

Letter from the chancellor

The University of Kansas' mission is to educate leaders, build healthy communities and make discoveries that change the world. In fulfilling this mission, KU strives to be an engine of economic growth for Kansas in a way that empowers workers, families, companies and communities to prosper. Now more than ever, KU is prioritizing its economic development efforts to address Kansas workforce needs, create startups, recruit companies to Kansas and provide infrastructure to communities so they can thrive.

In the pages that follow, this document describes KU's approach to driving economic development in Kansas. In particular, this plan articulates three strategies: 1) develop experiential learning opportunities that bring talented individuals to Kansas, 2) grow our culture of innovation and entrepreneurism, and 3) strengthen partnerships among industry, government and community partners — all in pursuit of our ultimate goal to create jobs, wealth and mobility for Kansans.

Partnerships are essential to move Kansas forward, which is why this strategic plan was not developed in isolation. Rather, the plan dovetails with economic development strategies being pursued by the Kansas Department of Commerce and with the Kansas Board of Regents' "Building a Future" strategic plan, particularly Pillar 3 of that plan.

These are challenging times for higher education, as universities across the country attempt to manage declining enrollments, declining state financial support and a pandemic-driven restructuring of industry expectations. Here at the University of Kansas, we are excited to address these challenges in a way that reaffirms KU's central role as a talent magnet and driver of economic growth for Kansas and beyond.

Respectfully,

Douglas A. Girod

Chancellor University of Kansas

Table of contents

Ex	recutive summary	4
1.	KU's longstanding foundation of excellence	6
2.	Overarching economic development and prosperity strategy	7
	2.1 KU's Economic Development Plan goals	9
3.	Discoveries that change the world: Building blocks	
	of expertise and strength	10
	3.1 Medical Device & Drug Discovery,	
	Development and Diagnostics	11
	3.2 Safety & Security	14
	3.3 Energy, Systems & Environments	17
4.	Key strategic partners: Working collaboratively to grow	
	talent, research and jobs in Kansas	19
	4.1 KU Innovation Park	20
	4.2 The Crossing at KU Innovation Park	21
5.	KU's economic development goals and strategies	23
6.	Economic Development Plan governance structure	40
7	Conclusion	<i>/</i> 11

Executive summary

This document provides the KU Economic Development Plan in support of the Kansas Board of Regents (KBOR) Economic Prosperity Pillar III. In addition to aligning with the KBOR Building a Future Strategic Plan, this initiative also aligns with the Kansas Department of Commerce's Framework for Growth. Both plans have as their underlying tenant a focus on the Kansas economy in support of its citizens.

KU's Economic Development Plan is inclusive of KU's five campuses and identifies three themes that represent areas of research and academic strength. Within each theme we have highlighted areas of expertise and strength both regionally and nationally. In addition, the strategic plan provides examples of achievements that impact the lives of people living in Kansas and beyond. While the university has breadth in many areas, these three themes hold the highest potential to have broad economic and societal impact:

Areas of strength

- Medical Device and Drug Discovery, Development and Diagnostics: From target discovery to proven efficacy, bringing new treatments to the world
- Security and Safety: Safeguarding our nation and infrastructure
- **Energy, Systems and Environments:** Charting a sustainable course for Kansas and its economy

The university's economic development goals are broad but inclusive of the chosen themes. KU's foundational expertise and strength in these thematic areas align with and create focus for strategies identified in the plan.

The goals of the KU Economic Development Plan harmonize with the aims of the KU Innovation Park, an economic development partner that is home to companies that rely on the university's talent, research expertise, and capabilities. In addition, the park provides a continuum of support for entrepreneurs as they progress from the university into facilities that are positioned to provide business services and support. The KU Innovation Park will be complemented by KU Endowment's development of an integrated mixed-use space called The Crossing at KU Innovation Park. The Park aligns with the KU Economic Development Plan and provides the foundation to diversify and strengthen the regional economy with high-paying jobs.

The plan describes the overarching goals by providing a rationale, unique considerations, strategies, staffing and structure and metrics. The high-level goals that are addressed in the document are:

Develop programming that encourages integration of real-life experience in the classroom, addresses unmet industry needs and workforce shortages, promotes internships, and fosters a *Choose Kansas* mentality.

Promote a culture and infrastructure that stimulates innovation, translation and commercialization that drives business expansion, creation and job growth.

Stimulate development of deep and robust partnerships with industry, government (local, state and federal) and Kansas communities to drive the translation of KU research to the marketplace and society.

In partnership with the KU Innovation Park and KU Endowment, KU aims to reach the following targets through this Economic Development Plan over the next 10 years:

- 2,250 to 2,500 direct jobs
- \$150 to \$175 million annual direct payroll contributing to the Kansas economy
- \$400 to \$600 million total capital investment

These direct jobs and annual payroll are over and above the contributions the university provides to the economy through research dollars brought into the state and employment, the impact of the Crossing on job growth through its many amenities, and the impact on the region due to second- and third-tier suppliers that are interested in locating near a thriving economic development hub.



KU's longstanding foundation of excellence

In 1866, the University of Kansas welcomed the first class of 55 students to an unfinished building on a treeless ridge called Mount Oread. Today, KU enrolls 28,500 students and employs 10,689 individuals across five vibrant, thriving campuses — the Lawrence campus, the Edwards campus in Overland Park, and medical branches in Kansas City, Wichita, and Salina. In its role as the state's flagship university and a premier research institution, KU embraces excellence with high-quality programming and innovative research to serve the state of Kansas, the nation, and the world.

In fiscal year 2021, the university's externally funded research expenditures were just under \$300 million dollars. Funded research is a cornerstone for KU to continue to grow programming and research with external partners and stakeholders. This foundation of excellence set forth by strong leadership, dedicated faculty and staff, and engaged students supports the University of Kansas in remaining true to its mission: to educate leaders, build healthy communities and make discoveries that change the world.

Economic development & prosperity strategy

The economic impact of the University of Kansas on the state of Kansas and the broader region is significant. KU recruits more than 40% of its students from out of state, making the university one of the few net-importers of talent to enhance the workforce. The majority of KU students remain in the region upon graduation.

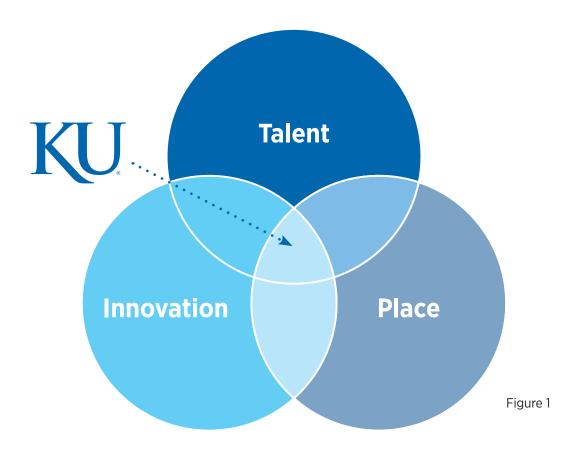
Research directly fuels the economy, employing nearly 4,000 individuals in high-wage jobs that enhance the innovation ecosystem. In recent years, the university has deliberately expanded its mission with a renewed focus on entrepreneurship, commercialization of university-inspired technologies, and strategic corporate engagements to align KU assets with the needs and opportunities of the regional economy. This ongoing work and momentum is organized around a new economic prosperity plan outlining the university's strategic interests for the foreseeable future.

