



EXECUTIVE SUMMARY

EXTRAMURAL FUNDING ANNUAL REPORT

Fiscal Year 2012



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April 2013

To the Greater Kansas City Community:

We are pleased to provide the annual report of all extramural sponsored program activities for Fiscal Year 2012 (7/1/2011 – 6/30/2012) at the University of Kansas Medical Center (KUMC), which includes the School of Health Professions, the School of Medicine – Kansas City, the School of Medicine – Wichita, the School of Nursing, and the KUMC Research Institute, Inc. (KUMCRI).

This annual report summarizes the scope of basic and clinical research and other sponsored activities supported by the extramural funding community through grants, contracts and other mechanisms.

We would like to extend our thanks to all of those who have worked to provide the information contained in this report. A special thanks goes to the KUMC Office of Enterprise Analytics for providing the statistics and report design.

The KUMC Research Institute, Inc. remains committed to the growth and development of the KUMC biomedical research enterprise through its support of faculty and staff, and is an important partner in achieving the goals of the ten year strategic vision.

If you have questions regarding any information provided in the report, please contact the Research Institute at (913) 588-5436.

Sincerely,



Gregory S. Kopf

Gregory S. Kopf, Ph.D.
Associate Vice Chancellor for Research Administration – KUMC
Executive Director – KUMC Research Institute, Inc.

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RESEARCH AT KUMC



The University of Kansas Medical Center Research Institute, Inc. (KUMCRI) is a not-for-profit organization established to promote and support medical research. Created by the University of Kansas Medical Center (KUMC) in 1992, the Research Institute administers funded research projects on behalf of KUMC. The mission of KUMCRI is to support and enhance the research efforts of the KUMC faculty and staff for the benefit of the public.

The Research Institute's objectives are to:

- ◇ Serve KUMC by promoting and operating at the highest level of administrative and financial honesty and integrity;
- ◇ Foster individual and consortia partnerships between KUMC researchers and national, regional, and local research bio-medical communities;
- ◇ Enhance revenue to researchers and the University through the transfer of research discoveries and other information to the private sector; and
- ◇ Facilitate cooperative research interactions domestically and internationally between the KUMC and corporations, and with other research centers throughout the greater Kansas City metropolitan area, Kansas, nationally, and internationally.

Research Programs

Overview

Research programs at KUMC span a wide range of areas such as: aging, cancer, cardiovascular, child health and development, diabetes, host-pathogen interactions, integrative medicine, kidney/bone research, liver/gastroenterology, maternal/fetal biology, neuroscience, obesity, ophthalmology, orthopedics/bioengineering, personalized medicine (clinical pharmacology), public health, and reproductive sciences. The KUMCRI is in partnership with all of these programs.

Aging

The University of Kansas Medical Center faculty is engaged in research addressing a variety of problems related to aging, ranging from social concerns to cellular biology. Areas of research at the Landon Center on Aging include diseases of old age such as stroke and falls; health care technology as it pertains to the elderly, including mechanical, biomechanical, and biomedical engineering; social issues of aging such as the needs of caregivers and end-of-life issues; health policy and health services for the elderly; cognition and aging; brain plasticity and repair; and communication. These projects are conducted in an interdisciplinary setting. For example, the Brain Aging Project investigates lifestyle issues that impact brain aging in addition to examining the structure of the brain itself and how it changes with age.

Cancer

Cancer research is the number one priority of the University and includes research directed at understanding the causes of cancer, developing potential new forms of therapy, developing new therapeutics with enhanced efficacy and fewer side effects, and developing new cancer diagnostic and tumor imaging agents. The University of Kansas Cancer Center is transforming cancer research and clinical care by linking our innovative approaches to drug discovery, delivery and development to

our nationally accredited patient care program. Our partnership includes cancer research and healthcare professionals associated with the University of Kansas Medical Center and The University of Kansas Hospital in Kansas City, The University of Kansas in Lawrence, the University of Kansas School of Medicine in Wichita, and the members of the Midwest Cancer Alliance.

Cardiovascular

Research on the cardiovascular system includes basic studies related to adult stem cell-mediated repair of the infarcted heart; the role of cytokines and growth factors in cardiac remodeling; and protection of various organs against injuries sustained during cardiopulmonary arrest. In addition, several clinical studies are investigating the impact of life-style modification on cardiovascular outcomes, atrial fibrillation, and the utility of various echocardiographic parameters in the assessment of diastolic function.

Child Health and Development

Faculty conduct interdisciplinary research and provide clinical services related to the causes, characteristics, prevention and treatment of developmental disabilities in children. A major research emphasis is collaboration with community partners in developing and disseminating models that can be translated into community systems of care for these individuals.

