Forging a University Research Mission

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Abstract
The university exists to accommodate and implement the whole human learning process, and this must include creative scholarship and research. Thus research is not an optional activity of the university, not merely a legitimate pursuit of those who may be interested and willing to dedicate their spare time, nor an assignment justified to either the university or the professor by the resultant income in dollars and publicity. Rather, research is an inescapable responsibility of the university and an inseparable part of its total educational function. "The Place of Research in the University"

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CHAPTER 5

Forging a University Research Mission

JOSHUA L. ROSENBOOM

The university exists to accommodate and implement the whole human learning process, and this must include creative scholarship and research. Thus research is not an optional activity of the university, not merely a legitimate pursuit for those who may be interested and willing to dedicate their spare time, nor an assignment justified to either the university or the professor by the resultant income in dollars and publicity. Rather, research is an inescapable responsibility of the university and an inseparable part of its total educational function.

—“The Place of Research in the University”

By far the most visible features of the University of Kansas revolve around its undergraduate education mission. As the quotation above suggests, however, the university’s commitment to research and creative scholarship is at least as important in defining KU’s identity. Research has always been central to the university’s identity; at his inauguration in 1890, Chancellor Francis H. Snow observed that it was incumbent on the faculty “not only to teach the old truth, but also to discover new truth.” As Clifford Griffin’s history of KU’s first 100 years documents, the conviction that the university’s role extends beyond communicating existing knowledge to the production of new knowledge has been reaffirmed by every subsequent chancellor.

Nationally and internationally, it is KU’s role as a research university, where faculty extend the frontiers of knowledge and the next generation of scholars is trained, that is its truly distinctive feature. According
Burt Hall nuclear reactor, School of Engineering, 1965, an important research facility for faculty and students alike.

to the US Department of Education, there are over 4,600 institutions of higher education in the United States today. At most of them, however, the primary focus is on teaching. Only about 300 institutions are classified as research universities, and just 108 of these—including the elite private universities and most major state flagship universities—are classified by the Carnegie Foundation as ones of “very high research activity.” KU is one of these research-intensive universities.

Although KU’s identity as a research university has very deep roots, the meaning of this commitment has changed dramatically in the last 50 years. In these years, the university’s leadership has focused more intently on promoting research, and KU’s contributions to advancing knowledge have become more prominent nationally and internationally. The transformations that KU has experienced in the last half century have not been unique. Since the late 1950s, larger societal forces have contributed to a growing emphasis on science and engineering and the expansion of higher education, resulting in a substantial broadening of the nation’s research capability beyond the small group of elite private universities and select public campuses that dominated research and graduate training in the pre–World War II era. The changes that took place at the University of Kansas were thus a local manifestation of a broader transformation of the country’s university system.
Among the forces that have affected KU since the early 1960s, the most important were a rapid expansion in federal funding for scientific and engineering research and the expansion of undergraduate enrollments caused by the postwar baby boom. Between 1957 and 1967, inflation-adjusted federal research and development funding for universities more than quadrupled (see Fig. 5-1). Meanwhile funding agencies focused on distributing these resources beyond the select group of universities that had dominated federal research support during and immediately after World War II. As federal funding grew, support also expanded beyond the physical sciences and engineering. In 1965, the formation of the National Endowment for the Arts and the National Endowment for the Humanities created new sources of funding to support scholars in the creative arts and humanistic fields of study. In 1968, the mandate of the National Science Foundation was expanded to explicitly incorporate funding for the social sciences.

Rising federal investments in science and engineering and in other fields of scholarship coincided with rapidly rising undergraduate enrollments as the first wave of the baby boom generation reached college age. At KU, although rising enrollment placed substantial strains on the university, the new students also provided an important infusion of resources that helped support increases in faculty numbers,
new campus construction, expansion of graduate programs, and growing research capabilities.

The heady growth that characterized higher education in the decade after 1957 came to an end in the late 1960s. After 1968, the growth of federal funding for research and development slowed and became more unpredictable. Nonetheless, as the basis of American economic leadership shifted from manufacturing to innovation, science and engineering advances assumed a greater importance for government and industry alike. The increasing national focus on the sciences stimulated continued growth in both the demand for science and engineering research at the nation’s universities and the resources to support the expansion of university research capabilities across the late twentieth and early twenty-first centuries.

While the evolution of federal and industrial research funding and broad demographic forces were important factors influencing KU’s development after 1965, how these national forces affected the university was largely a function of the university’s past history and of strategic and organizational decisions made by the institution’s leadership and faculty in response to changing circumstances. The remainder of this chapter explores in more depth the interactions among these external and internal factors in transforming KU’s research mission.
Because the impact of the changing climate for external funding was greatest in the natural and social sciences, the focus of this chapter will be primarily on these disciplines, and especially on those areas of research in which KU has attained the greatest distinction. The focus will not be exclusively on the sciences, however, as KU was able to build on its strong traditions in humanistic research to secure funding for what became the Hall Center for the Humanities. With support from both philanthropic sources and the National Endowment for the Humanities, the Hall Center has become by the early twenty-first century one of the leading centers supporting humanities research in the nation, if not in the world. Because of space constraints, this chapter must confine itself primarily to the larger, organized research efforts that have garnered national distinction for the university and will not attempt to provide a comprehensive account of the myriad accomplishments of individual KU faculty members over the past 50 years.

THE PLACE OF RESEARCH AT KU IN THE EARLY 1960S

By virtue of its history and aspirations in its first 100 years, the University of Kansas was positioned to respond to the opportunities that the infusion of new resources for university research has created since the late 1950s. In the early 1960s, KU could point to well-established and recognized areas of research strength in zoology, entomology, bacteriology, geology, and chemistry, as well as important applied research and service activities of the Kansas Geological Survey and the Kansas Biological Survey. Moreover, in 1951, the legislature had, after repeated urging from Chancellor Deane Malott, authorized $300,000 (or $2.6 million in 2013 dollars) annually to establish a General Research Fund. Funds from KUEA, which helped to support faculty salaries and pay for buildings, specialized equipment, student tuition, and other expenses, were another key ingredient supporting the university's research activities, and one that would become increasingly important over time.

Nevertheless, as the university approached its centennial, its commitment and that of the state to the investments necessary to become a full-fledged research university remained somewhat tenuous. The amount authorized by the legislature for the General Research Fund had increased to only $304,000 by 1959 ($2.3 million in 2013 dollars). Moreover, a 1957 comprehensive survey of higher education in the state found that KU faculty reported spending 66 percent of their
time on teaching and only 16 percent on research. In 1961, when Alvin Eurich of the Ford Foundation conducted another assessment at the invitation of the Board of Regents, he reported as well that "research effort is too low."8

In the fall of 1960, shortly after his appointment as chancellor, W. Clarke Wescoe appointed a committee to examine the place of research at KU. Chaired by William J. Argersinger, professor of chemistry and associate dean of the Graduate School, the committee proceeded deliberately, delivering a lengthy report in June 1962. After reiterating the central place that research must play in the university, the report turned to the major determinants of the university's research activity, describing in turn the role of the faculty, libraries, museums, nature reserves, the physical plant, and the administrative structures that supported research activities before offering its recommendations.