The University of Kansas, leveraging a nationally recognized and proven model adopted by both the Association of Public and Land-grant Universities (APLU) and University Economic Development Association (UEDA), is developing a culture founded on the common understanding that:

Economic development in higher education means proactive institutional engagement with partners and stakeholders in sustainable growth of the competitive capacities that contribute to the advancement of society through the realization of individual, firm, community and regional global economic and social potential.¹

This unified vision and understanding will be embodied by all KU campuses and strongly integrated with the activities of the KU Innovation Park and by KU Endowment as it develops The Crossing at the KU Innovation Park.

KU has deliberately expanded its mission with a renewed focus on entrepreneurship, commercialization of university-inspired technologies, and strategic corporate engagements to align KU assets with the needs and opportunities of the regional economy.



As the university streamlines economic development, it embraces the APLU model (Figure 1) that includes a framework encompassing the need to address **Talent**, **Innovation** and **Place**². In this model, KU's economic development prospers at the intersection of the three components:

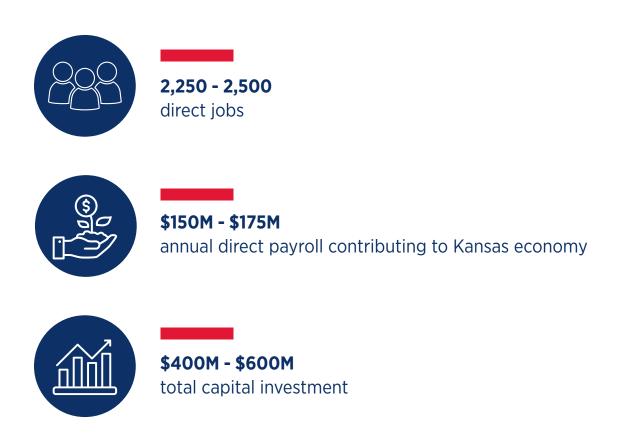
- **Talent:** undergraduate and graduate student talent, lifelong and professional education
- **Innovation:** research, creative works, problem-solving, and entrepreneurship
- **Place:** connectedness to community, the state, and the region

This model recognizes that KU cannot go it alone and that economic development goals can only be achieved with robust statewide, regional, national, and international partnerships.

¹⁸² E. Klein & J.Woodell (August 2015). Higher Education Engagement in Economic Development: Foundations for Strategy and Practice. Association of Public & Land Grant Universities and University Economic Development Association. pp. 4-5. Retrieved from https://www.aplu.org/library/higher-education-engagement-in-economic-development-foundations-for-strategy-and-practice/file

KU's overarching economic development goals in alignment with KBOR's Pillar 3

In partnership with the KU Innovation Park and KU Endowment, KU aims to reach the following targets through this Economic Development Plan over the next 10 years:



These direct jobs and annual payroll are independent of the contributions the university provides to the economy through research dollars brought into the state and employment, the impact of the Crossing on job growth through its many amenities, and the impact on the region due to second- and third-tier suppliers that are interested in locating near a thriving economic development hub.

Discoveries that change the world

As one of only 65 leading research universities in the Association of American Universities (AAU), KU has the foundation for an economic development plan energized by our research and scholarship across a wide range of disciplines, including the arts, humanities, science, engineering, and health sciences.

Capitalizing on this expertise, KU has defined five research themes that build on historic strengths, leverage emerging areas of excellence, and are responsive to national and regional imperatives. Of these overarching themes, three will be the focus of this plan due to their potential impact on the state and regional economy:

Research themes for economic impact



Medical Device & Drug Discovery, Development and Diagnostics



Security & Safety



Energy, Systems & Environments

KU is currently investing in its research infrastructure through the Research Rising challenge grant. In this opportunity, the university will invest \$12 million in four major projects that address one or more of the five research themes to advance science, scholarship, educational programming, and opportunities for translation of the technology through education and workforce development, and to industry through collaborative research and/or licensing.

The KU Economic Development Plan aligns seamlessly with the Kansas Board of Regents Strategic Plan. Pillar 3 of KBOR's plan exemplifies the strong connection between the state of Kansas and KU's economic development framework to advance programming in specific areas where the university has recognized regional and national competitive advantages, including scholarship, educational programming, innovation, partnerships and commercialization experience. The following pages include a description and noted successes within the three themes that will be the focus of this plan.



Medical device and drug discovery, development and diagnostics

KU has a proud history in drug discovery and development based in the Schools of Medicine and Pharmacy (the latter of which is ranked No. 17 nationally in NIH funding) that has extended more recently into the realm of vaccines. In addition, medical device technologies represent an opportunity for KU, combining engineering with basic, translational, and clinical research expertise across the Lawrence, KUMC Kansas City, and KUMC Wichita campuses.

KU is home to the NCI-designated KU Cancer Center, one of only 71 in the United States; Frontiers KU Clinical & Translational Science Institute, one of 62 NCATS-funded Clinical and Translational Science Award (CTSA) hubs; and the Alzheimer's Disease Research Center, one of just 31 NIHdesignated centers in the country. These centers have investigators in Kansas City and Lawrence, and both locations lead comprehensive research programs that encompass fundamental biological mechanisms of disease, drug discovery and development, experimental therapeutics clinical trials, and population health and outcomes research — comprising a comprehensive basic, translational, and clinical research effort.

Companion diagnostic development is essential to discovering, developing, demonstrating, and disseminating precision medicine therapeutics, and KU investigators are developing new diagnostic platforms as exemplified by our work in microfluidics and nanotechnology. A recent example is a new COVID-19 rapid test platform developed by Steven Soper, University Distinguished Professor of chemistry and mechanical engineering.

Clara Biotech, founded by KU engineering alumnus Jim West and Mei He, former KU professor of chemical & petroleum engineering and chemistry, is another example of KU developing technology to advance medical science. Clara recently received \$1.5 million in seed funding and is located in the KU Innovation Park.

Technologies developed in this area of research feature prominently in KU's licensed patent portfolio, and there are numerous examples of health-based startup ventures led by KU scientists, many of which reside at the KU Innovation Park in Lawrence and at the Medical Center Incubator in Kansas City. The Phase V development of the KU Innovation Park in Lawrence will focus on bioinnovation and will address the critical need for wet labs to support continued growth of the sector.

