vs. gain: The migration of young people with degrees has been well-documented. Years ago, it was a rural problem. Now, college-educated workers are fleeing America's biggest cities. So, where does Kansas stand?

- Ginther's research shows that while Kansas does lose highly educated young people to places like Texas, California, and Colorado,

the state also pulls in degree-holders from other states, especially from the Missouri side of Kansas City.

- Considering both sides of that migration, overall, the state is experiencing a decline of less than half a percent of its educated folks between the ages of 20 and 35.

Getting sticky: One of Dr. Ginther's conclusions is that Kansas companies have an opportunity to recruit young and educated residents to keep them in the state, increasing the stickiness of the Sunflower State.

- Over the past 12 years, KU Innovation Park's system has grown from 32 to 669 employees. That's a compound annual growth rate of over 26%.
- Generation Z may be the most entrepreneurial yet. Research shows that 93% of 18- to 25-year-olds "have taken a step toward exploring business ownership."
- The Park is ready to support those up-and-coming entrepreneurs through its specialized space, business management services, fiber internet access, and connectivity to KU, research, industry, and the regional business community.

Source: KU Innovation Park

## Construction spending impact



The final touches of the Park's Phase III expansion facility were underway in the summer of 2022. It will soon be home to many of the fastest-growing bioscience and technology start-ups in Kansas, featuring larger office spaces and wet labs to accommodate company growth. Dignitaries from local, state and federal offices were on West Campus in August to officially open Phase III, adding 65,000 square feet to the Park's system. The opening of Phase III marked the official launch of a 15-year plan to continue development of the Park, working toward 800,000 square feet across 10 facilities, home to 4,000 jobs. Ten companies signed leases for space in Phase III before it opened. A \$7.8 million appropriation from the federal government was the final rivet in the funding framework, working alongside a \$5 million grant from the state of Kansas to make the facility a reality.

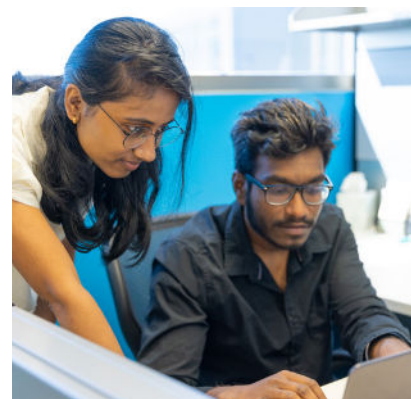


While the Park's spending on capital projects varies from year to year, these quick infusions of income and jobs have a substantial impact on the county economy. In FY 2022-23, the Park's spending to complete Phase III, a 65,000 square foot building with wet lab and offices generated \$8.5 million in added income, which is equivalent to supporting 108 jobs.

## Start-up company impact



KU Innovation Park creates an exceptional environment that fosters innovation and entrepreneurship. The Park supports entrepreneurs by offering services such as: organization and formation, initial market validation and competitive analysis, business plan and commercialization strategy, funding opportunities, operational



## The positive impact of innovation

KU Innovation Park serves as a launching pad for local tech- and bioscience-based start-ups, supporting sustainable growth and fostering innovation in the region. Its collaborative ties with KU enhance research partnerships and provide access to valuable resources. During FY 2022-23, Park companies earned over \$7 million in federal funding for things like the development of vaccines, medicine delivery, treatments, disease testing, and even an educational platform to train and inspire future generations of academic entrepreneurs.

- Between 2 to 3 million children under 15 globally live with HIV and require regular treatment. However, following treatments is low in pediatric patients, with HIV-related deaths among children being as high as 16,000 each year. Oak Therapeutics is developing an HIV therapy delivery platform for children under 15 through a dissolvable strip that is discrete, easy to take and palatable.
- Clearing *Pseudomonas aeruginosa* (Pa) in patients is difficult because of its antibiotic resistance. Pa can cause severe infections in patients with burns, severe wounds, pneumonia and others who are critically ill. Hafion is developing a vaccine to prevent Pa infections in target populations, especially for people who are aging.
- Superconducting neuromorphic computing (NC) circuits mimic the way our brains process information using superconducting materials to perform computations efficiently. They perform exceptionally well in terms of energy efficiency, speed and scalability. Zenoleap is working toward the commercial development of NC circuits to help work toward broad market adoption, help the U.S. maintain its position as a leader in processor development and production, and facilitate tech transfer from the University of Kansas.
- The bacterium *C. difficile* is the most common and increasingly prevalent cause of diarrhea. In the U.S., cases of *C. difficile* infection (CDI) are estimated to hit 500,000 each year and result in an estimated 15,000 to 30,000 deaths. Nectagen is developing a new oral treatment that works in the gut to neutralize toxins produced by *C. difficile*.

