

# DISCOVERING AND INNOVATING TASK FORCE: IMPLEMENTATION PLAN

August 2009

The Discovering and Innovating Task Force was one of three formed in 2008 as part of KU's *Initiative 2015* strategic planning process. Subsequently, six small groups were created to propose how best to implement the recommendations of this task force. This implementation plan combines and summarizes the reports of the six groups.

One outcome of the process was affirmation of the fact that discovering and innovating are integral to teaching and sharing. Research is the foundation of teaching, especially for graduate students and post-doctoral fellows. The knowledge gained through research is meant to be shared with the public and with each other within the university community. Enhancing KU's research mission also benefits KU's teaching and outreach missions, for the benefit of all.

## Group #1: Infrastructure

### PLANNING

- Discovery and innovation requires complex infrastructure: modern buildings, laboratories, information technology and utilities. Having this infrastructure in place when needed demands a planning environment that involves all KU campuses.
  - **Recommendation:** Appoint a planning committee and charge it with the review of development plans throughout the university. This committee would make recommendations to the Lawrence Campus Executive Vice Chancellor/Provost and the KUMC Executive Vice Chancellor.
- Better planning is necessary because funding is less certain. State support is declining, but the vestiges of state control remain when it comes to buildings.
  - **Recommendation:** The KU Center for Research and KU Endowment have used their corporate flexibility to avoid much of the bureaucratic process and erect new facilities more quickly and at lower cost. This is the model we should follow in the future for facilities that do not involve state funding.
- Long-range planning is especially important on the West Campus. Poor utilities planning in the past proved needlessly expensive.
  - **Recommendation:** Optimize use of the centrally held 3% fee imposed on all new construction and update the West Campus master plan.
- "Green" construction and sustainability are important, but existing state policies require KU to use the low-bid (not necessarily "green") contractor.
  - **Recommendation:** Begin "green" construction with the design and the selection of architects and engineers, and provide them with the guidance and funding to accomplish this goal within the project budget.
- New construction and deferred maintenance are expensive. Bonding carries risks, and constrains future budgets and flexibility, as with the Multidisciplinary Research Building and Structural Biology Center on the West Campus
  - **Recommendation:** While outside can be useful for facilities that would not otherwise be built, it is not an optimal solution for most future infrastructure requirements.

- Past budget cuts at both campuses attempted to hold “instruction” harmless. Cuts in some administrative areas, e.g., Facilities Operations, Environment, Health and Safety, jeopardize KU’s ability to pass EPA laboratory safety and operations inspections
  - **Recommendation:** The interdependency of academic, research, and administrative functions must be more broadly recognized. In the face of a tidal wave of external regulation, KU is more and more dependent on an increasingly sophisticated and capable administrative structure and physical infrastructure.

## SCIENTIFIC CORES

- Scientific cores are essential laboratory research infrastructure, providing specialized equipment, services and/or technical expertise to a large number of users in many areas of investigation, at KU and elsewhere. They are an efficient, cost-effective way to perform common laboratory activities, and can also make a difference when competing for investigator-initiated research grants and larger grants, e.g., COBRE and INBRE.
  - **Recommendation:** The development and operation of cores at KU must be encouraged through targeted start-up funding and higher levels of ongoing support, possibly from F&A reimbursement.
  - **Recommendation:** A new core can be justified if it doesn’t overlap with an existing core, has a large base of potential users, and has a compelling scientific case. Where overlap currently exists, operations should be consolidated if possible.
  - **Recommendation:** A core must have a plan for becoming partially self-supporting. Institutional funding will be high at first and may diminish over time. Cores should seek investment from multiple sources, e.g., centers, institutes, departments.
  - **Recommendation:** A formal, bi-campus evaluation process is called for, one that involves knowledgeable individuals familiar with KU’s scientific core activities. These reviews should be based on objective data and address 1) justification for new cores, 2) operational success of existing cores, and 3) allocation or reallocation of resources to existing and new cores. Criteria for continued support include a high degree of relevance to KU research objectives, a substantial user base, a high level of service quality, and a largely self-supporting fiscal structure.