Improving lives in Kansas and beyond

The KU School of Medicine ranks 9th nationally in primary care and receives

World-renowned schools of medicine + pharmacy

- NCI-designated Cancer Center (1 of 71 NIH designated centers)
- 17th-ranked School of Pharmacy in NIH funding
- Award-winning Frontiers KU Clinical
 & Translational Science Institute
- Alzheimer's Disease Center
 (1 of 31 NIH designated centers)

over \$70 million in NIH research funding while offering 24 degree options. The medical school draws nearly 90% of its students from Kansas, with over 50% of Kansas physicians having a Jayhawk lineage. The School of Pharmacy offers an experiential education program through which KU students complete clinical experiences in pharmacies across the state. There are more than 400 pharmacists (community and hospital settings) across the state serving as preceptors. In Kansas, 103 of 105 counties have a pharmacy, and a majority of practicing pharmacists in Kansas are KU graduates.

The KU Cancer Center typically manages nearly 600 clinical trials at a time and has enrolled more than 25,000 individuals in clinical trials since 2010. The Center supports rural Kansas allied health professionals via telehealth technology, providing specialized training and education, collaborating with community members to support





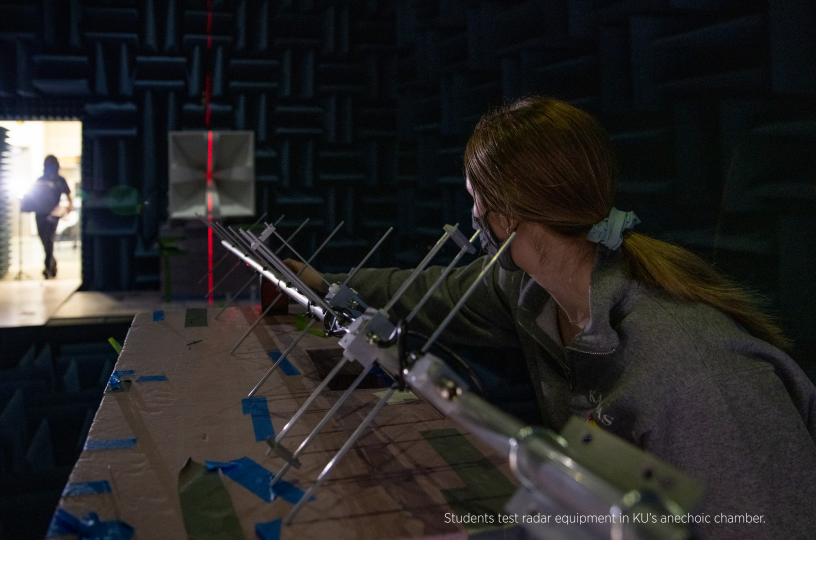
Left: Frontiers: KU Clinical & Translational Science Institute at the University of Kansas Medical Center. Right: Students outside the Health Education Building at KU Med.

research and cancer-control efforts, and advancing research to better understand differences in health outcomes and increasing clinical trial access.

The KU School of Nursing has been designated a Center of Excellence in Nursing Education since 2012. In addition to offering nursing education in Kansas City, Kansas and Salina,

the School of Nursing has a unique partnership with eight community colleges across Kansas that combines on-campus courses at local community colleges with online courses through the School of Nursing. This partnership program allows students to obtain their associate's degree in nursing at their local community college while also obtaining a Bachelor of Science in nursing through remote learning.

In Kansas, 103 of 105 counties have a pharmacy, and a majority of practicing pharmacists in Kansas are KU graduates.



Safety and security

KU is addressing cybersecurity risks and developing new radar and sensor technologies to detect and mitigate global threats. KU is one of just six universities nationwide to receive a National Security Agency (NSA) Science of Security Lablet award. This award builds on KU's designation by the NSA and the Department of Homeland Security as a National Center of Academic Excellence in Cyber Defense Education (CAE-CD) and Cyber Defense Research (CAE-R). KU is one of only 40 institutions in the United States to have this dual designation.

KU's work in the area of safety and security develops trustworthy, secure, and resilient technologies in telecommunications, remote sensing, information systems, data privacy and analytics, and related areas. Technologies include wireless spectrum, information systems, bioinformatics, and radar. The Kansas Applied Research Laboratory (located in the KU Innovation Park) allows the university to perform research in areas requiring enhanced capabilities and facilities with far-reaching impacts on national security. An additional area of strength is the integration

of these technologies into UAV (unmanned aerial vehicle) platforms for deployment in remote areas and "over-the-horizon" applications nearer to home.

The NSA Science of Security Lablet hosts an industry advisory board composed of 11 employers from manufacturing, financial, telecommunications, and health-related sectors, as well as the U.S. Army. The advisory board guides the research and has first-hand, early visibility to research results that may directly influence their business.

Unique NSA partnership leading to job creation

Distinguished Professor Perry
Alexander has, in partnership with
the KU Innovation Park, formed a
startup based on NSA technology
and Alexander's expertise in issues
associated with zero-day vulnerabilities.
This opportunity is the direct result of
Alexander's relationship with the NSA
and his expertise in the area of trust.

Partnerships driving security initiatives

KU is aligned with the National Security Crossroads, a regional initiative to attract an agile and resilient IT workforce, increase federal agency interaction, and accelerate technological and computational advancements to impact national security and the regional and national economy. KU Innovation Park's Phase IV development will focus on safety and security, affirming KU's commitment to advancing regional partnerships like the National Security

Safety and security distinctions

- 1 of 6 universities nationwide to receive NSA Science of Security Lablet award
- 1 of 40 institutions holding dual designations as a National Center of Academic Excellence in Cyber Defense Education and Cyber Research
- KU's Kansas Law Enforcement Training Center serves as the headquarters for all law enforcement training in Kansas

Crossroads. Phase IV will also support local employer recruitment and growth, as well as the development of new startups with similar missions.

