Economic and Fiscal Impact Analysis

Kansas State University

2025-2035 Vision

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Executive Summary

Kansas State University ("K-State") has established a vision of ranking among the nation's Top 50 public research institutions by 2025 with continued growth through 2035. With the construction and operation of more than 2,100,000 square feet ("SF") of additional academic and research facilities as part of the K-State 2025 Strategic Plan, the potential for demonstrably enhanced research activity has never been stronger. Still, as K-State continues to grow, there are competing demands for financial resources at the local, regional, and state level that are logically considered as plans heavily centered on research activity are shaped. In our opinion, it is reasonable to explore the impacts of a fuller research mission and evaluate how the economic value of K-State changes as the volume of research activity conducted there also grows.

There is extraordinary value measured in terms of economic return, local and state fiscal benefits, societal gains, partnership opportunities, university prestige, and visible community leadership that will result from K-State achieving its 2025-2035 vision. This analysis traces research funding and its related economic benefits, showcasing the importance of the university's research efforts and its impact on regional economic development. The following list summarizes the results of the analysis.

- Even as K-State seeks to enhance its position among a competing group of universities, those academic institutions are themselves growing and spending more for a variety of activities. Simply stated, the goal to improve K-State's ranking by 2025 does not involve static financial commitments. Dollars allocated to research must grow at a higher rate than other institutions if K-State's objectives are to improve its standing. These growing research dollars will be reflected in a variety of indicators, including more faculty, more students, more facilities, and a larger operations budget.

- The metrics by which K-State can be compared are compiled by the Center for Measuring University Performance ("CMUP") and published annually. Today, it would require total research expenditures of about $206,000,000 to rank among the Top 50 public research universities. By 2025, it will require approximately $300,000,000 in total research spending if those schools now comprising the Top 50 maintain their historical trajectories.

- Over the last 15 years, K-State has increased its total research spending at a relatively robust annual rate of approximately 5.8% percent per year. However, achieving its 2025-2035 vision will require a measurable increase in annual growth of total research spending. At the existing rate of growth, it could not exceed the spending level which today designates an institution as a Top 50 public research university. Those expenditures in addition will be

"There is extraordinary value measured in terms of economic return, local and state fiscal benefits, societal gains, partnership opportunities, university prestige, and visible community leadership."

difficult, if not impossible, to maintain without also increasing the capacity and infrastructure of K-State's academic and research facilities.

- The core assumption in our analysis is that the additional academic and research facilities provide this capacity and would enable K-State to grow substantially thereby reaching its 2025-2035 vision, then suggesting the following:
  - There is a nominal rate of growth by which K-State can increase its standing and positioning among other universities, albeit less than the expected threshold to rank among the Top 50 public research universities [the "Baseline"].
  - There is a higher, more aggressive rate of growth required to exceed the expected threshold to rank among the Top 50 public research universities that can only be achieved with added capacity [the "Vision"].
  - The real impacts to be considered are the marginal differences between nominal growth [Baseline] and enhanced growth [Vision].
- Today, K-State spends approximately $165,000,000 in total research which could be expected to reach $182,000,000 by 2025 with normal growth. To achieve the Vision which is largely dependent on more aggressive action, total research funding from all outside sources is expected to grow to no less than $360,000,000 by 2025, representing an average annual increase of over 10%. By 2035, this spending is expected to reach $450,000,000.
- The net marginal change in university activity generates incremental economic and fiscal effects as follows:
  - By 2025, continuing activities, presumably perpetual, stemming from the planned investment in additional academic and research will generate **$309M** in gross economic income annually across state and local economies. This output is associated with more than **2,460** and **$114M** direct, indirect and induced jobs and wages, respectively. As well, there will be gross fiscal benefits each and every year of nearly **$9M** flowing to state and various local governments.
  - By 2035, continuing compounded activities will generate **$454M** in gross economic income annually across state and local economies. This output is associated with more than **3,620** and **$168M** direct, indirect and induced jobs and wages,

respectively. As well, there will be gross fiscal benefits each and every year of nearly **$13M** flowing to state and various local governments.

+ The initial one-time impacts from the investment in additional academic and research facilities are also substantive, albeit occurring only through 2025. This investment in developing and constructing these facilities and related infrastructure is expected to generate a total **$857M** in gross economic income and **5,130** total jobs providing **$215M** in wages and salaries. Gross fiscal benefits from this activity over the construction period will also total **$24M**.

+ The development of NBAF (as measured in a separate analysis) along with the K-State 2025-2035 vision are expected to provide sufficient concentration of research activities to stimulate an additive economic impact from the creation of an industry cluster. NBAF alone is expected to create an additional **$80M** in economic output and **690** direct, indirect and induced jobs. The additional concentration of related businesses would create additional impacts not measured within this report.

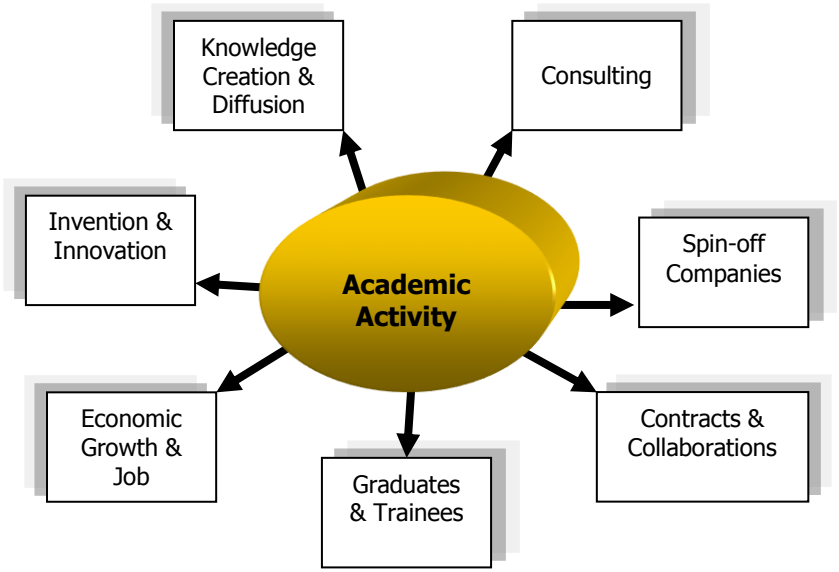
+ In addition to the observable and very quantifiable returns or benefits, there are returns which are not captured dealing with the value of education itself, partnerships forged in the community, potential for added research, and foundational links to new or emerging clusters.

Purpose of this document

As an academic institution, K-State has enhanced its regional role by emphasizing a combination of research, support for commercialization, private and public partnerships, and entrepreneurial leadership. These initiatives are purposefully intended to be both complementary and supportive. This report deals exclusively in the university's research efforts which are expected to grow at a rate sufficient to propel the school into a Top 50 public research university by a targeted date.

Effectively, research and grant dollars are direct investments in the regional community more so than simply in the university which, itself, serves primarily as a conduit for these funds. When invested in research, often in partnership with existing or emerging private interests, these dollars exhibit large multiplier effects benefiting the community, the region and the state as well as the university. These downstream returns created as the result of investment activity are rationally compared with the costs or benefits of creating them.

Research expenditures at K-State have grown geometrically in the last fifteen years. In 2016, research activities funded from all outside sources increased to a total of about $165,000,000 from only $75,000,000 in 2002. These dollars come from a variety of local, state, national, and foreign sources which together bring highly coveted new income into the Manhattan Kansas metropolitan region. New income from this research stimulates a very high level of economic impact to a geographic area while also supporting the community and university technical infrastructure which encourages still further investment and returns. These investment dollars create a multiplier impact related to the area's sales and services, employment, and earnings. Effectively, each dollar of funding received by K-State from outside the region creates a measureable incremental number of jobs, enhanced earnings, and other economic or fiscal outputs corresponding to increased sales and further production of goods and services. For the affected area and state governments, these activities are associated with further tax receipts.



Source: Adapted from Lynch and Aydlin, (2004)

The analysis takes two distinct forms. First, it identifies the business sectors most influenced by the undertaking, and second, it estimates

streams of revenue created as the result of ongoing development activity supporting the basic educational mission. The former focuses on the ways in which the university and its plans spur economic benefits by stimulating the creation of jobs and wages throughout the affected region. The latter focuses strictly on the fiscal benefits likely to accrue to the area's local governments if the plans are implemented. We believe this information has relevance and usefulness as policy makers explore their educational needs and spending options.