## INFORMATION TECHNOLOGY

- To support world-class research, instruction, creativity and healthcare, KU must design and implement a high-end technical infrastructure spanning all campuses that anticipates the needs of faculty, staff and students.
  - **Recommendation:** Establish an information architecture that drives this technical infrastructure. Pursue the early adoption of new infrastructure technologies when the benefits are compelling and the risks acceptable. Drive investment decisions based on user needs, capability and functionality, cost, and KU’s information architecture.
  - **Recommendation:** Initiate a regular (initially biweekly) planning process involving , the information technology and library leadership from all campuses, with the purpose of 1) optimizing communication and collaboration; 2) Identifying common activities and minimizing duplication; 3) Identifying common technology standards and best practices; 4) executing inter-campus initiatives including shared purchases; 5) assessing the environment for emerging technologies; 6) keeping informed about new developments from the state’s perspective; and 7) assessing on user requirements and satisfaction on an ongoing basis.

- Strategic goals for building this during FY10-12 should include the following:
  - **Recommendation:** Create access to resources and services through identity management strategies, rendering location and administrative affiliation irrelevant.
  - **Recommendation:** Maximize financial investments and potential productivity by coordinating the specification and purchase of software, hardware, services, etc.
  - **Recommendation:** Evaluate and deploy technologies and protocols that enable effective, high-quality communication and collaboration on and among KU campuses with colleagues and partners anywhere in the world.
  - **Recommendation:** Design and deliver reliable and expansive broadband connection continuity and quality of service configuration among campuses.
  - **Recommendation:** Through integrated planning, ensure the University's ability to recover and resume business in the event of disaster or sustained emergency.
  - **Recommendation:** Identify and implement strategies for sustainable service partnerships and shared service approaches, with a plan for service management and customer support for relevant Library and Information Services activities.

## Group #2: Research Communication

### OBJECTIVES AND STRATEGIES

- Enabling all KU researchers to disseminate their research more broadly and to communicate the value of their work to more people who can benefit from it will stimulate the culture of research and gain greater recognition for KU as a leader in research, innovation and discovery.
  - **Recommendation:** Focus on 1) the significance of research in increasing or transforming the body of knowledge and improving lives in Kansas and elsewhere; 2) the aggregate depth of research experience and expertise within a given discipline; and 3) the wide span of research across many different disciplines at the University. Overall, make KU research more visible and consumable.
- KU research communicators function independently within units, resulting in isolated and diffused messages and lost opportunities. It is important to achieve synergy so their collective effort presents KU as a comprehensive international research university.
  - **Recommendation:** Establish a framework for a collaborative environment in which research communicators can reach diverse audiences with clarity and consistency. This will help KU to "speak with one voice" and continue to build a reputation for leadership and innovation as a research institution.
  - **Recommendation:** Require research units and University Communications to develop a collaborative model for jointly funded research communications positions to cover strategically the full breadth of KU research.
  - **Recommendation:** Provide centralized resources and guidance for research communicators to accomplish their unit's mission while strengthening the university's overall message. This will require restructuring or combining existing resources and investing in necessary tools and capabilities, as with KU Libraries and the KU Web.
  - **Recommendation:** Clearly establish university priorities identifying those research disciplines that are part of the overarching KU message, business plan and strategy.