The faculty were, the committee observed, the key ingredient determining the quality and level of research activity at the university. Confronted, however, by a lack of "knowledge and understanding of
why some university faculty members are dedicated to research and others are indifferent or even contemptuous toward it,” the committee urged a focus on selecting new faculty members inclined toward research, creating an atmosphere conducive to research by limiting demands for service and administrative tasks and placing a greater emphasis on research in promotion decisions.

If the committee’s recommendations maintained a level of generality, its review of the university’s support of the libraries and research collections was more pointed. While noting the relatively generous support that the libraries had received in the previous decade, the committee clearly noted the growing demands placed on library staff and budgets by a profusion of new publications, the addition of new programs and research areas, and anticipated growth in enrollment, all of which would require further commitments of resources.

Similarly, the committee pointed out the inadequate support that was provided to the university’s research collections. “Staff in our museums is in several cases almost tragically short,” its report declared. “From the standpoint of number of specimens and potential research importance, two of our most important research collections are the Museum of Invertebrate Paleontology and the Snow Entomological Museum.... Each is well known throughout the country not only for its importance ... but for its inadequate staff.”9 Materials in these collections must not, the committee concluded, be allowed to deteriorate due to neglect. Meeting the staffing needs of these collections, the committee urged, needed to be separated from the university’s teaching mission to ensure continuity, and additional space for research and storage needed to be built.

Space needs for research varied widely across disciplines, committee members noted, but they wrote that “every faculty member and graduate student should have space, adequate in size and free from distraction, in which he can carry on research appropriate to his responsibilities.” The committee further recommended that “at a minimum private offices should be provided for all full-time faculty members,” providing a hint of just how limited space must have been at the time.10

In its concluding section, the committee turned to the administrative organization of the university’s research activities. Reflecting the growing importance of research, it recommended the establishment of a standing committee on research to manage allocation of the General Research Fund to support faculty research projects as well as provide advice and recommendations to the administration on
research-related matters. The committee also noted the decentralized and potentially confusing arrangements that governed the receipt and disbursement of external research funding and proposed a legally distinct research foundation to consolidate management of sponsored research funds.\textsuperscript{11}

Given the general nature of many of the committee’s recommendations concerning faculty appointments, support for libraries and research collections, research space, and equipment, it is difficult to identify whether they had much immediate impact. On the other hand, a standing committee on research was created and exists today as a body of the Faculty Senate. Although it took considerably longer, the committee’s suggestion to consolidate research support in a separate research foundation was also eventually realized, but the path to achieving it was neither short nor direct.

LAYING THE FOUNDATIONS FOR A MODERN RESEARCH UNIVERSITY: THE 1960S

Around the time that the committee was laboring over its report, KU’s leadership was taking steps that would largely define the university’s areas of research excellence for the next half century. Consistent with the central importance the committee placed on hiring and cultivating faculty for their engagement with research, each of these measures entailed the recruitment or retention of a few key individuals.

Building a Program in Child Research

In the late 1950s, a small group of KU researchers led by Richard Schiefelbusch was embarking on a trajectory of research that would make KU a leader in the emerging field of applied behavioral science. Their success reflects the confluence of novel ideas with the availability of resources created by an expanding stream of federal funding. This occurred at KU because of the efforts in 1954 of Chancellor Franklin Murphy and George Waggoner, dean of the College of Liberal Arts and Sciences, to dissuade Schiefelbusch from leaving KU to accept a tenured appointment at the University of Illinois.\textsuperscript{12}

Seeking to find out what it would take to keep Schiefelbusch in Kansas, Murphy invited him to offer suggestions about what actions the university would need to take to be active in child research. Thinking that
he was leaving the university, Schiefelbusch offered a candid picture of the changes he believed necessary. Most important, he suggested, KU would need to create a natural environment for child research, such as a child care center that would allow researchers to collaborate in their studies and train their students. Shortly after this, Murphy offered to implement these changes if Schiefelbusch would stay at KU and assume leadership of the Bureau of Child Research, a largely inactive office that had been opened in 1921. Murphy also offered $30,000 in funding (equivalent to about $268,000 in 2013 dollars), an amount that covered the salary of the bureau’s director and its administrative staff, but left little to support any actual research.

Murphy had envisioned the Bureau of Child Research primarily as a coordinating body that would bring together disparate units from the Medical School and Lawrence campuses engaged in different aspects of child research. Schiefelbusch soon found, however, that there was little common interest across these units, and he thus embarked on a different path, turning the bureau into a research unit in its own right. To do this, he took an unorthodox path, forging a partnership with Howard Bair, the leader of the Parsons State Hospital and Training Center. Bair was seeking a way to address the needs of profoundly

By 1958, the team had received its first grant, for $56,000 ($460,000 in 2013 dollars), from the National Institute of Mental Health. Probing "the silence of profound mental retardation . . . [the team] found a possible passage to communication when they proved that these children could learn." When the results of their initial exploration were presented, the news spread quickly and a growing number of visitors found their way to the Parsons facility to learn more. This initial success led to a renewal of their original grant and a 50 percent increase in funding in 1961, as well as the addition in 1962 of a pre-doctoral training grant.

In 1963, Schiefelbusch took the project to a new level by applying for and winning a $2 million grant from the newly established National Institute of Child Health and Human Development (about $15 million in 2013 dollars). These funds supported the establishment of a coordinated research program that engaged scholars on the KUMC and Lawrence campuses as well as at the Parsons Center. Increased funding and greater visibility were accompanied by the recruitment of other researchers.

Despite the success at Parsons, Schiefelbusch recognized that he needed to cultivate a partnership with an academic department if the research program was to be sustained. The department he selected was Home Economics, which with his encouragement would soon be transformed into the Department of Human Development and Family Life (HDFL).

In 1961, Schiefelbusch had recruited Frances Horowitz to join the staff of the Bureau of Child Research. Horowitz had worked at the bureau briefly in 1960 after completing her graduate studies, and Schiefelbusch wanted to bring her back. To do so, he convinced the dean of the College, George Waggoner, to offer her husband, Floyd, a position in the English Department. At the time, KU had a nepotism rule that prevented Frances from being offered a faculty position, but Schiefelbusch was able to offer her an appointment at the Bureau of Child Research, and the couple accepted these positions.

By 1963, the nepotism rule had been changed, and Horowitz moved to a position in the Home Economics Department. Within a few years she had risen to become the chair of the newly reorganized HDFL. In 1965, Horowitz and Schiefelbusch successfully recruited four of the leading researchers in behavioral psychology—R. Vance
A 1970 research project at the KU Bureau of Child Research uses motion picture recording to evaluate and modify behaviors for children with intellectual disabilities.

Hall, Donald Baer, Todd Risley, and Montrose Wolf—all from the University of Washington, solidifying KU's position as the leader in the new field of applied behavioral science. This leadership in turn helped KU to compete successfully in 1967 to become one of the first of a national network of mental retardation (or mental disability as it is described today) research centers funded under federal legislation that had been enacted on October 31, 1963. By the early 1970s, KU researchers had added a fourth location, the Juniper Gardens Children's Project, initially located in the basement of a liquor store in an inner-city neighborhood in Kansas City, Kansas.

The research center funding has been renewed repeatedly since 1967 and continues to the present. During the 1970s and 1980s, the Bureau of Child Research spun off an increasingly diverse array of research groups dealing not only with child research but also with all aspects of the life span. These included, among others, the Gerontology Center, the Beach Center on Disability, the Work Group on Health Promotion and Community Development, the Center for Research
Two children work on writing skills at the Juniper Gardens Children's Project in Kansas City. The project was established in the 1960s by the Bureau of Child Research to study how children from inner-city neighborhoods learn.