The purpose therefore of this report is to identify the quantifiable economic and fiscal benefits of the academic activity originating from K-State's 2025-2035 vision, albeit just one component of the broader value generated. This analysis is expected to provide all interested parties with relevant information and perspectives necessary for informed decision making.

Context Established by Other Universities

The Center for Measuring University Performance ("CMUP") is a research enterprise focused on the competitive national context for major private and public research universities. The CMUP issues an annual report that ranks the Top 50 research universities. Most national research universities measure themselves on a wide range of dimensions that the institutions believe important for determining improvement and success. At the same time, no single indicator or composite number accurately represents what an individual institution has achieved or can achieve in the future. To improve the quality and productivity of a major national research university, its faculty, students, staff, and supporters need to follow a number of indicators that, taken together, give a reasonable approximation of accomplishment and strength relative to the best universities in the country.

Many indicators serve this purpose, but most observers know that research matters more than anything else in defining the best institutions. In its annual reports, The CMUP provides both the total research and development expenditures and highly-competitive federally sponsored research and development expenditures as indicators of research scale. While the dollars give a good approximation of research activity, it is the faculty who provide the critical resource for university success, and the CMUP also reports the number of members of the National Academies among an institution's faculty along with the number of significant faculty awards earned as indicators of faculty distinction. Students provide a double indicator by reflecting both the externally perceived quality of the institution and providing with their own credentials an important contribution to that quality. For the graduate and research instructional dimension, the CMUP provides the number of doctorates awarded and the number of postdoctoral appointments supported; and the CMUP offers median SAT scores as indicators of student competitiveness.

Both private and public universities live on the resources generated from many sources, but critical to their success are the size of their endowments and annual giving. Endowment reflects the long-term strength of accumulated private support and in some cases institutional savings that delivers an income to important purposes every year. Annual giving provides an indicator of the current level of an institution's private contributions both to current expenses and towards increased endowment. By including both indicators, the CMUP gains the opportunity to note historical and emerging strength in private support for research universities.

The CMUP's annual report offers analysis and data useful for understanding research university performance in the context of other universities based upon the nine quality indicators described above. For the purposes of our analysis, we focused only on public universities the following eight metrics provided by the CMUP:

- Total Research (Dollars)
- Endowment Assets (Dollars)

- National Academy members
- Faculty Awards
- Doctorates Awarded
- Postdoc Students
- Federal Research (Dollars)
- Annual Giving (Dollars)

The **Table 3.1** summarizes data from the 2013 CMUP report as well as our estimates of threshold levels to enter the Top 50 public universities in each ranking category (more detail provided in **Appendix A**).

Table 3.1. Top 50 Public Research Rankings

CMUP Category	Mean	Median	Threshold Value	10 Year Growth (CAGR)	2025 Estimated Threshold
Total Research Spending ($, 000's)	$ 505,400	$ 417,500	$ 206,200	2.8%	$ 300,000
Federal Research Spending ($, 000's)	303,800	254,900	113,100	4.3%	200,000
Annual Giving ($, 000's)	151,500	118,600	73,600	2.4%	100,000
Endowment Assets ($, 000's)	1,546,000	781,100	438,100	5.2%	850,000
National Academy Members	33	22	6	0%	6
Faculty Awards	17	13	8	1.3%	10
Doctorates Awarded	490	450	260	3.7%	420
Post Doctorates	470	310	190	2.0%	250

Our methodology for the above analysis includes the following steps:

- Calculate the average and median amounts for all the Top 50 public research universities in each category.
- Show the amount for the 50th ranked university, which we defined as the threshold level to enter the Top 50 rankings.
- Using data from the CMUP's 2003 report, calculate the 10 year growth rate from the 2003 to 2013 threshold levels.
- Calculate the estimated 2025 threshold levels for each category given the actual 10 year growth rate from 2003 through 2013.
- Profile K-State's actual ranking from the 2013 CMUP data (calendar years 2011-2012).
- Calculate the difference between K-State's actual ranking from the current threshold levels as well as projected 2025 threshold levels.
- Show peer universities as identified in the K-State 2025-2035 vision plan.

Based on data shown in the **Table 3.2**, K-State is actually closest to the Top 50 ranking in the annual giving category. According to CMUP, K-State is ranked 88th in annual giving. K-State's dollar amount of annual giving is actually slightly higher than the threshold level for that category. However, due to adjustments CMUP makes to the reported numbers before ranking in the Top 200 research universities, K-State's ranking was 88th in that category. The next highest ranking for K-State was the number of doctorates awarded (106th) and total research dollars (107th).

Table 3.2. Current and Future Top 50 Public Research Rankings

CMUP Category	2025 Estimated Threshold	K-STATE Current	National Rank	Difference from Threshold	
				Current	2025
Total Research Spending ($, 000's)	$ 300,000	$ 163,500	107	$ 42,700	$ 136,500
Federal Research Spending ($, 000's)	200,000	74,400	131	38,700	125,600
Annual Giving ($, 000's)	100,000	75,400	88	(1,800)	24,600
Endowment Assets ($, 000's)	850,000	329,200	193	108,900	520,800
National Academy Members	6	1	n/a	5	5
Faculty Awards	10	5	n/a	3	5
Doctorates Awarded	420	162	106	101	258
Post Doctorates	250	103	121	86	147

Today, K-State spends approximately $165,000,000 in total research funding which could be expected to reach $182,000,000 by 2025 with normal growth. To achieve the vision which is largely dependent on more aggressive action, total research funding from all outside sources is expected to grow to no less than $360,000,000, representing an average annual increase of over 10%. Over the last 15 years, K-State has increased its total research spending at a relatively robust annual rate of approximately 5.8% percent per year. However, achieving its 2025-2035 vision will require a measurable increase in annual growth of total research spending. At the existing rate of growth, it could not exceed the spending level which today designates an institution as a Top 50 public research university. Those expenditures in addition will be difficult, if not impossible, to maintain without also increasing the capacity and infrastructure of K-State's research facilities.

K-State has identified a set of peer Universities that all rank as top public research institutions (see **Table 3.3**).

Table 3.3. Top 50 Public Research Peer Group

Cumulative Development	Top Category Counts	Total Research ($, 000's)	Federal Research ($, 000's)	Annual Giving ($, 000's)	Endowment Assets ($, 000's)	National Academy Awards	Faculty Awards	Doctorates Awarded	Post Docs
K-State University		$ 163,500	$ 74,400	$ 75,300	$ 329,200	1	5	162	103
Peer Group									
North Carolina State University	8	$ 374,500	$ 152,800	$ 100,300	$ 635,300	19	12	446	318
Washington State University	5	363,700	115,800	105,500	737,400	9	9	203	184
Colorado State University	3	321,100	230,700	29,900	225,400	5	5	235	233
Louisiana State University	3	281,200	96,100	105,800	357,600	2	5	322	158
Iowa State University	5	261,000	116,100	60,700	604,900	7	11	376	152
Oregon State University	3	227,800	146,100	101,600	403,600	3	15	197	189
University of Massachusetts	2	176,600	106,300	32,000	233,300	8	8	268	209
Oklahoma State University	1	162,800	81,900	95,200	452,200	3	4	212	58
Auburn University	1	161,800	59,100	63,700	461,700	1	3	247	42
Clemson University	1	135,700	49,400	71,300	482,900	2	6	220	44

It would be possible for K-State to achieve a designation of a Top 50 public research institution (according to CMUP) without meeting the singular goal of exceeding the expected 2025 total research spending threshold. For example, the last three peer group universities in the table above are included in CMUP's ranking based on meeting thresholds in at least one other metric, but not total research spending. In fact, by current measures, K-State spends more than these peer group institutions in the category of total research spending. However, K-State has not currently exceeded the thresholds for any one metric. For our analysis, the high correlation among total research spending and the balance of metrics evaluated by CMUP and the ability to more easily quantifying the direct and indirect impacts of research spending, suggests focusing on this single metric is most appropriate for evaluating the K-State 2025-2035 vision. But we recognize that the effort alone to reach a 2025 goal for total research spending may also lift other CMUP measures above the thresholds required to rank as a Top 50 public research institution, possibly earlier than the 2025 target. For example, annual giving to the university could surpass the required threshold much earlier than achieving total research spending. Achieving top positions within multiple CMUP categories would not change our analysis significantly, it would, however, result in K-State achieving a higher ranking among its peer group as an alternative of meeting the minimum goal of exceeding a total research spending threshold.