- **Recommendation:** Charge University Communications at Lawrence and External Affairs at KUMC with developing a centralized communications framework that provides leadership, strategies, tools, resources and enhanced relationships with embedded research communicators and the institutional communications offices.
- The communications environment has shifted to a new paradigm driven by the receiver's search for information. A modern research university needs the systematic capability to disseminate information, aggregate information, and be accessible 24/7 to those who seek it (both the academic and the general public). This approach will define roles and responsibilities for KU communications staff embedded in units and provide faculty direct assistance in developing the skills they need to disseminate the benefits of their work.
- Aggregating information about KU's research experts and the content of their work will rely on the university's web site for distribution. Aggregating this information will require coordination between key content managers and web infrastructure managers.
  - **Recommendation:** Organize the university's "inbound" communication capability so that people who seek expertise can find it among KU's experts.
- The diversity of skill and experience among KU Communicators is great. These individuals rarely communicate about research in any depth, nor were they hired to do so. Their efforts are guided by the priorities within their organizational unit. Faculty members whose allocation of effort includes research have a contractual obligation to publish their work. Communications on this peer-to-peer level are effective within specific disciplines but fail to inform the general public about the benefits of KU research.
  - **Recommendation:** Clearly establish with deans and vice provosts that research dissemination and communication is a university priority that requires their support.
  - **Recommendation:** Encourage schools and departments to recognize the importance of public communication of research as an integral element of scholarly activities by explicitly including it as an element of annual evaluations and as one component in evaluations for promotion and tenure.
  - **Recommendation:** Commit the financial, human and time resources required for University Communications at Lawrence and External Affairs at KUMC to implement these recommendations.

## EXPECTED OUTCOMES

- Research communications will provide a more comprehensive, cohesive image of KU. The university's reputation for transformative research has been built a brick-at-a-time by individual research units on both campuses. As a result, communication efforts are decentralized and poorly coordinated. A robust, systematic approach to research communications that engages formal (institutional offices) and informal (embedded communicators and faculty) resources will improve the internal exchange of information and provide a more comprehensive external perception of KU as an international research university.
- The benefits of research will be consumable and relevant to audiences. The ability to communicate about research is central to KU's mission. In addition to actively disseminating information, a modern university must promote its research to international research media as well as make it easily accessible to individuals and groups who actively search for information relevant to their needs. A systematic approach to aggregating information and packaging it so it is consumable, understandable and relevant to niche audiences will enhance KU's reputation and expertise in direct and applied research.

## Group #3: Research Collaboration Among Campuses

### KNOWING WHAT RESEARCHERS ARE ACTUALLY DOING

- Biomedical research collaborations within and among KU campuses appear to occur smoothly. Evidence suggests, however, that there is a substantial lack of knowledge among these scientists concerning each others research and the best ways to establish same-campus and bi-campus collaborations with fellow investigators. Faculty members tend to “pigeon-hole” themselves. They make little effort to gain awareness of the skills and interests of other individuals within and among campuses that could lead to research collaborations. Mechanisms for facilitating this awareness are limited or lacking.
  - **Recommendation:** Create indexed websites that contain easily researched information about the experimental approaches and funding of investigators in the biomedical sciences at KUMC and Lawrence.
  - **Recommendation:** Create more interactive websites on topics related to preparing joint proposals and submissions involving faculty in different departments, on different campuses, and in various centers, as well as guidelines for collaboration.
  - **Recommendation:** Find a common time in the week (or some other unit of time) when a limited number of classes are scheduled on either campus. Develop bi-campus seminars or meetings of collaborating investigators during these times, using distance-education models to facilitate these meetings.
  - **Recommendation:** Develop a more effective, accessible and functional interactive video system among KU campuses.

### FACILITATING INTERACTIONS, REDUCING BARRIERS

- Evidence supports the “center” concept as an effective model for promoting multidisciplinary research collaboration. Facilitating interactions among investigators may lead to the development of more centers within the university.
  - **Recommendation:** Identify common themes around which research can coalesce, and create research centers that include scientists from both campuses.
  - **Recommendation:** Improve methods of informing biomedical science faculty of the various research teams and research centers at KU. (An excellent example is the drug development team headed by Scott Weir.)
  - **Recommendation:** Re-define policies for hiring new faculty so they prioritize research themes and directions, versus teaching and administrative duties.
  - **Recommendation:** Develop better incentives and other means to promote bi-campus and cross-disciplinary collaborations. An example might be an internal grant funding pilot/bridging program, administered jointly by KUMC-RI and KUCR, that supports bi-campus collaborations.
  - **Recommendation:** Consider giving special or additional weight in promotion and tenure decisions to interdisciplinary and/or collaborative activities, as well as faculty efforts to promote or enhance such activities.
  - **Recommendation:** Improve reciprocity policies between campuses re: material transfer agreements, regulatory procedures, and tuition and fee structures.
  - **Recommendation:** Explore reciprocity opportunities with universities outside of Kansas, especially for Ph.D. students.