Senator Bob Dole (right), Chancellor Gene Budig (second from right), and Dean Frances Horovitz (center) during a tour of the soon-to-be-opened Dole Center for Human Development, 1989.
on Learning, and the Merrill Advanced Studies Center. In the 1980s, the Bureau of Child Research negotiated several difficult transitions, including declining federal funding and the retirement of Richard Schiefelbusch from his position as director. Nonetheless, research activity continued to grow, and with the support of Senator Robert Dole, funding was secured for construction of a new building, the Dole Human Development Center, in 1989.

In 1990, the Schiefelbusch Institute for Life Span Studies (commonly called the Life Span Institute) was established as an umbrella organization, comprising the Bureau of Child Research and many of the offshoots to which it had given rise over the years. At the time, this conglomeration of researchers accounted for approximately one-quarter of the federal research dollars that the University of Kansas received. Since the 1990s, renewed growth in federal funding and astute leadership have helped the Life Span Institute to continue to grow and adapt to the rapid technological and scientific changes that have reshaped behavioral science research.

*Putting the School of Pharmacy on the Map*

At roughly the same time that Schiefelbusch's research efforts were starting to take off, the university also launched a concerted effort to expand and strengthen the School of Pharmacy. In the early 1960s, the school had just six faculty members and a budget of only a few hundred thousand dollars. In 1966, Chancellor Wescoe hired Howard Mossberg, then a young faculty member at Southwest State University in Oklahoma, to fill the position of dean, which had been left vacant after Duane Wenzel returned to teaching and research. Wescoe, Mossberg, and Ed Smissman, the chair of the Medicinal Chemistry Department, who had been recruited from the University of Wisconsin in 1960, then undertook an ambitious effort to bring Takeru "Tak" Higuchi to Kansas.

Higuchi, the Edward Kremers Professor of Pharmaceutical Chemistry at the University of Wisconsin, where he had taught since 1947, was a prolific scholar who was widely regarded as the "father of physical pharmacy" because of his emphasis on the importance of understanding the basic chemical and physical processes underlying pharmaceutical chemistry. Convincing an established scholar of Higuchi's caliber to leave Wisconsin took a major effort. To get Higuchi, the university offered him what was at the time one of only two Regents
professorships at the university. In addition, the university offered Higuchi the resources to develop a nationally recognized program in pharmaceutical chemistry and promised to house him and his students in a new pharmaceutical chemistry building that was already under construction, in what would become the West Campus.

Perhaps the strongest inducement that KU offered, however, was its willingness to support Higuchi’s interest in converting scientific discoveries to commercial applications. At Wisconsin, Higuchi was chafing under restrictions that the Wisconsin Alumni Research Foundation imposed on his interactions with the pharmaceutical industry. In contrast, the KUEA was keen to support such efforts, which it hoped would help to promote economic growth in the state.

While Higuchi was only one of several hires made in these years, he was the focal point around which the School of Pharmacy grew. Higuchi was a prolific scholar who published more than 200 articles and acquired more than 50 patents during his career. He was also an influential teacher, who supervised close to 200 graduate students. One colleague estimated that he had “trained more people in upper and middle management in the US pharmaceutical industry than anyone else, and that one-third of the nation’s pharmacy school deans and department chairmen [were] former Higuchi students.” Beyond these tangible results, however, Higuchi was instrumental in creating, in the words of one former student and colleague, a “culture of cooperation and good citizenship” that helped to nurture new researchers.

Higuchi’s example also served to encourage at the school a spirit of entrepreneurship, an engagement in economic development, and a desire to be involved in moving discoveries from the laboratory to the marketplace. In 1968, shortly after Higuchi’s arrival at KU, Alejandro Zaffaroni sought Higuchi’s participation in a California-based drug research firm. When Higuchi declined to relocate, Zaffaroni, with KUEA’s assistance, decided to construct a building on KU’s West Campus where Higuchi could carry out his work for the company. In addition to the building, Higuchi extracted 10,000 shares of stock in Zaffaroni’s Alza Corporation for the KUEA. The value of these shares appreciated significantly in the next few years, and the KUEA benefited handsomely.

In 1972, Alza chose to relocate its research to California, and its building reverted to the university. Using proceeds from the sale of the shares in Alza, Higuchi and the KUEA established a new corporation, INTERx, capitalized at $5 million, which would occupy the building originally built for Alza. Eight years later, in 1980, the pharmaceutical
Takeru Higuchi in 1977, Distinguished Professor of Pharmacy and Chemistry.
Professor Higuchi inspects new laboratory equipment in the physical pharmacy labs on the university's West Campus.
giant Merck purchased INTERx for $9 million, producing another large return for Higuchi and the KUEA. Higuchi remained in the role of president of INTERx as well as vice president for Merck's research laboratories.

In 1983, Higuchi and the KUEA spun out another private enterprise, Oread Labs, to take advantage of opportunities created by a newly adopted state economic development plan. Drawn up by two KU School of Business professors, Tony Redwood and Chuck Krider, the plan called for funds from the recently established state lottery to be distributed by a newly created entity, the Kansas Technology Enterprise Corporation (KTEC), to fund Centers of Excellence at the Regents institutions. Each center required a corporate partner willing to match state investments dollar for dollar.

Higuchi and the KUEA established Oread Laboratories as a for-profit company to provide the matching funds to establish the KTEC-supported Center for Bioanalytical Research. KUEA invested an initial $750,000 in the venture, and Higuchi rounded up other investors, including the City of Lawrence, which issued industrial revenue bonds to finance its investment. The start-up company ultimately raised $7 million. Thus, Higuchi and the KUEA were pioneers in developing many of the ingredients that would in the next few decades come to characterize university-industry relationships, such as university “incubators” and patent licensing agreements.

Ultimately, the ability to sustain productive relationships with industry depended upon creating and sustaining a first-rate school of pharmacy. In these years, Higuchi, Smisson, and their colleagues were successful in making the KU School of Pharmacy one of the field's leading centers of academic training and research. While recruiting Higuchi was central to the school's rising prominence, its success reflected a collective effort and was ultimately the result of the recruitment of many other talented scholars and the culture of collaboration between the school’s Departments of Pharmaceutical Chemistry and Medicinal Chemistry and faculty in the Department of Chemistry in the College. Important in tying these departments together was an emphasis on shared responsibility in the management of expensive research facilities such as mass spectrometry, nuclear magnetic resonance imaging, and x-ray crystallography. Building on these foundations, faculty in the School of Pharmacy have continued the traditions of cutting-edge research and engagement with technology transfer and commercialization established by Higuchi.
Another influential addition to the KU faculty in the early 1960s was Richard K. Moore. In 1962, the School of Engineering recruited Moore from the University of New Mexico, where he was the chair of the Electrical Engineering Department. At New Mexico, he had overseen a substantial expansion of the department and led its establishment of a PhD program. Having built the program, however, Moore was ready to move on and was receptive when KU offered him a distinguished professorship.¹⁸

Moore’s work in radar was sufficiently well known that in 1963 he was approached by the National Aeronautics and Space Administration (NASA), which was interested in developing tools for planetary observation to be used in the Apollo program.¹⁹ By 1964, Moore had become a member of the NASA Radar Remote Sensing Advisory Group. This was the beginning of a long-running relationship whereby he played an important part in developing techniques of microwave remote sensing in conjunction with NASA, the US Army, and the Office of Naval Research.