K-STATE 2025-2035 Vision

The mission of K-State is to foster excellent teaching, research, and service that develop a highly skilled and educated citizenry necessary to advancing the well-being of Kansas, the nation, and the international community. The university embraces diversity, encourages engagement and is committed to the discovery of knowledge, the education of undergraduate and graduate students, and improvement in the quality of life and standard of living of those we serve.

"K-State is committed to excellent teaching, research, and service that develop a highly skilled and educated citizenry necessary to advancing the well-being of Kansas, the nation, and the international community."

K-State is a comprehensive, research, land-grant institution serving students and the people of Kansas, the nation, and the world. Since its founding in 1863, the university has evolved into a modern institution of higher education, committed to quality programs, and responsive to a rapidly changing world and the aspirations of an increasingly diverse society. Together with other major comprehensive universities, K-State shares responsibilities for developing human potential, expanding knowledge, enriching cultural expression, and extending its expertise to individuals, business, education, and government. These responsibilities are addressed through an array of undergraduate and graduate degree programs, research and creative activities, and outreach and public service programs. In addition, its land-grant mandate, based on federal and state legislation, establishes a focus to its instructional, research, and extension activities which is unique among the Regents' institutions.

Through quality teaching, the university is committed to provide all students with opportunities to develop the knowledge, understanding, and skills characteristic of an educated person. It is also pledged to prepare students for successful employment or advanced studies through a variety of disciplinary and professional degree programs. To meet these intentions, the institution dedicates itself to providing academic and extracurricular learning experiences which promote and value both excellence and cultural diversity. K-State prepares its students to be informed, productive, and responsible citizens who actively participate in advancing cultural, educational, economic, scientific, and socio-political undertakings.

Research and other creative endeavors comprise an essential component of K-State's mission. All faculty members contribute to the discovery and dissemination of new knowledge, applications and products. These efforts, supported by public and private resources, are conducted in an atmosphere of open inquiry and academic freedom. Basic to the pursuit of this mission is the university's commitment to broad-based programs in graduate education at both the master's and doctoral levels.

Faculty, staff, and administrators share their expertise through service to the university and disciplinary organizations via outreach, engagement and extension-related activities. Their work provides support to numerous projects related to the goals, missions or aspirations of the departments, colleges of the university, and to the members of the professional community. Through outreach and engagement initiatives, partnerships are established with various stakeholders to translate knowledge and basic research into applications that address public needs. These service activities are integrally related to the land-grant mission.

Extension is governed by Kansas statutes that empower elected county councils and district governing boards with authority and responsibility to assess needs and conduct a local educational program in cooperation with Kansas State University and the United States Department of Agriculture ("USDA"). A network of local extension professionals and volunteers link Kansas State University faculty, the National Cooperative Extension System to the USDA, which produces high-quality educational programs.

The core assumption in our analysis is that the additional academic and research facilities provide the capacity necessary to significantly expand research efforts and would enable K-State to grow substantially thereby reaching its 2025-2035 vision, then suggesting the following:

- There is a nominal rate of growth by which K-State can increase its standing and positioning among other universities, albeit less than the expected threshold to rank among the Top 50 public research universities [the "Baseline"].
- There is a higher, more aggressive rate of growth required to exceed the expected threshold to rank among the Top 50 public research universities that can only be achieved with added capacity [the "Vision"].
- The real impacts to be considered are the marginal differences between nominal growth [Baseline] and enhanced growth [Vision].

Total research under a Baseline scenario would be expected to reach $182,000,000 by 2025. As identified earlier, to achieve the Vision which is largely dependent on more aggressive action, total research funding from all outside sources is expected to grow to no less than $360,000,000 by 2025 and $450,000,000 by 2035. Along with an enhanced flow of research spending and the addition of more than 2,100,000 SF of academic and research facilities, above normal growth is expected to occur with many of the complementing university infrastructure and services such as faculty, staff, and student enrollment. Included within these impacts are the associated spending and household income that does not pass through the university but is a direct result of the incremental student enrollment.

Table 4.1 summarizes the principal features and components of K-State Expansion plan which have been identified in more detail in **Appendix B**.

Table 4.1. Summary of K-State Marginal 2025-2035 Expansion

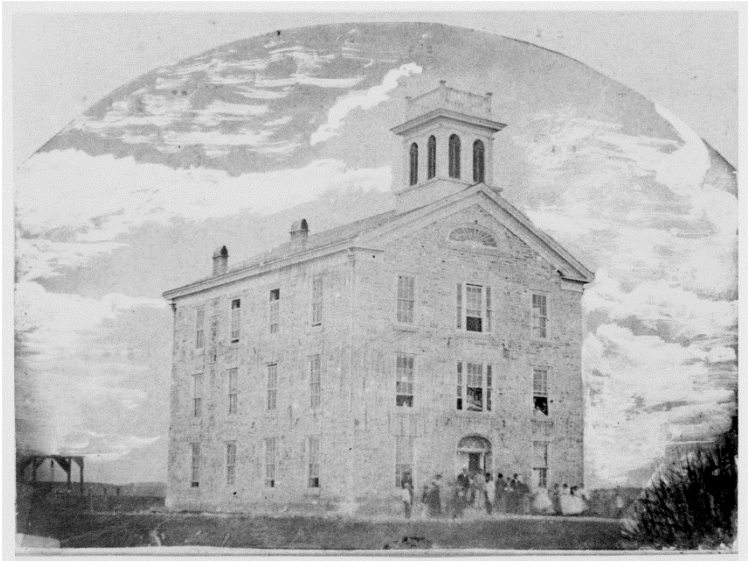
Component	2017-2025 Marginal Change	2017-2035 Marginal Change
Academic and Research Buildings (GSF)*	2,110,000	2,110,000
Construction Value (2025 dollars)*	$933,000,000	$933,000,000
Students (Enrollment)	1,580	2,140
Total Faculty and staff (FTE)	950	1,270
Faculty	180	230
Total University Annual Spending (2025 dollars)	$230,000,000	$350,000,000
Research Spending	$178,000,000	$262,000,000
Student Spending and change in HH Income	$31,000,000	$42,000,000

* Facilities required to support expansion through 2035 are assumed to be added by 2025.

These marginal changes from what would be expected to occur at K-State under a Baseline scenario represent the core inputs used to estimate total economic and fiscal impacts of the K-State 2025-2035 vision.

Framework underlying the approach and analysis

K-State got its start in 1858 when Bluemont Central College was founded and 53 students enrolled. Five years later K-State became the first fully operational land-grant college in America. Today, K-State is recognized by the Princeton Review as one of America's best colleges, and U.S. News & World Report lists the university among the top 75 public universities in the U.S. K-State offers more than 250 undergraduate majors and options within the Colleges of agriculture; architecture, planning and design; arts and sciences; business administration; education; engineering; human ecology; technology and aviation; and veterinary medicine. The K-State Graduate School offers 65 master's degrees, 45 doctoral degrees and 22 graduate certificates in multiple disciplines. The K-State main campus is located in Manhattan, Kansas representing a classic college town with more than 52,000 residents. The university also has a campus in Olathe and the Polytechnic campus in Salina.



The motivation or stimulus for investment in additional educational capacity is an expectation of economic growth and diversity achieved through new ideas, thought, formal and informal partnerships or linkages, improved technical proficiency, or means of implementation that may affect the region's social and economic order in diverse ways. The university experience and environment provide a platform for personal and community discovery. Stemming from this platform are richer personal knowledge, improved problem solving skills, and exposure to new or emerging technology and thought. These seed further knowledge and future opportunities.

Within the context of the university setting, a structured approach probing theories and their application as either natural or social science is central to the existence of thoughtful academic inquiry which links the community, faculty, students, and a diverse range of businesses in activities that are occurring in the classroom, laboratories, the field, library, and in corporate offices. As the university's reputation mounts through its direct and indirect interactions, it is positioned to maintain a leadership role and exercise tremendous economic leverage through transactional activity that supports its mission and purpose.