Responding to ever-increasing security workforce needs

KU's Department of Electrical **Engineering & Computer Science has** developed academic programming that builds upon its nationally recognized research success. The department offers a graduate and undergraduate certificate in cybersecurity and a master's degree focused on security and assurance. More than 20 courses include security content, exposing a significant portion of the student population to topics related to this area. In addition, several active programs complement the academic offerings. such as the Jayhacker Information Security Student Club, GenCyber High





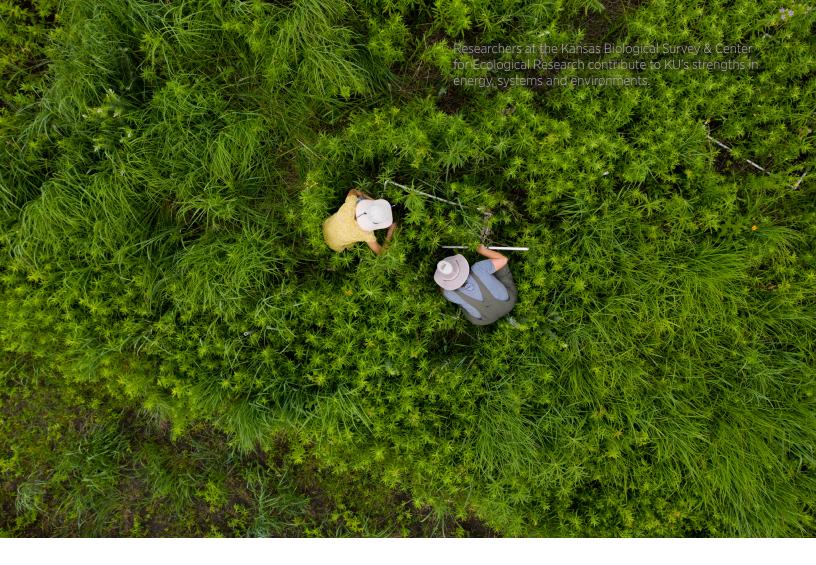
KU students participate in HackKU, an annual 36-hour hackathon where students have the opportunity to innovate new ideas, discover different paths, and push the boundaries of technology.

School Teacher Camp, NSF CyberCorp Scholarship for Service program, and others.

In addition, the School of Professional Studies at the KU Edwards Campus offers a Bachelor of Science degree in information technology that addresses security and network management. The School of Law offers a Master of Science program and a graduate certificate in homeland security law and policy that is targeted to military officers, government, or private sector employees responsible for security operations and disaster preparedness. The Kansas Law Enforcement Training Center (KLETC), established by the

Kansas Legislature in 1968, serves as the headquarters for all law enforcement training in Kansas. The KLETC directly trains the overwhelming majority of municipal, county, and state law enforcement officers in Kansas and oversees, supervises, and monitors training of the remaining officers at eight authorized certified academy programs operated by local law enforcement agencies and the Kansas Highway Patrol. As part of the safety and security focus area, KLETC will continue to expand upon its research expertise in training and preparing law enforcement personnel to maintain safe and healthy communities.

KU Innovation Park's Phase IV development will focus on safety and security, affirming KU's commitment to advancing regional industry and governmental partnership.



Energy, systems and environments

KU has a strong cross-disciplinary history in the area of energy, systems and environments that encompasses education and research to understand the interplay between physical, geochemical, and living biological systems — work that has significant implications for the future of Kansas's agriculture, energy, manufacturing, and distribution economy. This work is led by KU's state surveys, institutes, and programs, including:

- Kansas Geological Survey
- Kansas Biological Survey & Center for Ecological Research
- NSF Science & Technology Center

- for Remote Sensing & Integrated Systems (CReSIS)
- Engineering Research Center for Environmentally Beneficial Catalysis (CEBC)
- Kansas Interdisciplinary Carbonate Consortia (KICC)
- Tertiary Oil Recovery Program
- Newly formed Institute for Sustainable Engineering

These units have made advancements that impact the state, national, and international economies. Some of these research studies include:

 Advancements in carbon capture technology and storage utilizing the Kansas geographic landscape.

- Advancements in sensors and UAS platforms to enable the study of ice sheets in the Antarctic and Greenland over time and with varying climate conditions.
- Development of processes whereby waste streams can be leveraged into value-added products.
- Recording and examination of carbonate sediments, rocks, and reservoirs to better understand the planets continued evolution.
- Creation of alternative processes and products that sustainably produce and utilize food, water, and energy while reducing human impact on the climate.

Industry guiding research collaborations

KICC and CEBC are examples of real-time translation of information to both commercial and federal partners as they seek to solve challenges and provide for more sustainable environments in Kansas, the United States and the world. KICC and CEBC are both consortias directly working with industry to solve their specific technical challenges as they improve and advance the development of products for the marketplace. The Kansas Geological Survey has made significant strides partnering with the U.S. Department of Energy and numerous industry partners to understand both technology and regulatory issues associated with carbon capture and storage. Phase V of the KU Innovation Park will focus on bioinnovation and sustainability, and the facility's inclusion of vital wet lab

Energy, systems and environments advances

- Carbon capture technology and storage
- Sensors and UAS platforms to enable study of ice sheets
- Leveraging waste streams into value-added products
- Alternative processes to sustainably produce and utilize food, water and energy while reducing human impact on climate

space will support growth activities in this focus area.

Producing graduates to support systems and environments

The breadth and complexity of systems and environments requires academic programming within the School of Engineering, the College of Liberal Arts & Sciences, the School of Law. and the School of Professional Studies. Students, faculty, and researchers are working together across departmental boundaries to foster an interdisciplinary culture that enables innovative solutions to address systems-level challenges. KU's centers and institutes encourage these cross-disciplinary collaborations while also stimulating engagement with industry, government, and local communities in solving large, complex challenges that are important for society.

Key KU strategic partners

Formerly known as the Bioscience & Technology Business Center (BTBC), the KU Innovation Park (KUIP) has been KU's commercialization partner, facilitating startup growth and serving as home to research translation activities with both for-profit companies and state agencies. Success over the past 10-plus years provides the basis for a re-envisioning of the BTBC as the KU Innovation Park. This new, more expansive vision will continue to provide support for startups, for-profit companies, and state and national agencies through an evolution in services that includes programming to support strategic industry sectors aligned with KU, state and regional assets, an expansive offering of business services for entrepreneurs and a flexible portfolio of facility offerings.

The KU Innovation Park system, which includes facilities in Lawrence and at the KU Medical Center, has been highly successful in supporting businesses (60 companies), creating private-sector jobs (more than 500), and contributing to the regional tax base (annual payroll of just under \$31 million). Currently 25% of the private-sector jobs are directly attributable to KU's entrepreneurial startup activity. The transition into the KU Innovation Park, with a closer alliance to KU's research priorities and talent, will only enhance its impact on the economy.

KU Innovation Park



KU Endowment



Working collaboratively with KU to grow innovation, talent, research, and jobs in Kansas



Development of KU Innovation Park Phases III, IV and V

The KU Innovation Park will celebrate the opening of Phase III during the summer of 2022. This third phase, adjacent to Phases I and II on the Lawrence campus, will add 66,000 square feet, bringing the combined Lawrence and Medical Center facility to nearly 140,000 square feet. Phase III is anticipated to be 85% occupied when it opens. More established companies that are experiencing high growth are transitioning to Phase III, which will return Phases I and II to focus more on small business and new startups.

The Phase III project is the foundation for the next major development that supports KU's economic development plan with Phases IV and V. Phase IV is anticipated to have as its thematic focus safety and security. Phase V will have as its focus Bioinnovation and Sustainability and will contain high-demand wet lab space to support a pressing regional shortage. The thematic focus areas of Phase IV and V align directly with Emerging Areas of Excellence (page 3), which are the foundation for this economic development strategic plan.