At KU, Moore was instrumental in founding the KU Remote Sensing Lab, in 1964. Recognizing that the value of data generated by
Richard Moore became director of KU’s Remote Sensing Laboratory in 1964 as well as director of the Electrical and Computer Engineering Research Laboratory.

Remote sensing would be greatest in disciplines outside engineering, Moore was quick to seek partners in other fields, including oceanography and geography. Among the important discoveries that Moore and his partners produced was the demonstration, based on experiments conducted on Skylab, that it is possible to measure from space both the direction and the speed of winds at the surface of the ocean.

Moore was also involved in work supported by the Office of Naval Research to map Arctic sea ice. It was this line of research that brought Prasad Gogineni from India to KU as a graduate student in 1979. After completing his dissertation, Gogineni was obliged to leave the country because of visa requirements, but Moore was instrumental in
Prasad Gogineni joined the KU faculty in 1986 and became a leader in research, teaching, and service in electrical engineering and computer science.

connecting him with European researchers working on related topics. A few years later, Gogineni returned to a faculty appointment at KU. At KU, Gogineni continued to pursue novel work in remote sensing. He also spent time at NASA as a program officer, which allowed him to see how complex, multi-institution research projects were built and managed. In 2005, drawing on both his scientific expertise and his experience with large-scale funding, Gogineni secured a grant from the National Science Foundation for an Engineering Science and Technology Center, which established the Center for Remote Sensing of Ice Sheets (CReSIS).

Working in conjunction with colleagues in aeronautical engineering to put sophisticated radar devices on unmanned aerial vehicles, CReSIS has become a major contributor to research documenting the effects of climate change on the polar ice caps. At the same time, CReSIS has stimulated other collaborations within the university, including a multimillion-dollar award from the National Science Foundation to support an interdisciplinary graduate education and research program focusing on the human causes and consequences of global climate change, led by Professor of Sociology Joane Nagel.
CONSOLIDATION AND ADAPTATION:
THE 1970S AND 1980S

In the late 1960s, the conditions that had fostered the growth of significant new research programs at KU came rather abruptly to an end. On the one hand, the external funding environment became considerably less conducive to growth. Federal funding for university research, which had grown much faster than the overall economy after 1957, slowed sharply after 1968. It did not begin to pick up again until the early 1980s (see Fig. 5-1). On the other hand, circumstances internal to the university shifted the focus of leadership from academic matters to other issues. Growing student unrest over US involvement in the Vietnam War coincided with, and to some extent contributed to, turnover in the university’s leadership.20

During Lawrence Chalmers’s tenure as chancellor, his relationship with Francis Heller, who had served as dean of faculties, the chief academic officer for the Lawrence campus, had grown increasingly strained. Shortly before his own resignation, Chalmers asked for Heller’s resignation and embarked on a more sweeping administrative reorganization. Then, in 1974, George Waggoner, who had served as dean of the College since the mid-1950s, suffered a stroke and was obliged to resign.

Chalmers’s departure ushered in a period of instability at the top for KU. In August 1972, Raymond Nichols, who had served as vice chancellor for administration, was appointed acting chancellor. Nichols’s background was largely on the financial and administrative side of the university, and he served primarily as a caretaker while a search was conducted for a permanent replacement. Although Archie Dykes, who succeeded Nichols in 1973, served as chancellor until 1980, his focus during much of this time was on repairing relations with the legislature and the citizens of the state, which had been severely strained by the student activism of the late 1960s and early 1970s.

Turnover at the top coincided with economic difficulties in the state, resulting in tighter budgets for KU. Robert Cobb, who succeeded George Waggoner as dean of the College, described the period from 1975 to 1985 as one of periodic rescissions. “We tried,” Cobb recalled, “to recruit the best faculty we could, tried to build the library and maintain infrastructure. . . . [But it] was more a matter of protecting and enhancing the programs we had in place.”21

Although the focus of the university’s leadership may have shifted away from building new areas of research strength, the 1970s and
Jacqueline Heath, KU alumna and medical technologist, at work in 1989 at KUMC in the microbiology section of the clinical laboratories.

1980s were by no means devoid of progress. In 1977, reflecting the growing importance of external research funding to the university and the increased complexity of the requirements attached to these funds, Chancellor Dykes initiated a reorganization of the university's research administration functions. Complementing this administrative reorganization, KU faculty continued to pursue individual research agendas, leading to new initiatives. As such, the work of discovery and dissemination of knowledge continued largely unaffected by the turbulence and turnover in KU's leadership. One of the most important initiatives to emerge in this period was the effort to establish a center for humanistic studies. Meanwhile, the successful research programs that were initiated in the 1950s and 1960s continued to grow and diversify. Even
with the slowdown in federal funding, these successful programs of research were able to compete for the support they needed.

**Formalizing Research Administration**

By the early 1970s, the university was receiving something on the order of $10 million to $14 million annually in federal research support (approximately $50 million to $70 million in 2013 dollars). This was perhaps a six- or seven-fold increase since the early 1960s. As the volume of support increased, the administrative challenges of managing these funds grew as well. More attention had to be given to accounting for the use of resources and ensuring compliance with federal accounting standards. At the same time, as the overall funding environment became more competitive, understanding the priorities and objectives of funding agencies took on greater importance.

Compliance with federal regulations regarding the conduct of research required increased attention as well. By the early 1970s, several well-publicized revelations about abuses of human subjects in government-funded medical studies at other institutions had led to significant tightening of regulations, requiring the university to develop new administrative oversight capabilities and ensure that scholars were complying with the rules.

In the late 1950s, the university had assigned responsibility for research administration to the Graduate School, and William Argersinger, who occupied the position of associate dean, had assumed this responsibility. In 1962, following completion of the committee report on the place of research in the university and reflecting the growing importance of research administration, Argersinger was appointed to a newly created position as associate dean of faculties for research. In 1972, as part of the administrative reorganization undertaken by Chancellor Chalmers, research administration and graduate studies were once again placed within the same organization. In this reorganization, Chalmers named Argersinger vice chancellor for research and graduate studies and dean of the Graduate School. Argersinger in turn appointed Professor of History Henry Snyder as dean of research within this newly established office.²²

Despite these changes in the location of responsibility for research administration, staff support remained quite limited. Throughout the 1960s and 1970s, Argersinger personally retained responsibility for managing a great many of the necessary tasks. “From about 1968 on,”
William J. Argersinger, in 1979, administrative leader of research activities at KU in the 1960s and 1970s.

he recalled, “my teaching in the department was perforce minimal. . . . I was on continuous call by the chancellor. . . . Most of the active faculty I knew by name, face and interest, including many at KUMC. It was necessary for me to travel frequently to Washington to visit Federal agencies.”

The demands of the position and the growing formalization of university administration that followed from the increased scale and complexity of the university in the early 1970s led Argersinger to tender his resignation in the fall of 1977. Following Argersinger’s resignation, Chancellor Dykes appointed a committee to consider the future organization of research and graduate studies at KU. After a lengthy review, the committee concluded that these two areas should continue to be part of a combined office and that “public service” should be added to its responsibilities to better promote the university’s links with state government, the business community, and the Kansas congressional delegation. In 1978, the university conducted a national search to fill the newly created position of vice chancellor for Research, Graduate Studies and Public Service and dean of the Graduate School.