Faculty are also involved in interdisciplinary leadership training of graduate students and fellows to equip them for leadership positions in research, university teaching, and systems of care for children with developmental disabilities.

Diabetes

The mission of the KU Diabetes Institute is to promote optimal health and well-being through the diagnosis, treatment, cure and prevention of diabetes and its complications. The research component of the Institute is split into three divisions: 1) basic science aimed at discovering mechanisms; 2) healthcare delivery encompassing clinical outcomes, educational research and epidemiology; and 3) translational research focused on applying the basic and clinical studies to the clinic and/or community setting. Diabetes research ranges from basic and behavioral science to clinical outcomes research and translational research. Funded research includes basic and clinical aspects of diabetic neuropathy, islet cell transplant, diabetic heart disease, autoimmunity in diabetes, community prevention, and use of innovative technologies to treat diabetes.

Host-Pathogen Interactions

Research on the relationships between the host and a variety of microbial pathogens includes the identification of microbial virulence factors and the effects they have on immune recognition and pathogen clearance. Immunologists collaborate with those studying the pathogenesis of infectious diseases to characterize mechanisms of pathogen entry into the host, pathogen replication and the response the host makes to infection, including host cell death, the development of cancer, and the expression of protective immune mediators. The identification of microbial virulence factors and the definition of immune evasion mechanisms used by pathogens are important aspects of these research programs.

Hoglund Brain Imaging Center (HBIC)

The Hoglund Brain Imaging Center (HBIC) brings together under one roof a unique combination of neuroimaging technologies. By providing an environment where basic and clinical neuroscientists can work together to integrate structural and functional approaches to the assessment of the brain in both health and disease, HBIC functions as a regional resource engaged in activities at the forefront of neuroscientific endeavors. Thanks to philanthropic (Forrest and Sally Hoglund), State, and Federal support, HBIC boasts state-of-the-art structural and functional imaging capabilities. For example, HBIC houses a 3T Siemens Allegra head-only MRI system that is capable of high resolution structural and functional MRI, MR spectroscopy, and diffusion and perfusion imaging. Complementing this human system is a 9.4T Varian MRI system for animal studies. HBIC is presently the only facility

in the world with capabilities for whole-cortex adult magnetoencephalography (MEG) and high-density fetal MEG. The center has a 151-channel whole-head adult unit with capabilities for simultaneous recording of 156 channels of EEG. In a separate magnetically shielded room, there is an 83 channel high-density custom-designed unit which can be used for fetal MEG and MCG studies. This unit can also be used for investigation of cardiac and gastrointestinal physiology.

Integrative Medicine

This emerging program investigates the effects of bioidentical ‘natural’ hormones on heart disease risk and associated parameters, as well as breast health, bone density and uterine morphology during menopause. Additional studies are examining the effects of intravenous vitamin C use during cancer chemotherapy and on the outcomes of treatment of hepatitis C.

Kidney/Bone Research

The Kidney Institute (KI) is an internationally recognized program with funded investigators in six School of Medicine departments and one School of Health Professions department. The mission of the KI is the promotion of research leading to a better understanding of kidney disease and the development of clinical trials ultimately for improved patient outcomes. KI investigators occupy open-access laboratory space on two floors of Wahl Hall East providing clinician-scientists and basic scientists with opportunities to closely interact and collaborate. Research strengths in the KI include kidney development and polycystic kidney disease, glomerular disease, bone-kidney interactions, and transport physiology.

Liver/Gastroenterology

Liver research at KUMC involves investigators from multiple basic and clinical departments who participate within the multidisciplinary Liver Center. Major research areas include toxic-, drug-, and alcohol-induced liver disease, viral hepatitis, liver cancer, coagulation disorders of the liver, and the biology of hepatic transport proteins. Active programs in drug discovery, cell signaling, nuclear receptor biology, epigenetics, pharmacogenetics, and metabolomics support these research areas. In addition, the Liver Center maintains a clinical tissue specimen bank for translational research in these areas. Clinical and translational research programs in gastroenterology include strong programs in Barrett’s esophagus and gastrointestinal-esophageal reflux disease (GERD), GI cancer prevention, and advanced endoscopic techniques.

Maternal/Fetal Biology

Scientists in the Institute of Reproductive Health and Regenerative Medicine investigate genes and proteins and their involvement in regulating maternal adaptations to pregnancy, immunology, placental biology, and fetal development. Special topics of investigation include preeclampsia, early pregnancy loss, intrauterine growth restriction, blood cell formation in the fetus (anemias and thalassemias), sexual development, maternal substance abuse, factors leading to birth defects, pulmonary development, and mechanisms of lung injury.