It is anticipated that once Phases IV and V are fully developed, the KU Innovation Park will be self-sustaining and able to efficiently finance subsequent development to complete the envisioned 15-year plan and associated metrics. The KU Innovation Park companies residing at the Park and the KUMC incubator are situated

to take advantage of KU talent, research and expertise while diversifying the local economy and building a strong base of high-paying jobs that will enhance retention opportunities for KU graduates. The KU-KU Innovation Park partnership will bring new research dollars into Kansas, educate a diverse workforce, create new jobs, develop technology that stimulates new business, and advance the product portfolio of existing private industry. All these programs will provide a stimulating environment with new opportunities for graduates to reside within the state.

The Crossing at KU Innovation Park

The expansion plans of the KU Innovation Park are being developed in parallel and in partnership with efforts at KU Endowment. In 2019, KU Endowment (in consultation with the university) undertook a process to determine how underutilized real estate in the West District of KU's Lawrence campus could be leveraged to enhance the university. By the summer of 2020, the process determined that the property should be used to accelerate the work of the KU Innovation Park by making the area more attractive to companies and researchers that align with KU's strengths, transforming this area into a true innovation district.

The 80-acre master plan calls for the construction of new roads and utilities to serve the first phase of the development, including adding a traffic signal at the intersection of 21st and lowa





Top: Phase III of the KU Innovation Park, adjacent to Phases I and II on the Lawrence campus, adds 66,000 square feet, bringing the combined Lawrence and Medical Center facility to nearly 140,000 square feet. Bottom: The Crossing at KU Innovation Park will be a mixed-use development that serves as a gateway to KU and the KU Innovation Park.



Streets and creating a public greenway to connect the KU Jayhawk Trail to the Lawrence Loop multi-modal trail system.

The initial infrastructure creates a system of streets, utilities, and buildable lots to accommodate the university, KU Innovation Park, and private development. The first phase includes seven parcels that will accommodate 15 to 20 structures, depending on their size and scope. The majority of the private development will occur on the south side of 21st street, directly across from the existing research buildings and parcels reserved for future KU and KU Innovation Park buildings. The plan utilizes an urban-like environment to establish a sense of place. The configuration is designed intentionally to blur the line between the university and the city of Lawrence — creating an active,

walkable, live-work-play-learn and discover environment.

This KUEA initiative is branded as the The Crossing at KU Innovation Park. The Crossing will be a mixed-use development that serves as a gateway to the University of Kansas and the KU Innovation Park. The Crossing is envisioned to include an intergenerational, residential community, research-oriented office space, an early childcare and education center, and a unique mix of restaurants, activities, and neighborhood amenity retailers. The primary intent of the development is to create an environment to attract and retain the next generation of innovative companies, researchers, and entrepreneurs to the state of Kansas. the city of Lawrence and KU.

The primary intent of the The Crossing at KU Innovation Park is to attract and retain the next generation of innovative companies, researchers, and entrepreneurs to the state of Kansas, the city of Lawrence and KU.

Economic development goals and strategies

KU's Economic Development Plan has been conceptualized as part of KBOR's Economic Prosperity Pillar. We also looked for alignment with the Kansas Department of Commerce Framework for Growth and the City of Lawrence's Economic Development Plan. In addition, the KU Lawrence/Edwards campus is undertaking a strategic planning process, Jayhawk Rising, and the pillars associated with that plan — Student Success, Healthy & Vibrant Communities, and Research & Discovery — are complementary to many of the activities highlighted within KBOR's Prosperity Pillar and contained within this Economic Development Plan. As KU's Economic Development Plan is inclusive of all five KU campuses, we have also collaborated with the KU Medical Center as they refresh their strategic plan to ensure alignment between areas of effort.

KU's economic development goals — incorporating elements of Talent, Innovation, and Place — will provide the basis for KU's Economic Development Plan:

Goal 1: Develop programming that encourages integration of real-life experience in the classroom, addresses unmet industry needs and workforce shortages, promotes internships, and fosters a *Choose Kansas* mentality.

Rationale

Many employers offer internship opportunities and regularly connect to KU through our Career Services & Experiential Learning units. KU seeks to maximize opportunities by taking a more proactive role in engaging Kansas employers to inform them of internships, experiential learning opportunities and other engagement strategies. These experiences with Kansas employers will provide early access for students to understand employers' interests and culture to assist in supporting development of pipeline employment opportunities. Expanding KU's relationships with Kansas employers, statewide and within the KU Innovation Park, will elevate learning opportunities and produce graduates positioned to Choose Kansas as they start their careers.

Considerations

Career Services is decentralized at KU, with a main University Career Center and several career service units located in individual schools. The Jayhawks Rising Student Success pillar promotes a unified strategy that will create a strong network



among career services units, while adhering to the specific characteristics of the schools. In addition, the COVID-19 pandemic has challenged previous recruiting practices and introduced new strategies to engage with potential employees. KU needs to evaluate new approaches that will improve efficiency while enhancing service. Companies are actively looking to improve hiring practices that will assist in diversifying their workforce, and KU needs to consider strategies to support these interests. The newly created Center for Certification and Competency-Based Education (C3BE) within the Achievement & Assessment Institute has the expertise to develop robust, competency-based programs that integrate student learners' needs and university expertise to support desired employer interests. C3BE is a resource that, when appropriate, can assist in better focusing existing and new academic content to meet employer needs into the future.

Strategy

 Re-envision and enhance the student experience through experiential learning, career readiness curricula, internships, and student research experiences.
 KU will engage with external partners to understand their interests and needs.
 A priority focus with this strategy will be to create experiential opportunities with employers and state agencies within Kansas, including those in the KU Innovation Park.

- Form a Kansas Workforce Development Committee. The committee will track and evaluate data regarding graduate activities and, as appropriate, develop strategies to enhance stakeholder experience both internal to KU and externally. The committee will monitor internship and placement data to better understand real-time metrics and guide progress.
- Work with KU Career Services, Experiential Learning, school-level career services units to develop organizational and operational strategies.
 By working collectively, each unit will be able to maintain the unique programming needs of its school while allowing development of a cohesive strategy. This alignment with organizational and operational strategies will be consistent with the broader goals of the university that will support local, regional and national employer needs.
- Evaluate and, as appropriate, broaden experiential learning opportunities. Utilize events and career fairs hosted at University Career Services, advanced entrepreneurship projects class, the MBA program projects class and programs such as the engineering capstone model.
- Work with Kansas companies, government agencies and not-for-profit entities to broaden internship opportunities at all levels (bachelor's, master's, doctoral), across disciplines and throughout the calendar year.
- In discipline-specific areas, leverage federal funding opportunities to support enhanced student experiences and internships while assisting regional corporate partners with talent (i.e., NIH R25 Translational Regional Training Programs).