The result of that search was the selection of Frances Horowitz, an active researcher who had for the past decade served as chair of HDFL.
Frances Horowitz, in 1989. Appointed vice chancellor for Research, Graduate Studies and Public Service in 1978, she was a specialist in the field of child development who began her KU career in 1961 as a research associate with the Bureau of Child Research.

A natural consensus builder, Horowitz purposefully staffed her office with faculty representing the range of disciplines engaged in sponsored research. She also embraced the challenges of research administration and cultivated a staff with the expertise to deal with funding agencies and effectively manage compliance with award conditions. At the same time, she established a "red tape" committee to identify bureaucratic processes that were annoying people and find ways to reduce these aggravations. One early change was her decision to allow non-faculty to serve as the principal investigators on sponsored projects, so long as they had the endorsement of a department or research unit to support the project if funded.

Horowitz also embraced the public service responsibilities of the new office. She cultivated a warm relationship with the Lawrence/Douglas County Chamber of Commerce and other local business interests and participated actively in their efforts at business recruitment. To increase KU's presence in Washington, DC, she hired a consultant there to work with the Kansas delegation to ensure that KU did not
miss opportunities to tap federal funds. These contacts proved important in securing federal funding for construction of the Dole Human Development Center.

*Establishing a Home for the Humanities*

The idea of creating a center for humanistic studies at KU first surfaced in 1969 when a small group of faculty who formed the Humanistic Studies Group proposed the idea to Chancellor Chalmers. Chalmers took no action, however, and the idea languished until 1975, when Henry Snyder, Richard DeGeorge, University Distinguished Professor of Philosophy, and Hal Orel, University Distinguished Professor of English, raised the idea again with the dean of the College. Describing their motivations, DeGeorge observed that it "was a period of little faculty turnover and we faced the prospect of growing old and stale together." The initial response from the College was lukewarm, however, citing a lack of funds and the likely opposition to the idea from the various departments.

Undeterred, the group drafted a proposal that was sent to the humanities faculty and secured the endorsement of the vice chancellor for Research and Graduate Studies, William Argersinger. With this sponsorship, Chancellor Dykes submitted a proposal to establish a center for humanistic studies to the Board of Regents. The Regents approved it in September 1976, but no funds, space, or administrative support were provided for it. "The future of the center did not look very rosy, and the message we got," DeGeorge recalled, "was that we were on our own."

DeGeorge and Snyder revised their earlier proposal emphasizing faculty development and promotion of humanities on campus and began to approach foundations. In 1977, due in large part to the persistence of Snyder, they were successful in securing a three-year grant from the Andrew W. Mellon Foundation for $315,000 (about $1.2 million in 2013 dollars), only the second grant the foundation had ever given to a public university. Planning a trip to New York, Snyder had sought to contact the foundation to schedule an appointment. Foundation officials, however, rebuffed his initial request, so, as Snyder later explained, "when I arrived in New York, I called the foundation and was again told not to come. . . . I went to their address and rang the doorbell. When they answered, I introduced myself and asked to talk to a program officer. I was ushered in to see one."
"We told you not to come and yet you did," he said. "Why are you here?"
"You did not tell me why you refused me, so I came to find out."
"We do not make grants to public institutions."
"That is a mistake," I said. "Let me tell you why."

Snyder went on to make the case that there were no private institutions of quality between the Mississippi River and California, and that the foundation would need to change its policy if it were to invest in supporting humanities in this region of the country. It took several more visits and a creative approach that emphasized the ways in which supporting the humanities at KU would benefit smaller private institutions in the region before the foundation was convinced, but in the end the grant was secured.  

A few weeks after the Mellon Foundation funds were obtained, the College dean appointed Snyder, DeGeorge, and Andrew DeBillki, University Distinguished Professor of Spanish, as co-directors of the center. Space for the center was found in two rooms on the main floor of the Spencer Research Library. In August 1978, the center hired its first full-time staff member to serve as assistant to the director; the following spring, the first faculty development seminar was offered. In addition to the seminar, the Mellon Foundation grant provided funding for six visiting fellows from private colleges in the region to spend a semester at KU, engaging in research and interacting with KU faculty. At this time, the center also undertook to manage grant funds for several other projects, including a museum and humanities grant secured by Marilyn Stokstad and a number of NEH-funded seminars. In 1980, the Mellon Foundation renewed its support, providing $200,000 (about $565,000 in 2013 dollars) for another two years.

In 1982, with the end of Mellon support approaching, the center and the libraries submitted a proposal for a National Endowment for the Humanities challenge grant seeking $1.5 million, the maximum amount allowed. To everyone’s great surprise, the proposal was successful, and the NEH awarded the university $1 million (about $2.4 million in 2013 dollars), receipt of which required the university to raise a three-to-one match from private funds. Roughly coinciding with receipt of the NEH grant, Ted Wilson replaced Richard DeGeorge as director of the center. Wilson, who had been chair of the History Department and a member of the center’s executive committee, had played an active role in preparing the grant proposal to NEH. It now fell to him to raise the $3 million in private donations required to match the NEH award. After considerable effort, Wilson, along with
Andrew P. Debicki, in 1990. A renowned scholar in Spanish and Spanish American poetry, he was named vice chancellor for Research, Graduate Studies and Public Service in 1992.
Vice Chancellor for Academic Affairs Deanell Tacha and KUEA leaders, were successful in convincing the Hall Family Foundation of Kansas City to make a donation of $3.5 million to KU to support the humanities. In recognition of this gift, the center was renamed the Joyce and Elizabeth Hall Center for the Humanities. Funds generated by the $4.5 million endowment were used primarily to support humanities faculty development and enhance library collections. Faculty development funds were used to support faculty travel to visit research collections and participate in scholarly conferences and provide salary supplements for recipients of major grants and fellowships so that they would not suffer a loss of income while on leave. Most important, however, funds were used to endow four Hall distinguished professorships, in American history, American art, American literature, and nineteenth-century studies.

With its expanded activities, the Hall Center was increasingly cramped for space, and in 1984 it found new room in the former Watkins Home, which had recently been vacated by the School of Social Welfare. Coinciding with the move, Wilson lured Janet Crow from her position in the History Department to serve as assistant director. Over the succeeding decades, Crow provided the stability and efficiency that kept the center on course, quickly becoming, in Wilson’s words, “the flywheel that made everything run in Watkins Home and in the humanities at KU generally.” Reflecting these contributions, her title was changed to executive director in 1993. In the early 1980s, the center was moved administratively from the College to the Office of Research, Graduate Studies and Public Service, reporting to Frances Horowitz, a change that would encourage its support of humanistic research across the university as a whole.

The infusion of funding provided by the 1983 grant helped to invigorate humanities research at KU and made the Hall Center a major presence on campus, with influence extending well beyond faculty in core humanities fields. For example, the center’s fall faculty seminar—in which a small group of faculty would engage in extended interdisciplinary dialogue about a timely and provocative theme—involved not just humanists but faculty from the social sciences, arts, professional schools, and the sciences in interdisciplinary dialogue. In 1990, the faculty fellowship program was expanded with the addition of a creative fellowship with the support of the dean of fine arts, Peter Thompson.