Neuroscience

The Institute for Neurological Disorders was launched in March 2009 to promote neuroscience research aimed at preventing and curing neurological disease. The Institute houses some 120 basic and clinical neuroscientists with over \$70M in funding, and is comprised of 6 divisions: Brain Injury and Repair, Neuromuscular and Movement Disorders, Neurodegenerative Disorders, Hearing and Equilibrium Disorders, Female Pain Syndromes, and Cognitive and Behavioral Disorders. These programs employ basic, clinical and translational research approaches to understanding a variety of diseases, including injury and stroke, autism, addiction, epilepsy, fibromyalgia, dementias, migraine, deafness, vertigo and multiple sclerosis.

Obesity

The Obesity program includes scientists at KU Medical Center, KU Lawrence, and Children's Mercy Hospitals and Clinics. The center focuses on reducing the regional and national epidemic of obesity in children and adults. Obesity causes and/or impacts all chronic diseases. Energy balance including nutrition and physical activity are the central components for weight management and reduction of health risk.

Ophthalmology

The Ophthalmology department has many active research programs focused on improved diagnosis and treatment of diseases that threaten vision. Clinical research includes corneal and refractive surgery, neuro-ophthalmology, and the functional consequences of age-related macular degeneration. Laboratory investigations are underway in retinal genetics, uveitis, uveal melanoma and neuro-protection in glaucoma. Plans are also underway to develop in the near future an Ophthalmic Bio-Engineering program. Research in this area is emerging

around the concept of a Center for Ophthalmic Engineering with an emphasis on optics, refractive surgery, intraocular approaches and biomechanics of the eye.

Orthopedics/Bioengineering

The Orthopedic Research Center includes specimen dissection preparation, a machine shop, a wet lab, a biomechanical lab, a molecular biology lab, and a computer lab for computational biomechanical analysis. Molecular and cellular studies are identifying site-specific molecular targets regulating cartilage differentiation and the function of bone morphogenetic proteins. Additional studies include the role of bone sialoproteins in osteogenesis. Gait simulation research is directed at improving hip replacement procedures and walking.

Personalized Medicine (Clinical Pharmacology)

This program investigates novel methods to determine variations in drug metabolism by humans since not all people respond similarly to drugs. This research provides insights into potential drug interactions in patients that take multiple drugs, and on the effects of diet or supplements on drug metabolism.

Public Health

Our emerging program in public health research is tackling the greatest challenges to the health of our communities, addressing issues such as obesity, tobacco use, cardiovascular disease, and cancer. Moreover, we are trying to tackle these issues in our most vulnerable communities, including rural, Native American, African American, and Latino communities.

Reproductive Sciences

Research at the KUMC Center for Reproductive Sciences includes the investigation of fertility, infertility, and diseases of the reproductive system. Knowledge of reproductive processes is gained through basic and clinical research encompassing a wide range of scientific and clinical pursuits. Specific focus areas include male fertility; female reproductive cycle; fertilization, implantation, and pregnancy; contraceptive development; analysis of complex neural networks controlling hormone secretion, reproduction, and behavior; and cancers of the reproductive system.

Faculty Research Day



Richard J. Barohn, MD
Chancellors Club Research
Award



Stephen C. Parnell, PhD
Thomas L. Noffsinger
Investigator Award



V. Gustavo Blanco, MD, PhD
Faculty Investigator Research
Award



Robin L. Masher, PhD
Faculty Investigator
Research Award



Douglas Wright, PhD
Faculty Investigator
Research Award



The 2012 Faculty Research Day took place on October 26, 2012. This program was initiated in 1982 with the intent of celebrating research at KUMC and recognizing the excellent work of the KUMC research community. This day provides researchers within KUMC an opportunity to share their work with other investigators and to hear research presentations by world-class scientists from within the Medical Center.

We take special pride in identifying those individuals who deserve special recognition for their research contributions. Individuals from the schools of Health Professions, Medicine and Nursing may be recognized in one of three categories:

The Chancellors Club Research Award is reserved for those KUMC faculty who are recognized leaders and who have achieved national and international stature in their chosen fields of research. Nominations are sent to the Vice Chancellor for Research Administration, a committee is selected to review the nominations and the final recommendation is forwarded by the Vice Chancellor for Research to the Kansas University Endowment Association. This year's recipient was **Richard J. Barohn, MD, School of Medicine**.