6,500

degrees conferred in Spring 2022 655

unique employers visit campus to recruit KU students 1,950

students earning experiential learning certificates

- Leverage year-round internship opportunities through the KU Innovation
 Park and the Incubator at KUMC. These opportunities include year-around
 internships and sector-specific student labor pools. Evaluate alternative
 models and strategies (e.g. apprenticeship strategy for specific disciplines,
 such as cybersecurity and information technology).
- When appropriate, utilize market-based processes into new academic program development efforts and apply a similar lens and critique across existing curricular offerings. Enhance efforts to support blending of degree and non-degree programs, credit for prior learning, and market-driven certificate development.
 - Customer discovery for the School of Professional Studies and KU Lifelong & Professional Education. Evaluate programs to understand their success in meeting industry requirements. Develop a growth strategy to guide these programs.
 - Leverage the newly created Center for Certification & Competency-Based Education. Develop a platform that bridges the gap between student learning, workforce needs and desired outcomes while also considering prior learning credit. Explore use of this program in the cybersecurity sector as a proof-of-concept model.

Staffing and structure

Form the Kansas Workforce Development Committee, consisting of representation from KU's career services units, School of Professional Studies, Lifelong & Professional Education, KU Alumni Association and others. Engage the Center for Certification & Competency-Based Education, when appropriate, to guide program development.

Metric impact

- # students engaged in real-world experiential learning in classes
- # students engaged in internship programs and # of companies offering internships by discipline
- % success placing students at the company where they interned
- # students participating in non-degree programs
- # students accepting jobs by program in-state and out-of-state

Goal 2: Promote a culture and infrastructure that stimulates innovation, translation and commercialization that drives business expansion, creation and job growth.

Rationale

Universities must be economic engines that drive job growth and business creation through entrepreneurial activities. This goal provides foundational activities to build up the supportive entrepreneurial culture within KU, while also providing infrastructure that assists and guides entrepreneurial interests. There are varied constituents in the university whose needs and interests should be supported throughout the progression of activities associated with business creation. These constituents include undergraduate and graduate students, postdoctoral fellows, research staff and faculty. In addition to having a diverse constituent base, the various technology sectors that originate startups each has its own specific requirements and nuances that must be addressed.

Goal 2A: Promote a culture within KU that supports entrepreneurship, innovation and engagement

Rationale

1) Incentive structures are needed (especially for faculty) that align with this goal. Universities have a long-standing model for promotion and tenure review (PTR). A nationally recognized effort led by Oregon State University through the Promotion & Tenure for Innovation & Engagement (PTIE) coalition is challenging that model with the idea of adding societal impact to the PTR process. To encourage a supportive culture, KU needs to consider evolving PTR.

2) Innovation and entrepreneurism needs to be celebrated within KU and success stories need to be told so that faculty/staff and students have a stronger awareness of the opportunity. In addition, these communications will reinforce KU's economic development impact within the region and stimulate more engagement from key external stakeholders (e.g., mentors, management talent, investor community and others).

Considerations

The PTR process is long-standing and guarded at the department level. Adding entrepreneurism/social impact to the conversation may be viewed as diluting the university's traditional mission. There may also be an unpopular stigma associated with the idea of for-profit companies.



Strategy

- 1. Encourage cultural change at KU and in the state that focuses on the societal impact of commercializing research activities through the following strategies:
 - Encourage the university's promotion and tenure review process to broaden
 its scope to specifically include societal impact and entrepreneurial activities
 as a way to expand the benefit of KU's research, working as members of the
 national PTIE coalition and with faculty development to foster recognition
 of the value of entrepreneurial efforts (patents, licenses, company
 development, startup funding).
 - Develop communication strategies with academic units to promote both entrepreneurial activities as well as those in the KU Innovation Park (KUIP). Develop dashboards that allow academic units to understand economic development metrics that result from and/or impact their units (invention disclosures, industry partnerships, # of startups, # faculty/research staff/ students involved in startups, companies recruited to and/or expanding operations at KUIP, etc.).
 - Develop a communications strategy that informs the region and state about KU-led startups. Describe economic development and startup achievements

in such a way that various audiences can easily understand how these efforts impact them personally and assist in retelling the story.

- Develop a robust entrepreneurial recognition strategy. Encourage discussion of entrepreneurism at all levels and at college/school events to showcase and celebrate success. Work with the KU Alumni Association and KU Endowment to identify donors who have an interest in financially supporting this recognition strategy.
- In concert with KU's School of Business, develop programs that promote KU startups at all levels (undergraduate and graduate students, postdocs, faculty and staff) to the broader regional community. This would create a broader awareness of KU's startups and a supportive platform from which to develop networking, mentorship and capital investment.
- 2. Create a Jayhawk Entrepreneurial Alumni Club that recognizes and celebrates alumni who have successfully started and grown their own companies. Identify mentorship opportunities from this established pool of successful Jayhawk entrepreneurs.
- 3. Engage with academic departments as they recruit faculty to reinforce KU's interest and support of all forms of innovation and entrepreneurism.

Staffing and structure

KU Office of Research, KU Center for Technology Commercialization, KU Faculty Development, KU Alumni Association, KU School of Business and the Office of Economic Development will work jointly with schools and colleges to facilitate execution of the above strategies.

Metric impact

- # / type of events (innovation showcase, pitch competition, Tech Tuesdays, etc.)
- # of faculty participating in entrepreneurial activities
- # of entrepreneurial stories published
- # of KU faculty recognized by the National Academy of Inventors
- \$ raised to support entrepreneurs from KU alumni (Jayhawk Venture Fund, programmatic funding)

Goal 2b: Develop an innovation and entrepreneurial infrastructure that fosters business creation and job growth at KU and across the state.

Rationale

KU's innovation and entrepreneurial efforts are spread across all campuses and lack both a comprehensive strategic mission and organizational structure. The economic development plan will provide a more structured and collaborative approach that creates an innovation ecosystem within the university to support undergraduate and graduate students, staff and faculty. KU Innovation Park will be a key component of this initiative and will provide a supportive infrastructure available to university startups.

Considerations

An organizational infrastructure needs to be created that acknowledges and leverages the organically driven programs that already exist. As KU develops its internal infrastructure and ecosystem, there must be intentional interaction and alignment with activities in the city, region and state.

Strategy

- 1. Create a KU Innovation & Entrepreneurial Cross-Campus Committee that focuses and coordinates initiatives across all KU campuses. The committee's charter will include identifying and, as appropriate, developing programming to support entrepreneurism at KU.
 - Facilitate discussion on the educational strategy and specific programming needs for entrepreneurism. This committee will inventory KU courses and programs, identify weaknesses and gaps, and ultimately develop a strategy to address improvement across all core constituents (students, faculty, and research staff).