Another important step in the Hall Center’s development was the establishment of the Humanities Grant Development Office (HGDO).
In 1994, the College provided funding to hire a graduate student assistant to help humanities faculty locate grant and fellowship opportunities. This service was highly successful, and with the reorganization of research administration services, orchestrated by Vice Chancellor Barnhill after 1996, it was decided to expand this activity and hire a full-time staff person to support grant development. In early 1998, Kathy Porsch was hired to fill this role. From the outset, she set ambitious goals for the HGDO, lobbying effectively for additional graduate student interns to support her activities and mentoring both new and more established faculty about effective approaches to seeking external funding. The results of these efforts are evident in the sustained stream of grant and fellowship proposals submitted with the HGDO’s assistance and in the relatively high success rates of faculty seeking support. Despite a highly competitive funding environment, in most years since 1999, between 20 and 30 percent of KU faculty who worked with the HGDO to submit their applications were successful in obtaining funding.
The infusion of funds provided by the initial NEH challenge grant had established a firm foundation for humanities research, and the Hall Center’s subsequent directors, Andrew Debicki (1989–1993) and Hall Distinguished Professor of English William Andrews (1993–1997), built on these foundations, adding new initiatives and expanding a number of the Hall Center’s existing programs.30 By the late 1990s, Professor of Spanish and Portuguese Roberta Johnson had succeeded Andrews as director. In 1997, along with the center’s executive director, Janet Crow, and Kathy Porsch, she decided the time was right to make a second challenge grant application to the NEH. This proposal sought almost $600,000 from the NEH (about $890,000 in 2013 dollars), to be matched by close to $2.5 million raised from private donors. While the initial NEH challenge grant had focused on strengthening humanities research at KU, the aims of the second proposal were more expansive, proposing to establish major public outreach and education programs. In 2000, the Hall Center was awarded $500,000, with a four-to-one match contributing an additional $2 million in private funds.31

Having led the preparation of the NEH challenge grant, Roberta Johnson stepped down as director in 2000. In 2001, a professor of modern British history, Victor Bailey, replaced Johnson. With characteristic charm and energy, Bailey successfully undertook the task of raising the matching funds that the grant required. Not only did Bailey develop close relations with the Hall Family Foundation and many
other supporters of the humanities, he emerged as a visible and highly
effective advocate for the humanities on campus and in the state. With
the additional support provided by the Hall Center’s expanded endow-
ment, he led the expansion of its public engagement, supporting the
university’s Humanities Lecture Series and the Humanities Weekends
in communities across the state and the establishment of a resident
fellowship that allowed a prominent nonacademic scholar to spend
time at the university.

As its activities grew, it became increasingly evident that the cen-
ter had outgrown its space in the Watkins Home. In 2005, it moved
into a new home in the restored KU Powerhouse Building, providing
an exceptional facility in which to host seminars and public events
as well as attractive offices to house faculty fellows. By the time of
its move, the Hall Center had, under Bailey’s leadership, emerged
as one of the nation’s leading centers for humanities research and
an active participant in the international Consortium of Humanities
Centers and Institutes. Further strengthening its presence on campus,
it had also entered into a partnership with the Spencer Art Museum
and the Biodiversity Research Institute to engage faculty from across
the university to explore relationships between natural and cultural
systems. Building on these accomplishments, in 2011, Bailey, by then
the Hall Center’s longest-serving director, decided to pursue an un-
precedented third NEH challenge grant. Looking to the future, the
proposal sought funding to facilitate new approaches to humanistic re-
search, including the development of programs to advance collabora-
tive and interdisciplinary research within the humanities. Once again,
the center was successful in securing this funding, reflecting both its
past success and the creative vision that it has articulated for its future.

A RENEWED SENSE OF DIRECTION:
RESEARCH IN THE 1990S AND BEYOND

After stagnating for more than a decade, federal research and devel-
opment funding for colleges and universities began to increase again
in the early 1980s (see Fig. 5-1). KU was, however, poorly positioned
to take advantage of much of the funding that became available in the
1980s and early 1990s. Most of it originated with the National Insti-
tutes of Health and was directed toward biomedical research activities.
Although some units on the Lawrence campus—such as the School of
Pharmacy and the research centers that would become the Life Span
Institute—were able to compete effectively for these funds, the KUMC was dominated by its physician groups, which concentrated mainly on clinical income and devoted relatively little attention to building competitive research programs. As a result, KU did not benefit from the growth in available federal funds in the way that many other universities with academic medical centers did at the time.

Only in the mid-1990s, with the appointment of Robert Hemenway as chancellor, did the university embark once again on a concerted effort to expand its engagement in externally sponsored research. Hemenway’s arrival on campus in early 1996 helped to catalyze a set of strategic changes that solidified KU’s identity as a research university and created the organizational apparatus to support this commitment.

Creating the KU Center for Research

The idea of establishing a research foundation legally distinct from the university to manage sponsored research funds has had a long history. It dates back at least to the 1962 report on the place of research in the university, which had recommended the establishment of such a foundation. Noting that a number of other public research universities had established similar foundations, the report identified several advantages of the foundation model, including freedom from many of the restrictions on contracting imposed on the university as a state agency; the ability to invest idle funds and to carry funding forward across fiscal years; and the ability to ensure that research funds could not be diverted by the state for other uses. In addition, such an entity could consolidate many of the financial and accounting functions that were dispersed across different university units, reducing the administrative costs and faculty time invested in conducting sponsored research.

Such an entity, the University of Kansas Center for Research, Inc. (CRINC), was in fact chartered in June 1962 as a 501(c)3 nonprofit corporation. For reasons that remain somewhat murky, however, CRINC assumed responsibility only for sponsored research conducted by faculty affiliated with the School of Engineering. In November 1962, all of the assets and liabilities of the Center for Research in Engineering, which had been formed in 1958 by John S. McNown, dean of the School of Engineering, were transferred to CRINC.

The recommendation to establish a research foundation surfaced again in the early 1980s when Vice Chancellor Frances Horowitz charged a committee to look into the organization of research
administration.\textsuperscript{35} The recommendations of the committee were, however, complicated by the existence of CRINC. The committee struggled, without much success, to envision how the proposed research foundation would relate to CRINC, and, once again, resistance or inertia prevented the implementation of these recommendations.

Not until 1996 was it possible to move forward. The impetus for success at that time was the arrival of Hemenway. Much of the work of making the transition possible was accomplished by Howard Mossberg. Having been recruited in 1966 at age 33 to serve as dean of the School of Pharmacy, Mossberg had presided over the expansion of the school's faculty from 6 to 42 and had seen the school rise to the top ranks in its field. In 1991, after 25 years as dean, Mossberg had been asked to serve as interim vice chancellor for Research, Graduate Studies and Public Service after Frances Horowitz had accepted a position as president of the Graduate School and University Center of the City University of New York.

Although Mossberg chose not to be a candidate for the vice chancellorship, his interim appointment was extended when the candidate selected for the post, Andrew Debiciki, professor of Spanish, was awarded a fellowship the following year. After Debiciki returned, Mossberg remained in the chancellor's office, where he served as special counselor to the chancellor and picked up responsibilities for technology transfer and commercialization, which Debiciki was not inclined to undertake.