- After developing an adjuvant that is used in the Covaxin vaccine, India's first Indigenous COVID-19 vaccine, ViroVax's founder began working on different applications for the adjuvant, Alhydroxiqum-II. Currently, no human vaccine is available for Powassan virus or West Nile virus, which are both flaviviruses transmitted by pesky bugs (ticks for Powassan, mosquitoes for West Nile). ViroVax is developing new subunit vaccines for these viruses, formulated with the Alhydroxiqum-II adjuvant.
- A persistent gap exists between the Midwest's robust biomedical research activities and the development of a comparable pipeline of academic entrepreneurs commercializing the innovations that result from that research. Continuum Educational Technologies is developing an integrated suite of entrepreneurial education products to help university bioscience researchers commercialize their discoveries and bring biomedical innovations to market. The suite will inspire, educate, train and support academic entrepreneurs to increase the opportunities for commercialization and increase the likelihood of success.

While federal dollars play a large financial role for Park companies, others get support through robust capital raises. Phoreas Biotechnology announced a \$2 million seed round in January 2023. Phoreus is a provider of next-generation peptide nanocarriers, which improve the delivery of new genetic vaccines and therapeutics. This capital raise was earmarked for proof-of-concept and regulatory data, the expansion of lab operations, the scale-up of manufacturing and the launch of the company's BAPtofect-25 reagent kit for cell transfection research.

The Park provides tremendous value to these companies through the opportunities and resources it provides. As evidenced above, these companies are making a difference not just for the local community but beyond. While this analysis is focused on the growth to the economy stemming from the growth in jobs, the value created through the innovation and discoveries above should be recognized.



administrative support, and customizable workspaces. Start-up companies are created specifically to license and commercialize University of Kansas technology or knowledge. In FY 2022-23, KU Innovation Park start-up companies added \$9.9 million in income to the Douglas County economy, which is equivalent to supporting 84 jobs.<sup>1</sup>

## Business support impact



KU Innovation Park supports and offers services to pre-existing start-ups and already established businesses. The Park provides strategic business services, customizable space, and a broad network of connections to help businesses scale and become sustainable. In FY 2022-23, KU Innovation Park supported 47 businesses (excluding start-up companies, which were included in the start-up company impact above) with a combined 552 employees located in Douglas County. Building on the exceptional foundation of long-lasting public-private partnerships, the Park is set to have a prolonged and unmistakable impact on the economy in Lawrence, Douglas County, the region and the nation. These businesses that the Park supported during the year added \$116.9 million in income to the Douglas County economy, which is equivalent to supporting 810 jobs.<sup>2</sup>



- 1 There are a handful of companies that were start-up companies but are not considered KU Innovation Park start-up companies. These start-up companies that still received support services from the Park are included under the business support impact along with other businesses the Park supported during the analysis year. In addition, not all KU Innovation Park start-up companies are directly affiliated with KU and are thus excluded in the university-wide impact study.
- 2 While KU Innovation Park is affiliated with KU, not all businesses they support are directly linked to KU and their success cannot be directly attributed to KU. Thus, the Park business support impact is excluded from the KU economic impact study.





## Company spotlight: Icorium Engineering Company (founded 2022)

### One cool discovery

Staying cool is making us hot. And the demand isn't chilling, either. "Cooling protects people from rising temperatures, maintains food quality and safety, and keeps vaccines stable and economies productive," states a report from the United Nations Environment Programme (UNEP). Most hydrofluorocarbon (HFC) refrigerants are greenhouse gases and have a much higher global warming potential than carbon dioxide. By 2050, the UNEP predicts cooling will account for more than 10% of projected global emissions.

That's why Icorium Engineering Company is blazing a trail in recycling refrigerants. The spin-out company from the University of Kansas designs separation systems to handle complex refrigerant mixtures. Refrigerants, like those used in air conditioners and grocery store coolers, are being phased out because of global warming concerns, and the technology to separate the refrigerant mixtures and reuse the components in new products hasn't existed. That is until Kalin Baca, Ph.D., MBA and Professor Mark Shiflett teamed up at KU.

"I did my Ph.D. on refrigerants with ionic liquids and all of the physical property measurements for that, specifically solubility and diffusivity," said Baca, Icorium's co-founder and chief operating officer. "We're providing equipment that can actually separate them back into their component parts. That allows them to be reused and recycled, both as refrigerants but also other materials. It's a really important way to keep a circular lifecycle for refrigerants."

### Validate and accelerate

While earning her Ph.D., Baca participated in the National Science Foundation Innovation Corps (NSF I-Corps) program, an entrepreneurial training program focused on moving research toward commercialization. After getting validation through that experience, Icorium was founded and granted an NSF Small Business Technology Transfer (STTR) Phase I award in 2023.

After participating in KU Innovation Park's Accelerator program, Icorium moved into its own office space and there's no sign of the momentum

cooling down. "We foresee this company having commercial contracts in 2024," said Shiflett, Icorium's co-founder and chief science officer. Shiflett is also a Foundation Distinguished Professor at the KU School of Engineering. "I worked at the DuPont Company for 29 years, working on commercializing a variety of different products, including refrigerants. My intention when I came to the University of Kansas was to become a professor and teach students how to do the same thing."