45

active startup companies created from KU research 184

disclosures by KU inventors from 2018-2020 123

license/option agreements for KU tech in 3 years

- Develop an evaluation and assessment strategy for entrepreneurial activities that is regularly reviewed by the Innovation & Entrepreneurial Cross-Campus Committee.
- In partnership with the School of Business, develop educational programming that can be shared with other interested academic units, including, if appropriate, a "train-the-trainer" strategy.
- Use federal programs to supplement and complement education efforts, particularly in the identified thematic areas of focus (e.g., I-Corp Hub, SHARPhub, Frontiers, EDA Center for Entrepreneurism, and others).
- 2. Develop new connections and networks across campus that align entrepreneurial activities.
 - Create entrepreneurial faculty ambassadors within each academic unit.
 These ambassadors faculty who have "walked the walk" would help
 to foster cultural change, support entrepreneurial events, and serve as an
 initial point of contact for faculty, research staff and students interested
 in starting a company.
 - Hire a venture support officer, complemented by entrepreneurs in residence (EIRs). These individuals should have domain expertise to assist with one-on-one guidance to startup companies originating from research programs aligned with areas highlighted in this plan.
 - Develop programming to engage undergraduates, graduate students and postdocs in entrepreneurial thinking, and provides internship opportunities at startup companies. Identify funding for postdoctoral fellowships in startup companies.
 - Develop a more robust integrated partnership with Kansas SBDC offices, and stronger connections with resources and initiatives in the KC area.
- 3. Engage with the Institute for Policy & Social Research (IPSR) as it collects and analyzes economic development data. In concert with IPSR, develop policy recommendations to support entrepreneurial programming within Kansas. Develop key metrics and peer comparators to guide effective policy across the state in entrepreneurism. Develop mechanisms to advance and mature high-potential technology.

- 4. Collaborate with KU Center for Technology Commercialization (CTC).
 - Review KU's existing IP portfolio and identify target licensing opportunities. Develop a strategy to reach out to companies identified as having an interest either in further developing or licensing the technology.
 - Leverage market assessment reports (such as those currently provided by TreMonti) to identify corporate partners with which KU should develop relationships.
 - Evaluate programs offered by others that provide mentorship, incubation and a variety of support services for the startup ecosystem.
 - Work with KU CTC as technologies are evaluated to capture potential startup activity as soon as the interest is expressed.
 Connect the venture support officer with the potential startup to help answer questions and provide one-on-one, stepwise guidance, leveraging domain expertise as needed.
- 5. Incorporate knowledge gained through the Institute for Advancing Medical Innovation's activities.

 Evaluate IAMI models and develop or adapt to grow technologies beyond medical devices and drug development (e.g. security, software, defense technology, etc.).



Scott Weir, professor of pharmacology, toxicology and therapeutics, is director of the Institute for Advancing Medical Innovation at the KU Medical Center. IAMI seeks to improve human health by accelerating new drug therapies and medical devices to patients

- Develop a clear continuum of support for KU entrepreneurs that provides support from idea inception to trough to funding.
 - Identify educational programs, entrepreneurial road maps and support systems to guide startups and provide one-on-one support as needed. The venture support officer, acting as a concierge, interfaces and guides the entrepreneur and connects them with programs offered by KU, KU Innovation Park (including the KUMC Incubator), Kansas Small Business

Development Centers, Douglas County, Kansas City, and the state to meet the entrepreneur where they are in the process.

- Refine the transition strategy for KU startups/spinouts to ensure smooth handoff as they progress from inside the university to the KU Innovation Park or other site.
- Review all appropriate KU policies and processes to ensure they support KU entrepreneurs.
- 7. Engage with the KU Alumni Association (KUAA) and KU Endowment on the following supporting initiatives:
 - Identify alumni who could serve as mentors (technical and business) or provide management talent. Tap key academic departments to engage their alumni networks and external/industry advisory boards in identifying mentors and management talent.
 - Engage KU Endowment to pursue philanthropic opportunities to support various entrepreneurial initiatives. Examples would be seed/proof-of-concept funding all the way to venture funding, as well as pitch competitions for both student and faculty/postdoctoral-initiated companies, and establishment of a venture philanthropy fund.

Staffing and structure

Center for Technology Commercialization, KU Innovation Park, Institute for Advancing Medical Innovation, Office of Economic Development, School of Business, KU Endowment, KU Alumni Association and additional external partners that will support the growth of the KU innovation ecosystem.

Metric impact

- # of active licenses
- # of active startups formed and their respective developmental stage (pre-, early-stage, venture stage etc). Progress will be monitored as they mature over time.
- # of mentors/management talent identified and engaged with startups
- \$ capital raised by KU startups, both dilutive and non-dilutive (SBIR/STTR)
- # of educational entrepreneurial programs developed
- # students, faculty, staff receiving entrepreneurial training

Goal 3: Stimulate development of deep and robust partnerships with industry, government (local, state and federal) and Kansas communities to drive the translation of KU research to the marketplace and society.

Rationale

Industry-university relationships are increasingly important both to the university and to economic growth. The companies provide a home for KU's workforce, internship opportunities and research sponsorship. A strong relationship advances the development of commercializable technology that solves problems and broadens product offerings. In addition, partnerships with industry on federal funding opportunities provide a strategic competitive advantage, as the partnership demonstrates demand and commercialization need and leverages federal funding while addressing national priorities. Working with local and state government and civic organizations allows for an enhanced understanding of regional needs; and engaging with local, state and regional communities enables KU students and faculty to help address societal issues. Developing this robust ecosystem of partnerships provides solutions to the needs and challenges KU's partners face, and ultimately spawns economic and societal advancements in the region and nation. KU Innovation Park and the Crossing at KU Innovation Park are key strategic partners in this process.

Goal 3a: Develop a broad partnership ecosystem that builds upon robust relationships with industry, communities, local and state government, civic organizations and others to understand needs, interests and priorities, while harnessing KU's knowledge, research and talent expertise in response.

Rationale

A strong innovation partnership ecosystem is important for KU to ensure the university is meeting the needs of its constituents and positively impacting the economy. The partnership ecosystem constituent base is broad and requires the development of robust relationships that are built on trust and mutual benefit.

Considerations

Industry engagement is performed by various constituents across KU, each with their own objective(s) for partnership opportunities. Coordination across this breadth of engagement would allow sharing of insights and company interests, as well as identification of opportunities to further partnerships more collectively and strategically.



Strategy

- 1. Develop a broad partnership ecosystem with external stakeholders, including corporate partners, state and local governments, federal agencies, community partners and others, as appropriate.
 - Develop relationships with corporate partners that address their problems and needs while exposing them to the breadth of KU talent and research resources that may provide solutions.
 - Aggregate community engagement activities across campus to tell the KU story and identify collaboration opportunities among and between those initiatives.
 - Engage with regional initiatives (e.g., MetroLab, KC Rising, Keystone Innovation District and others) and with national organizations (e.g., UIDP, AUTM, NACRO, UEDA, AURP and others) to stay abreast of best practices and to identify potential partnerships and expand existing ones.