Deterrents to bi-campus research interactions remain. A general recommendation is that they be addressed, reduced, and/or eliminated. These include the following examples:

- Departments and schools sense a lack of equal distribution of funds in successful, bi-campus collaborative research programs, e.g., potential loss or reduction of F&A return to departments and schools as a result of the funding of such programs.
- There are differences in compliance standards, e.g., human subjects research policies/approval procedures and insurance. These differences add confusion and extra effort when developing collaborative projects among campuses.
- There is a perceived lack of balance between minimum legal requirements and the tightest possible constraints on policies related to research. Also, compliance offices are perceived as being focused on regulation rather than the facilitation of research.
- The campuses lack reciprocal library rights. Other issues arise from differences in definitions or expectations related to the awarding of PI status, eligibility for entering a tenure track, and distribution of F&A returns. These issues can make it difficult to recruit and retain faculty with multi-unit or multi-campus appointments, e.g., split appointments between KUMC and the Kansas City VA Medical Center.

## **SELLING OURSELVES BEYOND KU'S BOUNDARIES**

- **Recommendation:** Researchers should utilize the Community of Science database to get KU researchers' interests viewed by investigators around the globe. KU pays for all-campus access to this powerful research engine, but it is used primarily to locate funding opportunities. KU researchers should be encouraged to enter more information, both to promote their research and to identify potential collaborators.
- **Recommendation:** Review and modify KU's international contract standards to make them more conducive to promoting/facilitating international collaborations.

## **Group #4: Rewards and Recognition**

### **RATIONALE AND OPPORTUNITIES**

- Primary reasons for enhancing rewards and recognition for achievements include 1) increasing faculty productivity by providing support for activities, e.g., release time. Institutionally; 2) helping to retain valuable faculty, both by monetary reward and by public recognition; and 3) simply to reward and acknowledge valuable contributions to the institution, particularly by individuals who have a long history of service. Whether or not productivity increases, rewards and recognition are likely to have a positive effect on faculty morale and may therefore enhance general faculty productivity and retention.
  - **Recommendation:** Develop awards and rewards that increase research productivity. The purpose is not merely to honor past achievements but to provide resources, including time, to increase the scale and value of future research efforts.
- Current examples of rewards and recognition at KU fall into three main categories: distinguished university professorships and endowed professorships; teaching awards and research awards; and other forms of recognition. Currently, KU has approximately 75 University Distinguished Professors and 80 endowed professors. Examples of teaching research awards include the W.T. Kemper Awards for Teaching Excellence (20), Chancellors Club Teaching Professorships (9), and the Higuchi Research Achievement Awards (4).