Universities, such as K-State, are immobile institutions which are strongly resistant to business cycle fluctuations. They are standard bearers in the community both symbolically and economically. To a specific region, educational institutions

are a vast source of newly inflowing dollars. But what might normally be thought of as new dollars might be less than obvious. In a setting where many students could elect to move away to pursue a higher education, the decision to complete a university education locally – at the benefit of the region retaining what might otherwise be lost dollars – might also be thought of as new money. Without forgetting the enhancement or creation of knowledge as their own important objectives, K-State is also a visible, stable and complex system of interconnected small and large businesses and worthy of being evaluated exclusively on strict economic performance. In that system, there are many layers to consider. There have been a number of studies tracing the various relationships between university activities and the broader community economic impacts they generate. As a group, these and other studies provide a useful lens for evaluating the content of the current work.

Discussed in Lynch and Aydin (2004), inputs to university operation come from households, government and businesses in the region. The university pays for these in terms of staff and faculty salaries and payment for equipment and services. These represent the university's backward linkages within the regional economy. The outputs of university activity can be defined as human capital formation, the production of knowledge and the creation of an attractiveness value. These outputs eventually lead to larger enrollment and greater revenues for the university. These represent the university's forward linkages within the regional economy and express the impact of knowledge transfer and development as having a greater time span than the input effects. The transfer of knowledge is especially felt in the knowledge produced and sold to export markets or that will help local firms and services become more competitive. This is usually through joint research and development initiatives and other research and analytical services offered by the university.

Still, however compelling it might be to characterize the university system as a business enterprise, this is an extremely limiting narrative about the role of education and its community benefits. While the literature consistently points to the societal benefits created through accessible and advanced educational options, it is challenging, if not problematic, to value the totality of the educational investment strictly in discrete economic terms simply because the financial trail is the only one easily followed. In reality, the substance of the value is enormous but it extends beyond the obvious and easily measurable (see **Table 5.1**).

Table 5.1. Areas Influenced by University-based Research Funding.

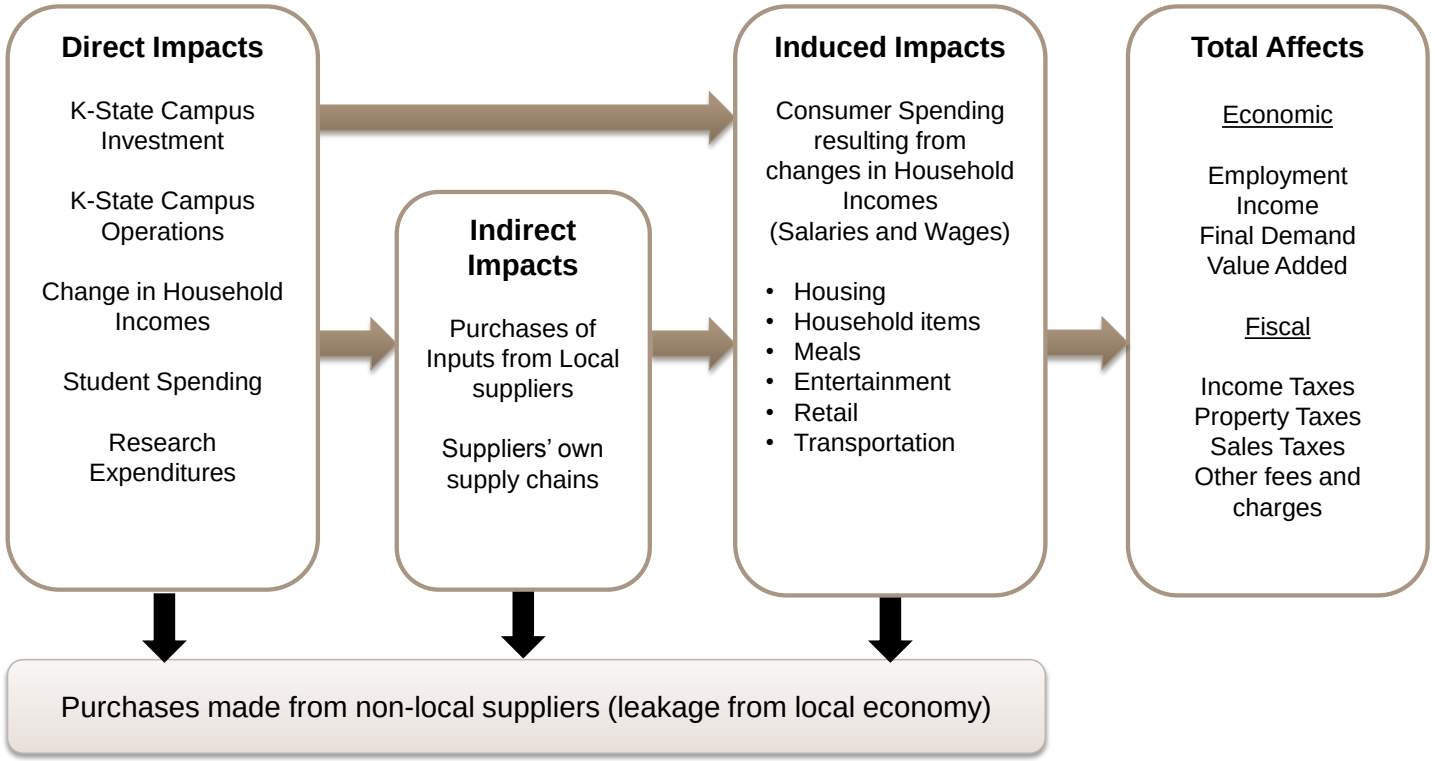
Area	Influences
Politics	Changes in the political structure, an increase in citizen participation, improvement in the organization of the political process
Demography	Effects upon population growth, population structure and mobility
Economy	Effects upon regional income, industrial structure, job market, and labor mobility
Infrastructure	Effects upon housing, traffic, healthcare services, retail
Culture	Greater offer in cultural goods, influence upon cultural environment
Attractiveness	Influence upon the region's image, regional identity
Education	Effect upon participation rate, changes in its quality
Social aspects	Effect upon the quality of life, the influence of the students, influence upon the region's image and regional identity

Source: Florax (1992) as presented in Garrido-Yseter & Galle-Rivera (2008)

Where the university and its departments acquire or purchase goods and services from suppliers, the path of economic benefit and the outputs of the present study are clear. Such purchases – including software, outside consultations, special equipment, special services and a range of normal supplies characteristic of any major enterprise - are in contrast with the gains achieved in future wages by enhanced academic programs, the knowledge base that may be sustained locally as productivity increases, faculty research that may be self-initiated and occurring without the assistance of external funding, or the overall societal gains experienced simply through a better educated population. Based on the usual currency of exchange for economic studies - such as this one centering primarily on inputs expressed in terms of salary and wages - the analysis is intuitively likely to yield an *under*valuation of the ultimate and real impacts even if there is a direct correlation between output and jobs.

Economic impact concepts, methodology and approach

Economic models are a mathematical representation of the varied concepts discussed above. They capture and quantify the particular business or transactional relationships resulting from expenditures or investments experienced among and between all business units or sectors and consumers located in a distinctly identified setting. These models are derived, in large part, from base economic theory emphasizing the inflow of new dollars into a region. Correctly identified and accounted for, these new dollars brought into the community produce an impact significantly greater than their totals alone imply.



Input-Output ("I-O") models such as IMPLAN, used in this case, trace the economic effects stemming from various transactional events which can occur on a non-recurring (one time) or recurring (continuing) basis. Non-recurring transactions and their effects are often associated with construction or extraordinary infusions of capital for highly

specialized or narrowly defined activities. Recurring transactions tend to reflect the ongoing and routine operations of a business or venture. The measure of these activities or events can be expressed in terms of expenditures or revenues, and IMPLAN permits the analysis of either to be highly localized. The ultimate economic effects take many forms but here the analysis focuses on the connections between certain transactional activities and job creation.

Consistent with the broad conceptualizations of university spending and activity modeled elsewhere, the business or transactional relationships of interest at K-State stem from investment, spending or receipts tied to design, execution, and ultimate operation of a major educational facility. Expectedly, given the enormity of the investment and spending contemplated, the economic activity calculated for the planned campus will occur over a period of time and phases. Those involved in this network of activity include the university itself, the faculty, other employees, students, campus visitors, businesses and their employees with links to the university and its people or students in the construction effort and the longer term operational effort.

Following this basic structure, the typical economic analysis estimates the total impact of a change in economic activity as the sum of direct, indirect and induced effects and dictate the choice of multipliers applied to the analysis.

- Direct impacts or effects are those most substantively attributable to the undertaking and relate to revenues generated or expenditures made in the local economy during the years of construction and operation. Here, these direct economic benefits stem from the activities associated with the construction and operation of additional K-State academic and research facilities and any related support facilities.