Shiflett is no stranger to innovation. He's an inventor on 46 U.S. patents and has published over 130 articles on his research. He says he used to tell people that his greatest accomplishment was a refrigerant mixture that replaced chlorofluorocarbons, gases linked to the depletion of the Earth's ozone layer. Now, it's his students. "Having my first student to be able to create a company and watch how that company has grown so rapidly in less than a year has been just extremely rewarding," he said. "In the future, air conditioners will be charged with recycled refrigerant, and Icorium is going to be able to make that possible."

### Perks of the Park

When KU Innovation Park reached out to Baca about its Accelerator program, she saw it as an excellent opportunity to get grounded. "Having access to the office space and having access to the analysts and other park resources at that early state was just really helpful," she said. "It helped alleviate some of the normal pressures at that stage where if you don't have that community around you, it could be even more stressful."

The combination of the Park's expertise and support from KU made the transition from research to market easier to manage. "That process has been a learning experience," Baca said. "All of the people who we've been working with on all sides have actually made the transition pretty seamless, as seamless as I think it could have been."

For Shiflett, the Park is a huge help in launching companies that spin out of the University of Kansas. "There are resources at the Park to help us with everything from marketing to filing patents," he said. "It's been very beneficial to us to be able to start our company here at KU Innovation Park. And I look forward to doing it over and over again with more students like Kalin."



## Total impact

KU Innovation Park added \$136.5 million in income to the Douglas County economy during the analysis year, equal to the sum of the operations and construction spending impacts, the start-up company impact, and the business support impact. For context, the \$136.5 million impact was equal to approximately 2.5% of the total gross regional product (GRP) of Douglas County. This contribution that the Park provided on its own is larger than the entire Utilities industry in the county.

KU Innovation Park's total impact can also be expressed in terms of jobs supported. The \$136.5 million impact supported 1,015 county jobs, using the jobs-to-sales ratios specific to each industry in the county. This means that one out of every 73 jobs in Douglas County is supported by the activities of KU Innovation Park.

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## The Crossing

The Crossing is an exciting mixed-use development set to transform the West Campus at the University of Kansas. Nestled at the intersection in the middle of Lawrence, this vibrant space will blend retail, dining, and living areas, creating an environment where people can live, work, play, and explore.

The Crossing is strategically positioned near the research and office facilities of KU Innovation Park. This proximity enhances collaboration between academia, residents, and visitors, strengthening the entire community. The project aims to attract and retain companies, researchers, and entrepreneurs who align with the opportunities created by a research

university. The Park will expand upon the research community from KU, and The Crossing will offer places to eat, play and live. KU Innovation Park provides an opportunity for founders and business owners to innovate alongside world-class researchers and gain access to assets at KU.

The proximity of The Crossing to KU Innovation Park means that students have easy access to companies and research facilities. Students can secure internships or jobs with innovative companies in bioscience, technology, engineering, cybersecurity and more. These experiences provide real-world exposure, networking opportunities, and a chance to apply classroom knowledge.



# Taxpayer benefits analysis



*Benefits to taxpayers consist of taxes that the state and local government will collect from the added revenue created in the state. This growth in Kansas' tax base includes state revenues collected from taxes on production and imports as well as income and personal property taxes. As KU Innovation Park spends money on operations and phase III of its expansion facility, the Park will make higher tax payments. In addition, KU Innovation Park's employees will also be making tax payments, adding to the state's tax base. In FY 2022-23, the activities of the Park resulted in \$710.9 thousand in added tax revenue for Kansas. Specifically for Douglas County, the county saw \$461.2 thousand in added tax revenues because of activities at KU Innovation Park.*

Kansas taxpayers gain **\$710.9 thousand** in FY 2022-23 as a result of KU Innovation Park.



## KU Innovation Park 15-year anniversary celebration

The fiscal year ended on a high note with the 15-year anniversary celebration of the Park. The event, featuring Kansas Sen. Jerry Moran as the keynote, was a testament to the power of partnership and the transformative potential of collective effort. It was a reminder that the Park is more than just a collection of buildings and offices. It's a unique

ecosystem, a vibrant mix of companies at all stages, from startups to Fortune 100, state and federal agencies, and academia. With a spirit of entrepreneurship and collaboration, it's a place where ideas are nurtured into ventures, where partnerships are forged, and where opportunities are abundant.



# Conclusion

*The results of this study demonstrate that KU Innovation Park creates value from **multiple perspectives**.*

The Park itself supports the county economy by being an employer and buyer of goods and services. In addition, its construction activities create even more economic activity rippling throughout the economy. KU Innovation Park supports the next generation of innovative business growth through helping entrepreneurs take their first steps and hit the ground running with their inventions and technologies. The Park promotes already established start-up companies and businesses by providing services to help them grow their businesses. The activities of KU Innovation Park's start-up companies as well as the companies the Park supports helps to strengthen and grow the Douglas County economy. KU Innovation Park even provides benefits at the state level by increasing the Kansas tax base through increased tax receipts from its spending.

## About the study

Data and assumptions used in the study are based on several sources, including the FY 2022-23 financial reports from KU Innovation Park, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, and outputs of Lightcast's Multi-Regional Social Accounting Matrix model. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact.



Lightcast provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Lightcast to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit [lightcast.io/solutions/education](https://lightcast.io/solutions/education) to learn more or connect with us.