- **Recommendation:** Increase the number and distribution of endowed and University Distinguished Professorships. This should be among the highest priorities for university fund raising. The goal would be to provide resources, e.g., reduced teaching, funding for doctoral students and postdoctoral fellows. Distinguished Professorships help attract the best researchers to KU and, just as important, reward the many top scholars who have made their careers here.
- **Recommendation:** Create three- to five-year competitive research fellowships for faculty at all academic levels. As with Distinguished Professorships, these would provide enhanced support and time for research. However, they would be for a limited term. Faculty would compete for these time-limited fellowships through a rigorous peer-review process. These fellowships could be associated with sabbatical leaves, i.e., providing support for the non-university half of a full-year salary.
- Other forms of recognition and visibility for research accomplishments include articles in internal newsletters and external publications. Also, the promotion and tenure process is a form of peer recognition.
  - **Recommendation:** Develop a Research Excellence Award similar to the Kemper Teaching Excellence Awards. As with the Kemper, the awards would provide high visibility to the recipients. (The award selection process should be transparent, even if the granting of the awards remains a surprise.)
  - **Recommendation:** Examine current publications and other public relations efforts to seek ways to highlight research accomplishments. Many major research projects involve teams of researchers. Greater attention should be given in publicity to Co-investigators and team members, versus just the PI or team leader.
- While an increase in awards and professorships requires identification of additional funds, enhanced recognition can be achieved at minimal expense in some instances, as when faculty achieve a prestigious national award from a professional society. Options for recognition could include an annual group dinner with the Chancellor, a monthly reception or ceremony, or an event within the faculty member's department. This need not be restricted to research accomplishments. It could also include national recognition for teaching and service.
- The conferring of emeritus status is an opportunity for recognition of both long service and the desire to continue to contribute to the University.
  - **Recommendation:** While retirement parties are the province of individual departments and centers, the university should sponsor a ceremony to celebrate all faculty who are being "promoted" to emeritus status. This would involve minimal expense and no additional long-term commitment, but would be a well-deserved acknowledgement of dedication to the university.

## **Group #5: Raising the Research Bar at KU**

### **FOUR KEYS**

The keys to enhancing the KU research mission are 1) to identify and emphasize research and innovation in areas in which we have leadership in the scientific world, or the potential for leadership, 2) to nurture those areas of inquiry, 3) to build around leadership areas, and 4) to draw upon research expertise in planning for the future.

- KU should identify and emphasize research and innovation in areas where we have leadership or strong potential for leadership.
  - **Recommendation:** Departments, schools, and centers should identify areas in the context of long-term planning, with identification of key faculty, and forward that information to research administration.
  - **Recommendation:** Use the external reviews of centers to identify emerging strengths, potential weaknesses, and areas that could benefit from strategic investments of resources.
- KU should nurture areas of inquiry.
  - **Recommendation:** Departments and schools should adjust tenure-faculty work load distributions for flexibility in faculty research effort levels. The 40-40-20 allocation of workload does not promote the flexibility needed to adjust to the ever-changing demands of academia. Clearly defined performance expectations for faculty and administration promote accountability.
  - **Recommendation:** Increase new research space and renovate existing space to accommodate cross-disciplinary collaborative investigations.
  - **Recommendation:** Increase the amount and quality of methodological and statistical support for research.
  - **Recommendation:** Reinforce collaborative work in the promotion and tenure process.
  - **Recommendation:** When possible, incentivize faculty financially to bring in additional revenue to the institution through grants, contracts, and consultation.
- KU should build around leadership areas.
  - **Recommendation:** Departments, schools, and centers should prioritize research productivity/potential and areas of research expertise in the selection of new faculty members, in order to align with long-term planning goals.
  - **Recommendation:** Showcase the work of the university's research centers when recruiting new faculty.
  - **Recommendation:** The development and enhancement of graduate programs that emphasize and recognize the importance of doctoral-level research should be explored as joint efforts between academic units and the research centers, including a sustained effort to write and submit training grants.
- KU should draw upon research expertise in planning for the future.
  - **Recommendation:** Convene representative researchers from centers and academic units to define research directions and priorities for the institution, as well as research benchmarks that provide evidence that the research bar is being raised.
  - **Recommendation:** Fully explore ways to make joint hires between the centers and various academic departments.
  - **Recommendation:** Explore new models for sharing F&A reimbursements with academic units, especially related to start-ups for new faculty, seeding new research ideas, and improving research infrastructure.
  - **Recommendation:** Enhance the identification and coordination of leveraging opportunities. This includes federal agencies looking to build programs of excellence, private or foundation donors, state agencies, and university-level resources.