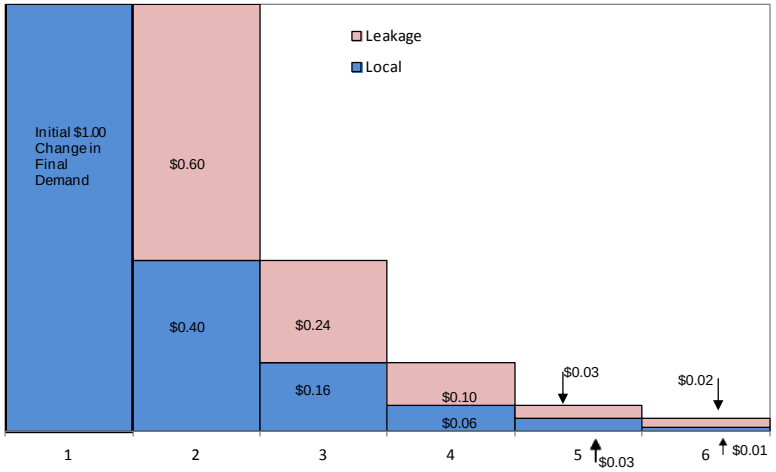
- Indirect and induced impacts or effects are those stimulated by subsequent or secondary rounds of expenditures such as businesses and/or employees or others that have some link to K-State operations.

With annual relevant expenditures in excess of $800M, K-State spends the equivalent of the region's largest corporations. As the discussion outlines, a significant portion of the institution's receipt's and expenditures stem from, or flow to, outside sources and constitute an otherwise unrealized stimulus to the regional economy. Those items in the budget identified which are truly retained within, or generated from exogenous sources, represent the *direct effects* created by the institution's presence. The school itself hires a significant number of area residents as faculty members or as other employee or staff and purchases a sizeable amount of goods and services from local businesses. This series of hiring and transactions lead to the *indirect effects*. A large portion of the money spent by K-State locally will subsequently be distributed or spent within many of the area's businesses. This spending yields increases in household income which, along with other university expenditures, increases total local transactions or spending. The increase in local sales stemming from consumer spending out of this source of income is the *induced effect*. The total impact of the initial direct dollars includes both the direct effects along with the indirect and induced effects. These effects will vary by location and

intensity following accepted relationships which exist between and among industry groups and their suppliers, more simply between and among K-State and its many customers, vendors, suppliers, or allied businesses.

The typical economic model assumes that a portion of dollars associated with an economic transaction is retained locally, then spent in subsequent activities, eventually leaking into adjacent areas or economies. The broader and more integrated the economy, the more these dollars are retained internally, but even in those advanced settings, leakage approaches 100% over time. The relative magnitude of job creation directly affects the impact, benefits, or downstream results that will be generated. Such impact, benefits, or downstream results as generally described here are calculated using the concept of a multiplier. Technically, this multiplier is the relationship between jobs and successive economic activity, defined specifically in this case to mean initial job creation and the subsequent spending, jobs and benefits stemming from the creation of the initial jobs. This sequence of interconnected relationships speaks to the direct effects which, in turn, cause indirect and induced effects. The example shown in the figure below illustrates the theory of the multiplier effect on $1.00 spent locally given a hypothetical multiplier of 1.66.

In the example presented, for every $1.00 of spending that enters the region from an investment in a new commercial enterprise, 40 cents is retained and spent within the region (for supplies or other needs). This respending may include payments to suppliers within the region for materials and equipment as well as for services. The remainder of the original dollar is considered leakage and therefore is spent outside the regional economy. In the second round of re-spending (column 3), 16 cents of the 40 cents is retained and spent within the region while 24 cents is leakage. This process continues until any additional spending within the region is considered negligible. The change in total business activity in response to the initial dollar spent would be $1.66. Effectively, the multiplier of 1.66 indicates that for each dollar of sales, 66 cents of additional business activity is generated in this example.



Source: Coughlin and Mandelbaum (1991)

Though the multipliers applied in this analysis are quite different, the successive economic effects for K-State will mimic precisely this pattern. The analysis of economic impact takes into consideration the inter-industry relationships among many businesses within a region and the capacity of a regional economy to respond to project and program changes. Again, those relationships are the ones which exist between and among K-State and its many students, vendors, suppliers or allied businesses. IMPLAN utilizes input-output data for more about 500 national industrial and commodity sectors to derive industry-specific multipliers for states and counties. The input-output

data come from federal government sources including the U.S. Department of Commerce, the U.S. Bureau of Labor Statistics ("BLS"), the BEA, and other federal, state, and local sources.

The application considers the extent to which K-State, treated as an industry or enterprise, buys from and sells to other parties in the course of producing its goods and services following a precise bill of goods. IMPLAN software generates regional purchase coefficients to estimate the portion of demand for a good or service that is satisfied locally.

Using a social accounting matrix ("SAM"), IMPLAN estimates the flow of each economic transaction taking place within a specified location. IMPLAN then estimates a multiplier effect for changes in final demand occurring in that unique industry and in all other interconnected industries sited within a defined geographic area. In this situation, there are numerous discrete transactions or events occurring in varied regions and settings to address, each with their own resulting impact on production or output, income, employment, and value added.

Output represents the imputed sales and production value of K-State, effectively treating it as a commercial enterprise, albeit a highly specialized one engaged in educational production, and the additional (indirect and induced) sales created as a result of the enterprise. The employment multiplier represents the total jobs created. The income multiplier measures the change in income generated as the result of each new income dollar earned beginning with university spending. The value added multiplier estimates the sum of labor income, indirect business taxes and business income. The indirect and induced impact stemming from these activities are reflected in the sales value of all other services or materials bought and sold to support the commercial enterprise(s) in which the initial investment was made. Together, these multipliers capture the direct effect of an expansion in final demand of employment plus all of the indirect and induced effects in response to the changes in outputs of the people, households and industries within the region brought about by the purchases made by employees and companies from other industries. As prospective commercial enterprises generate revenue, they, along with their employees, then also purchase both goods and services from other industries locally. All new expenditures or receipts will generate further multiplier effects.

Using the IMPLAN relationships described, this study quantifies, or evaluates, the value of K-State's investment or expenditure in terms of:

- Economic and revenue benefits of new and existing businesses.
- Permanent and temporary job creation.
- Earnings or income received.
- Economic and revenue impacts of a business on a local community.
- Supplier impacts of businesses on related local industries (banking, construction, retail).

- The value of economic development (downstream discovery).

In very simple terms, as K-State expends funds, its various departments purchase both goods and services from other industries locally, and on occasion, from itself. All new expenditures or receipts will generate multiplier effects. What may vary is the effect across segments of industry. Those industries which receive K-State dollars in kind or cash then themselves initiate purchase of inputs stimulating yet another round of purchases. These rounds are maximized in more mature economies where there are opportunities to acquire a greater share of inputs.

Without regard to the particular sources of the dollars to fund and continue the campus as described in the report, they are treated as monies or spending incremental to those currently received by the university. As such they constitute major investment in a new initiative that will have material effects on the local economy with distributive impacts extending to varied locations and business sectors. While this investment and any related spending are treated as discretely as possible using a bill of goods approach to isolate their specific and *but for* results, inevitably there is certain spending or activity that is shifted or supplanted from other areas that the analysis logically acknowledges.

The addition of incremental exogenous income stimulates the highest economic impact to any geographic area while supporting the technical infrastructure which encourages still further investment and returns. With much of an increasing enrollment coming from students outside the region, in many cases from other states and countries, the flow of dollars to, or from, university activities is substantively new to the area. These dollars include not only the obvious state allocated dollars for education and student paid fees but research dollars flowing from a number of sources. K-State has been an academic leader, based on its age and size, in bringing these outside dollars to the area. The expanding presence of K-State seems likely to add to is growing reputation as a creative and progressive institution open to partnership opportunities.

The key elements necessary for quantifying the total economic impacts that would result from the one-time investment in and the continuing operation of the K-State expansion center on the expected direct industry change relevant to each type of impact This direct impact is reflected in total construction spending for the additional 2,100,000 SF of academic and research facilities. Continuing impacts reflect industry change from marginal university spending, research spending, and spending and household income from marginal students.