Thus, when Hemenway arrived on campus in the spring of 1996, he and Mossberg soon began a lengthy discussion of how to advance the university's research profile.\textsuperscript{36} Mossberg was an advocate of the research foundation model, and Hemenway was receptive to this idea, having come from the University of Kentucky, where such a foundation managed all sponsored research. Bringing Mossberg back as vice chancellor for research in 1996–1997, Hemenway charged him with the task of leading an implementation process that would transform CRINC from its role supporting School of Engineering research to a university-wide research foundation.

Over the course of the next year, working with a committee of faculty and administrators, Mossberg addressed the full range of practical issues involved in the transition: developing a policy for the distribution of research overhead, purchasing Youngberg Hall from the KUEA to house the expanded research foundation, and defusing many of the concerns of faculty about the impact that the change would have.
In parallel with these discussions, Hemenway conducted a yearlong study that led to a significant reorganization of university leadership. On the Lawrence campus, the resulting shift to a provost model of organization in which all of the university’s academic and nonacademic functions reported to the provost changed the focus of leadership in a way that elevated the importance of the research mission and ensured that university support functions were directed toward academic priorities. David Shulenburger, who had served as vice chancellor for academic affairs and was appointed as provost, recalled that with implementation of the provost model, research performance became an increasingly important consideration, in both individual promotion and tenure decisions and the evaluation of deans.37

As part of Hemenway’s reorganization, the Office of Research, Graduate Studies and Public Service was dissolved. Andrew Debicki remained dean of the Graduate School and assumed responsibility also for international programs, while a new position, vice chancellor for research, was established. A national search was conducted to fill this new position, and Robert Barnhill, a Kansas native who had earned a BA from KU in 1961 and gone on to earn a PhD in mathematics from the University of Wisconsin, was hired in 1997 to fill the position. Barnhill had spent the past 11 years at Arizona State University, first as chair of the Computer Science Department and then as vice president for research.38

Perceiving the need for a fresh start with the research foundation, one of Barnhill’s first actions was to rename it, changing its identity to the KU Center for Research. At the same time, Barnhill set about the difficult task of creating a unified research administration organization from the staff of CRINClC, members of the former Office of Research, Graduate Studies and Public Service, and members of the university’s financial services office who had supported sponsored research projects.

Mobilizing Resources to Advance the Research Mission

The administrative reorganization catalyzed by Chancellor Hemenway’s arrival raised the stature of research and helped to streamline the research administration functions of the university. Several other strategic changes created the environment in which the potential created by these changes could be realized. The first was Hemenway’s decision to change the way in which the university handled the indirect cost payments that were received on federal grants. In the past, these funds had been applied to cover operating costs of the university, but Hemenway chose to transfer these operating costs to the base budget and to use the indirect costs strategically to support research activities.

While a portion of the indirect cost funds were returned directly to the academic units or research centers where research was carried out, the bulk of the funds were received by the KU Center for Research and used to cover research-related expenditures. Rising research volumes, and hence rising indirect cost recovery, thus helped to fund increases in research administration staff, cover the start-up costs for new faculty, purchase research equipment, pay for maintenance of research space, and, eventually, pay the interest costs of bonds issued to pay for the construction of specialized research space on the West Campus.

One of the ways Barnhill utilized these resources was to encourage faculty to pursue larger, multi-investigator projects. Barnhill consciously sought out faculty he thought were well suited to lead such projects and provided encouragement and support needed to pursue these larger-scale projects. These investments resulted in a rapid increase in the number of large grants secured by the university. In addition to the support for the Center for Remote Sensing of Ice Sheets described earlier, among the first of these large awards was a $10 million National Institutes of Health Center for Biomedical Research Excellence award, which was at the time the largest single award received by
the university, and an award from the National Science Foundation’s Engineering Research Centers program to support the establishment of a Center for Environmentally Beneficial Catalysis, led by Bala Subramanian and Daryl Busch.

As noted in earlier chapters, Hemenway’s administration also secured passage of legislation that allowed the state’s universities to retain tuition revenues rather than having these payments go into the state general fund. With the passage of “tuition accountability,” the university initiated a program of tuition increases, targeting much of the additional funding to support 100 new faculty positions. The additional faculty positions were not to be spread across the university but were to be focused on building and extending existing strengths of the institution. These research “Megathemes,” as they came to be called, were identified as part of a campus-wide planning process conducted in 1998.40

Research at KUMC

Paralleling the changes on the Lawrence campus, Hemenway also embarked on a set of initiatives intended to revitalize research on the KUMC campus. One of the first steps in this process was to separate the management of the KU Hospital from the Medical School. This separation had first been discussed during the tenure of Chancellor Budig, but it fell to Hemenway to achieve this goal. As with tuition accountability, this change required approval in the legislature, and Hemenway worked closely with Governor Bill Graves to craft legislation that would establish a separate hospital authority. Once management of the hospital was insulated from state oversight, it could begin to make the management changes needed to increase efficiency and raise the revenues needed to modernize. Meanwhile, KUMC administrators were freed to focus on enhancing the research and educational missions of the school.

Early in his tenure, Hemenway committed the university to the goal of achieving comprehensive cancer center designation from the National Institutes of Health, making it the top priority not just for KUMC but for the entire university. The decision to focus on cancer as a priority was important because it cut across departments and units within the Medical School and could thus be a focus for raising research activity across the board. At the same time, it provided a vehicle to strengthen ties between researchers at KUMC and those on the
Lawrence campus, since KU’s strengths in drug discovery and development provided a distinctive focus for the cancer center project.

Barbara Atkinson, who had come to KUMC as chair of the Department of Pathology and Laboratory Medicine in 2000, emerged as a leader of the efforts to increase basic science research on the KUMC campus. In 2005, Atkinson replaced Donald Hagen as dean of the Medical School and executive vice chancellor.

At about the same time Atkinson assumed leadership of KUMC, Roy Jensen assumed overall leadership of the National Cancer Center initiative. Although he had grown up in Kansas, Jensen’s only connection with KU to that point had been through attending Ted Owens’s Basketball Camp as a high school basketball player. But Jensen had been on the faculty at Vanderbilt University Medical School when it was building a comprehensive cancer center and had a good understanding of what was required to build a successful program. Because of his expertise, Jensen emerged as a natural choice to lead the cancer center initiative when Bill Jewel, who had been organizing the effort, announced his plans to retire.

In one sense, the acceleration of KU’s efforts to secure cancer center designation and Jensen’s appointment could not have come at a worse time. Over the previous five years, the National Institutes of Health had pursued an aggressive expansion, doubling the amount of funding for biomedical research. This expansion came to an end in 2003, triggering a much more competitive national environment for research funds. KU’s cancer center initiative, however, coincided with a significant state investment to promote biomedical science. In 2004, the legislature passed the Kansas Economic Growth Act, which established the Kansas Bioscience Authority and dedicated a stream of tax revenue to promote bioscience-based economic development in the state. At the same time, Governor Kathleen Sebelius added a line item for the KU cancer center, providing $5 million in funding annually.