- 2. Leverage foundation and federal opportunities (e.g. DOD, DOE, NSF, NIH, EDA and others) for the purpose of promoting collaborative research and development while advancing the knowledge of KU talent.
- 3. Foster development of new partnership models, such as a bidirectional, university-wide industry and government externship program. Promote placement of faculty and research scientists into industry/government environments while encouraging assignment of industry/government personnel to university research labs.
- 4. Work collaboratively with local chambers of commerce, the KC Area Development Council and the Kansas Department of Commerce. Collaborate with their efforts to attract corporate and government offices to the region.
- 5. Develop strategies to make working with the university easier, and to make KU a recognized resource for talent, research and knowledge.
 - Develop a "front door" to KU that serves as a central resource to either resolve the stakeholder's request or identify the appropriate resource or avenue for resolution.
 - Develop business processes within the Office of Research that support and promote KU as a business-friendly environment.
 - Increase faculty awareness of partnership opportunities through training and one-on-one support.

120

companies sponsoring research with KU Lawrence in past 5 years 125+

communityengaged activities serving 6,100+ people in AY 2021-22 \$108M

in industrysponsored research expenditures since 2017

- To support efficiency and strategic advancement across KU's many externally facing organizations, identify a tool or methodology that informs the university of partnership activities and provides the foundation for strategic relationship development.
- 6. Develop an understanding of challenges associated with international research relationships. Identify gaps and solutions to facilitate these relationships (future phase).
- 7. Actively participate on local and regional economic development boards to promote KU resources while guiding direction and strategy in support of regional economic growth.
- 8. Encourage development of new policies through IPSR that support graduates remaining in the state of Kansas. In concert with economic development partners, develop communication strategies to increase student awareness of opportunities.

Staffing and structure

Collaborative meetings between Office of Research, Office of Economic Development, Jayhawk Community Partners, Community Engagement, KU Alumni Association, KU Endowment, and KU CTC.

Metric impact

- # and \$ value of research agreements (industry-sponsored research, master agreements, affiliate agreements). # and \$ value of flexible IP models that promote engagement.
- # of active partners of the Office of Economic Development
- # and \$ value of federal awards in collaboration with KU external partners
- # of companies recruited to the region through work with the Chamber and KU Innovation Park
- # of external advisory committees with university participation
- # of community-engaged scholarship pursuits
- # of policy recommendations developed by IPSR in support of economic development



Goal 3b: Further develop relationship with the KU Innovation Park and the Crossing at the KU Innovation Park initiative.

Rationale

The KU Innovation Park and KU Endowment's associated development, the Crossing at KU Innovation Park, are integral components of KU's economic development strategic plan. Ensuring our strategies are coordinated and tightly aligned is key to supporting many of the plan's initiatives and is directly tied to the university's research and educational efforts.

Consideration

Funding to support continued expansion of the KU Innovation Park is a key factor in the success of many aspects of this plan. A wide range of strategies will be pursued to support the development of Phases IV and V that will, in turn, support momentum and provide the foundation for subsequent financial independence.

Strategy

1. KU Innovation Park and the Office of Economic Development will work in partnership to attract and recruit corporate offices to Kansas and the park. This should be selective recruitment of partners who will benefit from adjacency to the university and other park tenants.

- 2. Increase partnerships between KU Innovation Park and KU's academic units. Ensure Innovation Park companies have access to talent and resources available at KU through increased awareness among academic units and research programs.
- 3. Develop a strategy with KU Endowment and the KU Alumni Association to increase awareness and promote the attributes and advantages of the KU Innovation Park.
- 4. Formalize the clustering model at the KU Innovation Park. Develop a model that fosters a more comprehensive alignment with KU resources in the cluster areas of focus that also incorporates strategies that extend into the surrounding region and across the state.
- 5. Develop a strategy (and process) to house specific KU Innovation Park companies within KU facilities, both as separate facilities and shared lab spaces.
- 6. Work with KUMC to develop a supportive programming relationship that meets the needs of their startups and companies engaging with the medical center.
- 7. Foster collaboration with and between KU, KU Endowment, KU Innovation Park, and the city, county and chamber to identify challenges and accelerate growth.

536

direct jobs at KU Innovation Park companies 25%

of park companies & direct jobs associated with KU startups

1,103

projected direct jobs at KU Innovation Park in 5 years

Staffing and structure

Collaborative meetings between KU Innovation Park, Office of Economic Development, Office of Research, KU Alumni Association, KU Endowment and KU CTC.

Metric impact

- # of KU startups transitioned to KUIP (either as virtual or housed tenant)
- # of companies recruited to KUIP (# approached/# successful)
- # and \$ amount of KU startups receiving capital investment
- \$ amount of capital investment raised by KUIP tenants (non-KU affiliated)
- # of jobs and direct payroll for KU startups and non-KU affiliated KUIP companies
- \$ research to KU due to KUIP companies partnering with KU on research
- # companies in the KUIP system total

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Economic Development Plan governance structure

The execution of the Economic Development Plan will be governed by KU's leadership team, consisting of the Chancellor and Provost/Executive Vice Chancellor of the Lawrence campus, the Executive Vice Chancellor of the KU School of Medicine, and the Vice Chancellors for Research for both the Lawrence and KU Medical Center campuses. An Office of Economic Development, reporting to the Chancellor's Office, will be responsible for plan development, implementation, management and evolution. The Economic Development Plan is inclusive of all five campuses and will require integration and support of the academic, research and administrative units. The Office of Economic Development has direct impact on plan outcomes in specific areas but serves to support, guide, facilitate and communicate activities across KU's campuses.

Conclusion

The KU Economic Development Plan provides the framework to enhance talent and workforce development, foster research and innovation, and bolster the university's impact through expanded regional and national partnerships. These three distinct, but interrelated, goals and their associated collaborative strategies unite existing foundational activities across KU's five campuses, benefitting both the economy and society in Kansas and beyond.

As an R1 institution and the third-largest employer in the state, KU is uniquely positioned to leverage its research strengths as an economic development engine that drives impact and stimulates a diversified and resilient economy. The KU Economic Development Plan leverages the university's wealth of expertise and talent to advance the translation of research while also creating an environment that supports new business startups. These research and innovation efforts expand upon a base of robust industry and government partnerships to address societal needs and technical challenges while also helping to shape KU academic programs that position students and graduates at the forefront of knowledge and expertise. Partnerships like the one between KU and the KU Innovation Park are an integral aspect of the plan. Focusing on workforce development, research and innovation provides support to the park and its resident companies, accelerating their growth while retaining talent and expertise in the region.

Executing the KU Economic Development Plan will further the university's impact on the state and region while enriching economic and societal outcomes — truly embodying KU's mission to educate leaders, build healthy communities and make discoveries that change the world.

KU Economic Development Plan

Launched in 2022

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