Table 6.1. One-time Economic Impacts (2016 dollars)

2017-2025	Employment	Income	Output
Direct	3,266	$ 147M	$ 621M
Indirect	1,118	44M	149M
Induced	747	24M	86M
TOTAL	**5,130**	**$ 215M**	**$ 857M**

One-time construction spending over a nine year period for the academic and research facilities for this analysis is estimated at $933M in 2025 dollars. Our analysis assumed approximately 75% of those construction dollars would occur directly in the region. Using IMPLAN to generate direct, indirect, and induced impacts using multipliers for the Manhattan Kansas region generates economic income, employment, and wages in **Table 6.1**. The top employment sectors impacted by this spending are included in **Table 6.2** (see **Appendix C**).

Table 6.2. Top Employment Sectors

2017-2025	Employment	Income
Construction	3,266	$ 147M
Wholesale trade	234	12M
Retail – Non-store retailers	117	1M
Architectural, engineering	116	8M
Retail - Clothing and accessories	91	2M
Full-service restaurants	84	2M
Retail – Miscellaneous	73	1M
Limited-service restaurants	67	1M
Real estate	58	1M
Monetary authorities and depository credit intermediation	46	3M

By 2025, the continuing activity expected from the operation of the marginal expansion of K-State is a product of university expenditures, affiliated research spending, student spending, and changes in household income resulting from federal and state financial aid, grants, and loans. Based on current K-State expenditure patterns, it is expected that an additional student population of 1,580 and total administrative and faculty employment of 950 would sustain incremental annual expenditures of $230M. Research spending reflecting an expectation of the sustained increase required to exceed an expected 2025 threshold totals roughly $178M.

Table 6.3. Continuing Economic Impacts (2016 dollars)

2025	Employment	Income	Output
Direct	1,580	$ 85M	$ 200M
Indirect	430	20M	60M
Induced	460	15M	50M
TOTAL	**2,470**	**$120M**	**$310M**

Using IMPLAN to generate direct, indirect, and induced impacts using multipliers for Kansas state regions generates economic income, employment, and wages in **Table 6.3.** The top employment sectors impacted by this spending are included in **Table 6.4** (see **Appendix D**).

Table 6.4. Top Employment Sectors

2025	Employment	Income
State University	757	$ 37M
Research and Development	717	44M
Personal Care Services	78	1M
Real Estate	76	1M
Limited-service restaurants	72	1M
Marketing Research	56	2M
Full-service restaurants	47	1M
Retail – General Merchandise	43	1M
Architectural, engineering	43	3M
Management Consulting	37	2M

By 2035, the continuing activity from the marginal expansion of K-State is expected to total an additional student population of 2,140 and total administrative and faculty employment of 1,270 and sustain incremental annual expenditures of $250M. Marginal research spending continuing to grow from 2025-2035 is expected to total roughly $262M.

Table 6.5. Continuing Economic Impacts (2016 dollars)

2035	Employment	Income	Output
Direct	2,320	$ 120M	$ 289M
Indirect	630	27M	87M
Induced	670	21M	76M
TOTAL	**3,620**	**$168M**	**$454M**

Using IMPLAN to generate direct, indirect, and induced impacts using multipliers for the Kansas state regions generates economic income, employment, and wages in **Table 6.5.** The top employment sectors impacted by this spending are included in **Table 6.6** (see **Appendix D**).

Table 6.6. Top Employment Sectors

2035	Employment	Income
State University	1,114	$ 55M
Research and Development	1,056	64M
Personal Care Services	115	2M
Real Estate	112	2M
Limited-service restaurants	106	2M
Marketing Research	82	3M
Full-service restaurants	69	1M
Retail – General Merchandise	64	2M
Architectural, engineering	63	4M
Management Consulting	55	3M

State and Local Revenue Impact

The fiscal impacts in this analysis center on the public revenues associated with the particular set of economic activities defined earlier. Virtually all state and local taxes result from the flow of trade and businesses dollars, directly and indirectly, captured within economic income. Here, the analysis addresses the stream of major direct revenue receipts realized by the State, the County, and the City should plans for K-State's 2025 vison be implemented. Just as the economic impacts derive from theoretical considerations and yield their own currency, these impacts are also quantifiable in very precise measures tied to legally applicable taxes, levies, charges or assessments. Additionally, as in the case of the economic impacts, there are both one time or recurring continuing effects stemming from the construction of any project elements and their continuing operations in a distinctly defined setting.

The private sector and public sector both produce quantifiable fiscal impacts. As with economic impacts, there will be direct, indirect, and induce effects generated from those people, households, and businesses in the chain of relationships with K-State. IMPLAN algorithms produce these effects, showing total gross local, state, and federal receipts by general categories useful for broad analytical purposes. The initial assessment of fiscal impacts as part of this analysis is a product of the IMPLAN models used to estimate economic impacts. In the IMPLAN I-O impact analysis, the model generates changes in Value-Added, which is comprised of Employee Compensation, Proprietor Income, Indirect Business Taxes, and other Property Income. The levels of change in these components are unique to the level of direct effects specified in the economic analysis and the industries affected directly or indirectly. Therefore the fiscal impact outputs represent a reasonable estimate of gross tax receipts across the state and among local jurisdictions.

Focused on only the obvious economic measures and ignoring other societal benefits, the investment in K-State's 2025 vison clearly pays for itself and seeds the opportunity to provide significant benefits to the region.

Table 7.1. Continuing Fiscal Impacts (2016 dollars)

2025	State of Kansas	County*	Manhattan
Sales Tax	$ 2.5M	$ 0.4M	$ 0.3M
Income Tax	2.1M	-	-
Property Tax	0.1M	0.7M	1.7M
Other Taxes/Fees	0.3M	0.3M	0.5M
TOTAL	**$ 5.0M**	**$ 1.4M**	**$ 2.4M**

* Multi-county impacts

Continuing gross fiscal benefits estimated to be generated for the State of Kansas, County, and the City of Manhattan are summarized in **Tables 7.1** and **7.3** (see **Appendix D**).

Table 7.2. One-time Fiscal Impacts (2016 dollars)

2025	State of Kansas	County*	Manhattan
Sales Tax	$ 8.1M	$ 1.1M	$ 0.9M
Income Tax	4.1M	-	-
Property Tax	0.1M	2.2M	5.0M
Other Taxes/Fees	0.8M	0.5M	0.8M
TOTAL	**$ 13.1M**	**$ 3.9M**	**$ 6.7M**

* Multi-county impacts

One-time gross fiscal benefits estimated to be generated for the State of Kansas, Riley County, and the City of Manhattan total roughly **$23.8M** during the construction of the additional academic and research facilities as summarized in **Table 7.2** (see **Appendix C**).

Table 7.3. Continuing Fiscal Impacts (2016 dollars)

2035	State of Kansas	County*	Manhattan
Sales Tax	$ 3.7M	$ 0.6M	$ 0.4M
Income Tax	2.7M	-	-
Property Tax	0.3M	1.0M	2.5M
Other Taxes/Fees	1.0M	0.4M	0.6M
TOTAL	**$ 7.7M**	**$ 2.0M**	**$ 3.5M**

* Multi-county impacts

Impacts of NBAF and Potential Research Clusters

The economic activity quantified within the report above is limited to the economic effects of the K-STATE 2025-2035 vision and does not capture the potential impacts of other related businesses. For example, the National Bio and Agro-Defense Facility ("NBAF") is a planned United States government-run research facility that will replace the 1950s-era Plum Island Animal Disease Center in New York. NBAF will be operated under the authority of the U.S. Department of Homeland Security ("DHS") with the U.S. Department of Agriculture's Agriculture Research Service and Animal Plant Health Inspection Service Veterinary Services as primary research partners. The facility will be located on the campus of K-STATE immediately adjacent to the existing Biosecurity Research Institute and will directly create as many as 350 jobs. Construction on the 574,000 square foot facility officially began in May 2015 and is scheduled to become fully operational and permitted around 2022. **Table 7.1** summarizes the estimated annual continuing economic impact of NBAF

Table 7.1. NBAF Continuing Economic Impacts (2018 dollars)

2035	Employment	Income	Output
Direct	326	$ 25M	$ 45M
Indirect	362	15M	36M
TOTAL	**688**	**$40M**	**$81M**

Source: ImpactDataSource, 2011

The development of NBAF along with the planned expansion of research efforts by K-State is a strong catalyst for the development and creation of other bioscience firms that require the types of synergies and labor force that will result from the economic impacts described in this report. The K-State 2025-2035 vision and the presence of NBAF will likely contribute to a further concentration of bioscience-related firms in the area creating an industry "cluster" that will extend well beyond the economic impacts quantified within this report. Based on external research, industry experts generally agree that regional concentrations of related industries and firms will play a more important role in utilizing life science synergies to create sustainable economic development. As a result, the total economic impact across the state from the development of NBAF, the expansion of K-State research efforts, and potential development of additional industry clusters can reasonably be viewed as additive.