From its establishment in 2004 through 2013, the Kansas Bioscience Authority provided KUMC with close to $50 million in funding to help recruit both established researchers and rising stars to enhance KU’s cancer research efforts. In addition to the substantial state investments that the cancer center garnered, the regional benefits that a cancer center designation could be expected to bring helped the KUEA to raise substantial philanthropic contributions from the greater Kansas City community. In all, close to $350 million was invested in the effort by the time the National Cancer Institute announced the National Cancer Center designation in June 2012.
Bold Aspirations for the Future

Expanding the frontiers of knowledge is necessarily a dynamic activity requiring continued adaptation and adjustment. While the basic outlines laid down by Chancellor Hemenway and institutionalized by Vice Chancellor Barnhill have persisted since the late 1990s, one mark of their success has been the ability to accommodate and, indeed, facilitate the changes necessary to keep pace with the changing demands of the university's research mission.

On the Lawrence campus, when Bob Barnhill stepped down as vice chancellor for research in 2003, he was replaced by Jim Roberts. Roberts, professor of electrical engineering, who had been associate vice chancellor under Barnhill, stepped in first in an interim role and then, after the completion of a national search, was appointed in his own right. Under Roberts, KU embarked on a significant expansion of its West Campus research facilities. Major elements in this new research campus included the 106,000-square-foot structure named the Multidisciplinary Research Building, dedicated in 2006, and a Structural Biology Complex built in stages between 2004 and 2008. As was the case with several new research buildings erected on the KUMC campus, the financing of these buildings followed a new model in which the state used its bonding authority to allow the university to issue bonds, but funds to repay the bonds were to be generated from

Professor James A. Roberts in 1996, when he was named associate vice chancellor for Research and Public Service.
Facilities & Administration payments, often referred to colloquially as "research overhead," on federal grants to researchers using the new facilities.

In 2007, Roberts returned to the faculty, to be replaced by Steven Warren, who had been recruited to KU from Vanderbilt University in 2000 to be the director of the Life Span Institute. One of Warren's major initiatives has been the expansion of the university's technology transfer programs. In 2008, Warren and Paul Terranova, vice chancellor for research on the KUMC campus, established a unified technology transfer program for both campuses. Soon thereafter, the KU Center for Research began construction of a business incubator building, the Bioscience & Technology Business Center, to facilitate commercialization of KU technological innovations and collaboration between KU researchers and industrial partners. Opened in 2010 on the West Campus near the Multidisciplinary Research Building, the 20,000 square feet of office and lab space were quickly filled, and work began on a second phase.

In 2010, following the appointment of Jeff Vitter as provost and executive vice chancellor, the university embarked on a major strategic planning exercise. "Bold Aspirations," as it was titled, encompassed almost all aspects of the university's operations, but a significant theme in the planning process revolved around identifying the university's
research strengths and developing a more cohesive strategy of investing in and leveraging those assets to enhance its research profile. As the result of a yearlong process that began with more than 100 research initiatives proposed by individuals and groups of faculty, the university identified four broad, overarching research themes around which faculty recruitment and investments would be focused. It is too soon to judge whether these new interdisciplinary initiatives will significantly reshape KU’s research mission in the future, but since their selection in 2011 they have stimulated an ongoing conversation within the university community.

FORGING A RESEARCH MISSION

With the emergence of the information economy over the past half century, research has become an increasingly important contributor to the nation’s economic growth. One important consequence of this transformation has been a substantial growth in the volume of university research and development activities. Since 1957, when funding growth began to accelerate, federal research and development funding for colleges and universities increased at four times the rate of growth of national income, rising (in constant 2013 dollars) from $1.7 billion to $42.5 billion by 2011. This increase in the nation’s research effort was accomplished by a significant expansion of research capacity beyond the small cadre of elite universities that had dominated scientific research through the 1950s.

The evolution of research at KU is the local reflection of a process that took place nationally as a growing number of the nation’s universities became involved in sponsored research. As we have seen, there has always been a strong commitment at KU to advancing the frontiers of knowledge. And over its first century, the university had developed a number of research strengths, especially in areas with importance to the state’s population and state government. In addition, individual faculty members carried out programs of scholarship in their individual fields of expertise. The research interests of the faculty continue to be important in the aggregate but are so varied that they cannot be easily summarized or described.

Against this background, however, in the past 50 years the university has seen the expansion of a number of lines of research in which KU can claim leadership nationally and internationally—the most prominent of these being applied behavioral science, drug discovery
and development, and remote sensing. These strengths have, in turn, been important in supporting the university’s entry into related areas of research, such as special education and cancer treatment. The defining feature of each of these research areas is that they have grown well beyond the scope of a single individual’s research and require specialized research space, equipment, and a cadre of personnel to support them. Supporting these research capabilities in turn has required development of the administrative and leadership capabilities to compete for and manage the sponsored research funding that these activities require.

The foundations of these areas of research leadership were laid in the late 1950s and early 1960s through a series of recruitment and retention decisions. At least in retrospect, the decisions to recruit Tak Higuchi and Richard Moore and the effort to retain Richard Schiefelbusch appear remarkably prescient and forward looking. We cannot, of course, know what expectations senior administrators had at the time they made these decisions. Similarly, it is difficult at this distance to know what other recruitment efforts were undertaken but did not turn out to be as effective. What is clear is that at its root the research mission of the university is built on hiring and retaining the right people. Less obvious, but equally true, is that success in research requires providing the resources that these individuals need to do their work. Providing these resources has required continued adaptation in the university’s administrative apparatus and the construction of a significant staff of research administrators, research technicians, and other individuals. It has also required large investments in buildings and infrastructure, an effort considerably aided by the substantial fundraising strengths of the KUEA. Private funds have been especially important in supporting the construction of research buildings on the West Campus, making possible the success of the Hall Center for the Humanities and the successful effort to secure National Cancer Center designation for the university.

From the mid-1960s through the mid-1990s, KU’s research profile was largely driven by the legacy of the personnel decisions that were made in the late 1950s and early 1960s. New initiatives, such as the Center for Research on Learning, and the School of Education’s prominence in special education grew in part from these strengths. Although not a period of major new scientific initiatives, the 1970s and 1980s also saw the formation of what would become the Hall Center for the Humanities. Not until the arrival of Chancellor Robert Hemenway in 1996, however, did KU’s senior leadership focus
attention on the health of the research mission in a concerted manner. The organizational changes put in place at that time have enabled a second surge of growth in the university's organized research efforts.

Sponsored research expenditures are, of course, just one reflection of the university's research activity and do not adequately capture faculty research in the arts and humanities and in many of the professional schools. Nonetheless, they do serve as a marker of the level and nature of activities in the sciences that have been the focus of much of this history. Figure 5-2 traces the history of KU's research activity by plotting the fraction of all federally funded university research expenditures that is accounted for by KU from 1973 (the first year for which there are data) to 2011.

From the early 1970s, KU's share of federally funded research expenditures dropped sharply, until the late 1970s, when it stabilized. Despite some variation in subsequent years, there was no sustained upward movement until the 1990s, and especially after 1995 one can see a recovery of research funding numbers corresponding to the administrative and strategic changes put in place by Chancellor Hemenway. Although KU's growth in the share of total research expenditures leveled off after 2000, it has continued to climb in rankings relative to other national public research universities. By 2012, it ranked 38th in

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Figure 5-2: KU Total Federal R&D as a Percent of All University-Performed Federal R&D

![Graph showing the fraction of total federal R&D expenditures accounted for by KU from 1973 to 2011.](graph.png)
this group, an increase of 17 places in the 17 years since 1996, when it had been 55th. Thus, while KU is not positioned to enter the very top tier of research universities, it has successfully created the infrastructure to sustain a competitive position among the nation's major research institutions.