## Group #6: Graduate and Post-Doctoral Training

### MANAGING GRADUATE EDUCATION

- Graduate training programs at KU need to be agile, strategic and entrepreneurial. The recent reorganization better aligns graduate education with the research mission of the university, and allows programs to operate as more independent structures within the various campuses and schools. While this independence is appropriate, the challenge for KU is in how to review, administer and fund programs in order to ensure facilitation, sustainability and enhancement of graduate education in this decentralized context.
- Regular and rigorous evaluation of program performance is necessary. Internal analysis and management as well as external reporting requirements necessitate the collection of aggregate data across differing programs as well as individual program data.
  - **Recommendation:** Meaningful, objective, and comparable metrics of the performance of graduate programs must be centrally collected, maintained and monitored. Each school and the College must establish a mechanism for collection and reporting, as well as a formal program review process to meet Board of Regents requirements and North Central accreditation standards. Successful graduate programs attract high-quality applicants, train students in a reasonable time frame, and place graduates in positions commensurate with their career goals. Such programs should continue to train graduate students. Unsuccessful programs should take corrective action or be discontinued.
- Accountability requires the codification of policies, procedures and due process for handling potentially difficult issues within a program. Policies must cover critical issues such as the proper handling of applications; responsibilities of advisors/mentors and students; proper use, collection and ownership (intellectual property) of thesis/dissertation data; and monitoring progress toward degree. Graduate programs should set, codify and follow acceptable policies and procedures that address such issues.
  - **Recommendation:** Graduate programs within each of the schools and the College must define the policies and procedures that apply specifically to their graduate programs and students, where appropriate. Common or core policies that apply to graduate studies and graduate students across the institution should reside in the Provost Policy Library and be reflected in the *Graduate Catalog*.
- Ideally, a graduate student's funding package should include a balance of teaching and research experiences. Teaching assistantships vary widely, depending on the program. In most departments, GTAs 1) meet the need for undergraduate instruction, 2) provide financial support for graduate students, and 3) provide training in teaching as a part of the educational experience. While teaching experience is important in the training of a graduate student, use of the GTA funding line as the department's sole source of support is not appropriate. It contributes to increased time to degree and diminished retention and completion rates. While department needs vary, attaining the appropriate balance between teaching and research is essential to the success of graduate training.
  - **Recommendation:** The size and growth of graduate programs should be based on the quality of the program and the availability of graduate-level or professional positions within the discipline, rather than the requirement to meet undergraduate teaching responsibilities. It may be appropriate to consider hiring instructors to meet undergraduate teaching responsibilities rather than maintaining a large graduate program driven by undergraduate teaching needs. Because GTA support is integrally related to running a successful graduate program, departments should integrate teaching, research and graduate education. Access to endowed research fellowships or assistantships would greatly enhance graduate programs.

## PROFESSIONAL DEVELOPMENT

- Doctoral students and post-doctoral fellows train to carry out research, but should also be trained in all aspects of their profession. For students aspiring to academic positions, this includes research, teaching, advising and mentoring, plus service to the institution and the profession. Because some KU Ph.D. graduates will obtain positions outside academia, students should be aware of and prepared for such positions. Current surveys of graduates suggest that enhanced training in alternate career paths, responsible conduct of research, and preparation for faculty and non-faculty positions are needed.
  - **Recommendation:** Improved professional development for graduate students and post-doctoral trainees should be a priority for KU. Areas to address include professional writing, oral and written presentation, grant preparation and proposal writing, mechanisms that facilitate interdisciplinary collaboration, and better preparation for the realities of a career search and early academic career process. High levels of participation and persistence are best achieved when they are integrated into current programs and supported at the departmental or school level.
  - **Recommendation:** While many aspects of professional development are most appropriately carried out at the departmental level, other aspects are most effectively and efficiently carried out at the school, College or even institutional level. Because resources are limited, sharing of training opportunities needs to be encouraged among all entities, including KU campuses where practical.
  - **Recommendation:** The Preparing Future Faculty and Preparing Future Professional programs should be enhanced to encourage participation and address the skills and resources necessary for graduates and postdoctoral fellows to succeed.
  - **Recommendation:** A summer seminar course on teaching technique, classroom management, effective presentations, etc. should be offered for all students.
  - **Recommendation:** Training and workshops in responsible scholarship should be developed and offered throughout KU, taking advantage of technology.
  - **Recommendation:** Support, via release time or financial incentives, should be provided for faculty who are willing to develop courses or programs that address professional development or innovative technology related to professionalism.