THRESHOLD LEVELS TO ENTER TOP 50 PUBLIC UNIVERSITY RESEARCH RANKINGS
SELECTED RANKING CRITERIA (CALANDER YEARS 2011-2012)

	Total Research X$1,000	Endowment Assets x$1,000	National Academy Members	Faculty Awards	Doctorates Awarded	Postdocs	Federal Research X$1,000	Annual Giving x$1,000	
Average	$505,368	$1,545,547	33	17	491	467	$303,772	$151,528	
Median	$417,479	$781,098	22	13	450	310	$254,870	$118,565	
Threshold (Value of 50th Ranked)	$206,207	$438,140	6	8	263	189	$113,072	$73,547	
10 Year Threshold Growth %									
Overall	31.7%	66.2%	0.0%	14.3%	43.7%	21.9%	52.3%	27.2%	
Average Annual (CAGR)	2.8%	5.2%	0.0%	1.3%	3.7%	2.0%	4.3%	2.4%	
Future Threshold Estimates									
2025	$300,000	$850,000	6	10	420	250	$200,000	$100,000	
Kansas State University									
Calander years 2011-2012	$163,494	$329,240	1	5	162	103	$74,414	$75,373	
National Rank (Among Top 200)	107	193	N/A	N/A	106	121	131	88	
Difference to Threshold Level:									
Current (2011-12)	$42,713	$108,900	5	3	101	86	$38,658	($1,826)	*
Based on 2025 threshold estimate	$136,506	$520,760	5	5	258	147	$125,586	$24,627	
Peer Group									
Auburn University	$161,785	$461,727	1	3	247	42	$59,061	$63,712	
Clemson University	$135,681	$482,866	2	6	220	44	$49,365	$71,304	
Colorado State University - Fort Collins	$321,130	$225,362	5	5	235	233	$230,661	$29,925	
Iowa State University	$261,016	$604,897	7	11	376	152	$116,109	$60,716	
Louisiana State University	$281,221	$357,602	2	5	322	158	$96,050	$105,784	
North Carolina State University	$374,446	$635,326	19	12	446	318	$152,790	$100,324	
Oklahoma State University	$162,786	$452,171	3	4	212	58	$81,855	$95,230	
Oregon State University	$227,752	$403,606	3	15	197	189	$146,069	$101,634	
University of Massachusetts - Amherst	$176,545	$233,317	8	8	268	209	$106,315	$32,017	
Washington State University	$363,678	$737,409	9	9	203	184	$115,775	$105,469	

Notes: The data above is from the most current report from the Center for Measuirng University Performance. The actual data is from the 2011 and 2012 calendar years.
*** - CMUP makes adjustements to reported numbers before ranking Top 200.**

Source: The Center for Measuring University Performance 2013 Top American Research Universities; GAI

KANSAS STATE UNIVERSITY - HISTORIAL AND FUTURE ACTIVITY

Year	Enrollment[1]	Employment (FTE)				Total Spending	Student Grant/loan	Net Spending	Research	Employment per 100 Students			Net Spending/ Employee (000's)	Spending/students (000's)	
		Faculty	Unclassified	Classified	Total					Faculty	Unclassified	Classified		Net Total	Research
2002	22,396	1,633	1,303	2,265	5,201	$ 486.0	74.4	411.6	75.0	7.3	5.8	10.1	$ 79.1	$ 18.4	$ 3.3
2003	22,762	1,582	1,347	2,212	5,140	$ 520.9	98.0	422.9	77.5	6.9	5.9	9.7	$ 82.3	$ 18.6	$ 3.4
2004	23,050	1,534	1,432	2,072	5,038	$ 531.7	101.8	429.9	75.5	6.7	6.2	9.0	$ 85.3	$ 18.7	$ 3.3
2005	23,151	1,539	1,485	2,025	5,049	$ 598.6	110.2	488.4	103.7	6.6	6.4	8.7	$ 96.7	$ 21.1	$ 4.5
2006	23,182	1,560	1,558	2,012	5,130	$ 677.7	131.2	546.5	134.7	6.7	6.7	8.7	$ 106.5	$ 23.6	$ 5.8
2007	23,141	1,598	1,633	2,007	5,239	$ 683.5	125.0	558.5	129.6	6.9	7.1	8.7	$ 106.6	$ 24.1	$ 5.6
2008	23,332	1,620	1,721	2,036	5,377	$ 705.0	125.2	579.8	130.1	6.9	7.4	8.7	$ 107.8	$ 24.8	$ 5.6
2009	23,520	1,635	1,819	1,846	5,301	$ 731.9	126.7	605.2	133.8	7.0	7.7	7.9	$ 114.2	$ 25.7	$ 5.7
2010	23,581	1,601	1,798	1,803	5,202	$ 645.5	27.3	618.2	128.7	6.8	7.6	7.6	$ 118.8	$ 26.2	$ 5.5
2011	23,588	1,699	1,790	1,795	5,284	$ 659.0	14.3	644.7	140.6	7.2	7.6	7.6	$ 122.0	$ 27.3	$ 6.0
2012	23,863	1,718	1,836	1,796	5,350	$ 680.5	17.7	662.8	146.2	7.2	7.7	7.5	$ 123.9	$ 27.8	$ 6.1
2013	24,378	1,748	1,863	1,794	5,405	$ 758.6	56.0	702.6	164.7	7.2	7.6	7.4	$ 130.0	$ 28.8	$ 6.8
2014	24,581	1,771	1,885	1,768	5,424	$ 781.7	57.2	724.5	167.7	7.2	7.7	7.2	$ 133.6	$ 29.5	$ 6.8
2015	24,766	1,817	1,946	1,752	5,515	$ 818.6	57.4	761.2	168.4	7.3	7.9	7.1	$ 138.0	$ 30.7	$ 6.8
2016	24,146	1,839	1,966	1,684	5,489	$ 818.4	60.1	758.3	165.1	7.6	8.1	7.0	$ 138.1	$ 31.4	$ 6.8
CAGR	0.5%	0.9%	3.0%	-2.1%	0.4%	3.8%	-1.5%	4.5%	5.8%	0.3%	2.4%	-2.6%	4.1%	3.9%	5.2%
BASELINE															
2020	24,540	1,890	2,130	1,550	5,570	$ 934	$ 64	$ 870	$ 174	7.7	8.7	6.3	$ 156.2	$ 35.4	$ 7.1
2025	24,870	1,940	2,360	1,370	5,670	$ 1,090	$ 70	$ 1,020	$ 182	7.8	9.5	5.5	$ 179.9	$ 41.0	$ 7.3
2035	25,210	1,990	2,620	1,210	5,820	$ 1,276	$ 76	$ 1,200	$ 189	7.9	10.4	4.8	$ 206.2	$ 47.7	$ 7.5
2025 VISION															
2020	25,070	1,960	2,310	1,650	5,920	$ 1,000	$ 70	$ 930	$ 221	7.8	9.2	6.6	$ 157.1	$ 37.1	$ 8.8
2025	26,450	2,120	2,860	1,640	6,620	$ 1,335	$ 85	$ 1,250	$ 360	8.0	10.8	6.2	$ 188.8	$ 47.3	$ 13.6
2035	27,350	2,220	3,340	1,530	7,090	$ 1,651	$ 101	$ 1,550	$ 451	8.1	12.2	5.6	$ 218.6	$ 56.7	$ 16.5
MARGINAL CHANGE															
2025	1,580	180	500	270	950	$ 245	$ 15	$ 230	$ 178	0.2	1.3	0.7	$ 8.9	$ 6.3	$ 6.3
2035	2,140	230	720	320	1,270	$ 375	$ 25	$ 350	$ 262	0.2	1.8	0.8	$ 12.4	$ 9.0	$ 9.0