## INTERDISCIPLINARY TRAINING AND INTERCAMPUS PROGRAM INTEGRATION

- Traditionally, the training of graduate students, postdoctoral fellows and healthcare professionals has been departmentally-based. As boundaries between disciplines become less distinct, demand has increased for interdisciplinary instruction. The conventional model has administrative advantages, but restricts interdisciplinary interactions among faculty and students.
  - **Recommendation:** Greater emphasis on interdisciplinary training will enhance the quality of the educational and research programs of the participating units, and take greater advantage of the resources dedicated to these activities. KU should identify areas of interdisciplinary collaborations and establish programs that facilitate training of students in these areas.
- KU has excellent programs in many complementary fields. A number of intercampus research programs have flourished, some with decades of external funding. Even so, applications for intercampus training programs have faced challenges because of the perception that instruction will suffer because of geographic and institutional barriers.

- **Recommendation:** KU should establish policies and procedures and build the infrastructure necessary to foster and support intercampus research and instructional programs. In order to make resources that are unique to individual campuses available to all trainees regardless of affiliation, uniform policies on tuition, trainee stipends, F&A reimbursement, course credits and requirements are necessary. In addition, improvement in video conferencing and other communication technologies between campuses is also imperative. A joint committee may be one avenue for addressing intercampus integration issues in both education and research.

## RECRUITMENT

- To foster and monitor excellence, training programs should undergo periodic review. Key variables to measure include: quality and size of the applicant pool; number of students enrolled; quality of administrative leadership; funding for faculty research; evidence of faculty scholarship; recruitment efforts; average time to degree; student retention; level of satisfaction among current students and fellows; design, organization and objectives of the program; and collaborative interactions with other KU training and research groups.
  - **Recommendation:** Graduate, post-doctoral, and healthcare scientist training programs should undergo periodic review and modification as appropriate. Such reviews should be considered in the allocation of resources. Programs found to be weak should be terminated or reorganized to ensure resources are used effectively.
- Student support is a determining factor for applicants choosing among programs of equal quality. Stipends and fellowships must at least be equivalent to those offered by peer institutions in the region. The institution, department or faculty member should supplement the level of support if funds provided by granting agencies or the institution are insufficient. Salary support should be equivalent to that provided by other major research institutions, taking into consideration cost of living and the fringe benefit and tuition package. Fringe benefits should include subsidized health insurance for the student or fellows with optional family coverage at reasonable cost. Every effort should be made to identify resources to cover all graduate tuition and fees.
  - **Recommendation:** Graduate, post-doctoral, and healthcare scientist trainee stipends and fringe benefits should be comparable to those offered by other institutions competing for the same pool of applicants. Periodic survey of such support levels at competing institutions should be conducted.
- Graduate programs must be proactive in recruiting high quality students, with a goal of improving diversity in the graduate student body on campus. Programs should be well publicized, maintain an up-to-date website, and distribute regular mailings to selected departments, institutions, and authorities in the field. Key faculty should visit appropriate local and regional educational institutions for the purpose of identifying and recruiting applicants. Proactive recruiting is most effective, and most easily administered, if it is carried out by the department or program rather than by higher institutional units. Efforts should be made to identify and work closely with selected faculty at partner institutions with significant minority populations. Other efforts could include summer research experiences for undergraduates, and creation of a summer bridging program for incoming graduate students.
  - **Recommendation:** Graduate and post-doctoral recruitment should be proactive at the program level, with a particular emphasis on minority candidates. Resources must be specifically dedicated by the institution and the individual programs or departments for the support of recruiting activities.