Notes:
(1) Fall Total Enrollment; FTE = Full-time Equivalent

Construction Impact	Employment	Labor Income	Value Added	Output
Direct Effect	3,266	$ 147,265,557	$ 188,156,002	$ 621,246,587
Indirect Effect	1,118	43,978,920	78,033,322	149,376,325
Induced Effect	747	23,930,063	50,902,331	86,336,685
Total Effect	5,130	$ 215,174,540	$ 317,091,655	$ 856,959,597
Annual Average	570	23,908,282	35,232,406	95,217,733

Sector	Top Employment Setors	Employment	Labor Income	Value Added	Output
55	Construction of new educational and vocational structures	3,266	147,265,557	188,156,002	621,246,587
395	Wholesale trade	234	12,262,369	25,215,246	44,979,385
407	Retail - Nonstore retailers	117	534,681	2,980,680	8,143,654
449	Architectural, engineering, and related services	116	7,544,348	7,430,154	15,934,007
403	Retail - Clothing and clothing accessories stores	91	1,638,830	4,039,834	6,744,680
501	Full-service restaurants	84	1,466,012	1,622,859	3,402,787
406	Retail - Miscellaneous store retailers	73	991,834	1,335,806	2,333,227
502	Limited-service restaurants	67	1,041,667	2,484,604	4,925,923
440	Real estate	58	978,410	13,042,545	16,396,475
433	Monetary authorities and depository credit intermediation	46	2,699,659	4,681,527	7,920,943

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	Total	State	County	City
Dividends					51,631	$ 51,631			
Social Ins Tax- Employee Contribution	316,564	-				316,564			
Social Ins Tax- Employer Contribution	618,289					618,289			
Tax on Production and Imports: Sales Tax			10,001,316			10,001,316	8,077,986	1,068,517	854,813
Tax on Production and Imports: Property Tax			7,555,079			7,555,079	149,662	3,221,843	4,183,574
Tax on Production and Imports: Motor Vehicle Lic			163,034			163,034	128,235	20,355	14,444
Tax on Production and Imports: Severance Tax			233,708			233,708	183,824	29,179	20,705
Tax on Production and Imports: Other Taxes			330,918			330,918	260,285	41,315	29,317
Tax on Production and Imports: S/L NonTaxes			235,837			235,837	185,499	29,444	20,894
Corporate Profits Tax					578,624	578,624	578,624		
Personal Tax: Income Tax				3,487,532		3,487,532	3,487,532		
Personal Tax: NonTaxes (Fines- Fees				722,146		722,146		144,429	577,717
Personal Tax: Motor Vehicle License				204,517		204,517		204,517	
Personal Tax: Property Taxes				91,435		91,435	1,811	38,992	50,632
Personal Tax: Other Tax (Fish/Hunt)				139,982		139,982		27,996	111,986
Total State and Local Tax	$ 934,853	$ -	$ 18,519,892	$ 4,645,612	$ 630,255	$ 24,730,612	13,053,459	4,826,588	5,864,081

Continuing Impact (2025)	Employment	Labor Income	Value Added	Output
Direct Effect	1,578	$ 81,540,424	$ 101,956,667	$ 196,649,603
Indirect Effect	428	18,074,054	34,592,351	59,358,576
Induced Effect	455	14,530,375	31,159,571	52,659,834
Total Effect	2,460	$ 114,144,853	$ 167,708,589	$ 308,668,013

Sector	Top Employment Sectors	Employment	Labor Income	Value Added	Output
532	Employment and payroll of state govt, education	757	$ 37,249,882	$ 43,850,791	$ 43,850,793
456	Scientific research and development services	717	43,769,848	57,009,099	153,210,545
509	Personal care services	78	1,340,166	1,101,180	1,961,660
440	Real estate	76	1,287,680	17,165,220	21,579,310
502	Limited-service restaurants	72	1,123,330	2,679,389	5,312,099
460	Marketing research and all other miscellaneous professional, scientific, and technical services	56	1,944,709	1,847,718	3,429,159
501	Full-service restaurants	47	816,801	904,190	1,895,892
405	Retail - General merchandise stores	43	1,057,943	1,986,886	3,042,185
449	Architectural, engineering, and related services	43	2,800,716	2,758,323	5,915,240
454	Management consulting services	37	2,009,459	2,073,481	3,949,319

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	Total	State	County	City
Dividends					29,724	$ 29,724			
Social Ins Tax- Employee Contribution	190,252	-				190,252			
Social Ins Tax- Employer Contribution	371,586					371,586			
Tax on Production and Imports: Sales Tax			3,225,290			3,225,290	2,536,869	402,680	285,741
Tax on Production and Imports: Property Tax			2,436,411			2,436,411	22,678	727,301	1,686,433
Tax on Production and Imports: Motor Vehicle Lic			52,576			52,576	41,354	6,564	4,658
Tax on Production and Imports: Severance Tax			75,368			75,368	59,281	9,410	6,677
Tax on Production and Imports: Other Taxes			106,717			106,717	83,939	13,324	9,454
Tax on Production and Imports: S/L NonTaxes			76,054			76,054	59,821	9,495	6,738
Corporate Profits Tax					333,111	333,111	333,111		
Personal Tax: Income Tax				1,833,696		1,833,696	1,833,696		
Personal Tax: NonTaxes (Fines- Fees				379,694		379,694		75,939	303,755
Personal Tax: Motor Vehicle License				107,532		107,532		107,532	
Personal Tax: Property Taxes				48,076		48,076	952	20,502	26,622
Personal Tax: Other Tax (Fish/Hunt)				73,601		73,601		14,720	58,881
Total State and Local Tax	$ 561,838	$ -	$ 5,972,416	$ 2,442,599	$ 362,835	$ 9,339,688	4,971,701	1,387,466	2,388,959

Continuing Impact (2035)	Employment	Labor Income	Value Added	Output
Direct Effect	2,323	$ 120,020,174	$ 150,071,049	$ 289,450,539
Indirect Effect	629	26,603,383	50,916,831	87,370,488
Induced Effect	669	21,387,406	45,864,088	77,510,542
Total Effect	3,621	$ 168,010,963	$ 246,851,968	$ 454,331,569

Sector	Top Employment Sectors	Employment	Labor Income	Value Added	Output
532	Employment and payroll of state govt, education	1,114	$ 54,828,478	$ 64,544,423	$ 64,544,426
456	Scientific research and development services	1,056	64,425,282	83,912,269	225,512,150
509	Personal care services	115	1,972,604	1,620,838	2,887,387
440	Real estate	112	1,895,349	25,265,661	31,762,805
502	Limited-service restaurants	106	1,653,441	3,943,820	7,818,932
460	Marketing research and all other miscellaneous professional, scientific, and technical services	82	2,862,437	2,719,675	5,047,414
501	Full-service restaurants	69	1,202,258	1,330,886	2,790,583
405	Retail - General merchandise stores	64	1,557,197	2,924,518	4,477,823
449	Architectural, engineering, and related services	63	4,122,402	4,060,004	8,706,702
454	Management consulting services	55	2,957,743	3,051,978	5,813,043

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	Total	State	County	City
Dividends					43,751	$ 43,751			
Social Ins Tax- Employee Contribution	280,034	-				280,034			
Social Ins Tax- Employer Contribution	546,941					546,941			
Tax on Production and Imports: Sales Tax			4,747,337			4,747,337	3,734,043	592,709	420,585
Tax on Production and Imports: Property Tax			3,586,178			3,586,178	33,380	1,070,521	2,482,277
Tax on Production and Imports: Motor Vehicle Lic			77,387			77,387	60,869	9,662	6,856
Tax on Production and Imports: Severance Tax			110,935			110,935	87,256	13,850	9,828
Tax on Production and Imports: Other Taxes			157,078			157,078	123,550	19,611	13,916
Tax on Production and Imports: S/L NonTaxes			111,945			111,945	88,051	13,976	9,918
Corporate Profits Tax					490,309	490,309	490,309		
Personal Tax: Income Tax				2,699,036		2,699,036	2,699,036		
Personal Tax: NonTaxes (Fines- Fees				558,875		558,875		111,775	447,100
Personal Tax: Motor Vehicle License				158,277		158,277		158,277	
Personal Tax: Property Taxes				70,764		70,764	1,402	30,177	39,185
Personal Tax: Other Tax (Fish/Hunt)				108,334		108,334		21,667	86,667
Total State and Local Tax	$ 826,975	$ -	$ 8,790,859	$ 3,595,286	$ 534,061	$ 13,747,181	7,317,897	2,042,226	3,516,333

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