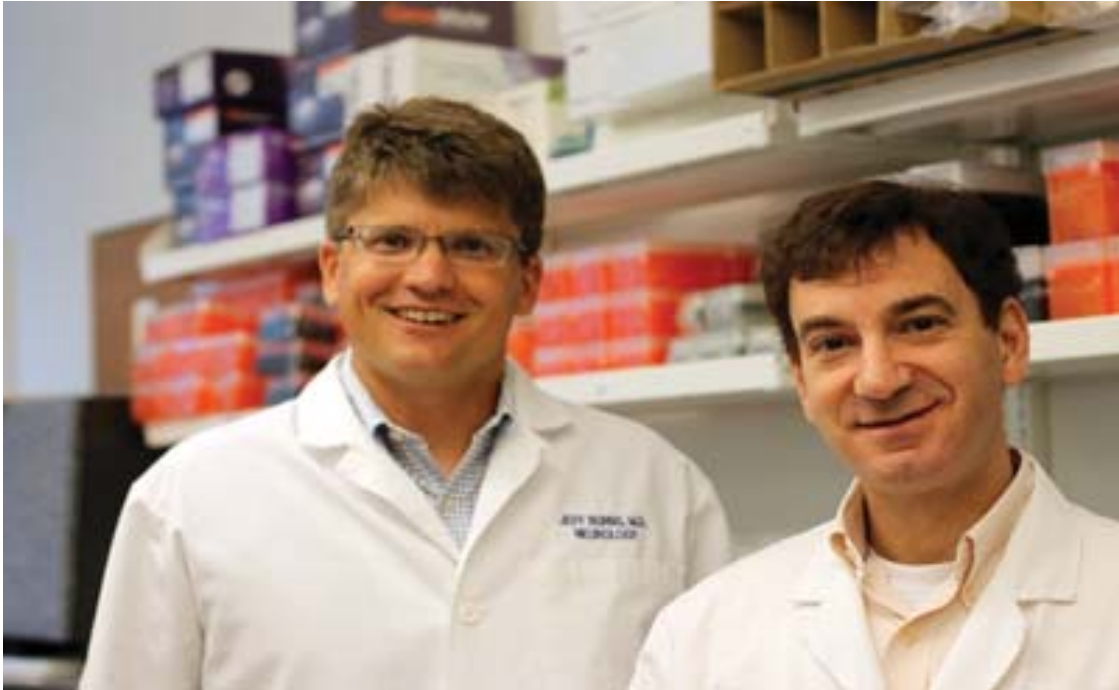
Individuals receiving Investigator Research Awards are nominated by the KUMC faculty at large. Nominations are ranked by each school's research committee and then reviewed by the Faculty Assembly Research Committee with recommendations to the Associate Vice Chancellor for Research Administration. Three faculty members received this award: **V. Gustavo Blanco, MD, PhD, School of Medicine; Robin L Maser, PhD, School of Health Professions, Douglas Wright, PhD, School of Medicine**.

The Research Grant Administrator Award recognizes and honors significant administrative support of the research enterprise of the KUMC and Wichita campuses. Nominations are ranked by the division directors of the KUMC Research Institute with recommendations to the Associate Vice Chancellor for Research Administration. This year, **Linda Schuck, School of Medicine** received this award.

The Thomas Noffsinger Investigator Award is awarded to the individual who received the highest ranking in his or her application to the Lied Endowed Basic Science Program through the KUMC Research Institute. The mission of the Lied Basic Science Grant program is to develop new and innovative ideas that have a high probability of leading to the submission of a new application for national peer-reviewed funding. Congratulations to **Stephen C. Parnell, PhD, School of Medicine**.

WHAT'S NEW

KU MEDICAL CENTER RECEIVES NATIONAL DESIGNATION AS AN ALZHEIMER'S DISEASE CENTER



The University of Kansas Medical Center has been awarded a five-year, \$6 million grant from the National Institutes of Health (NIH), putting it among an elite group of 29 institutions which have been nationally designated as Alzheimer's Disease Centers by the NIH's National Institute on Aging (NIA). Reflecting its new status as a national center of excellence, the program's name will be the University of Kansas Alzheimer's Disease Center.

Established in 1984, the NIA's Alzheimer's Disease Center (ADC) program provides resources to its Centers of Excellence and supports ongoing research by encouraging a multidisciplinary approach to studying the causes, progression, prevention, diagnosis and treatment of Alzheimer's disease. ADCs also foster the development of new research approaches.

Russell Swerdlow, MD is the director of the new KU Alzheimer's Disease Center and Jeff Burns, MD is the co-director. Swerdlow, Burns and other scientists at KU Medical Center have received international attention for research on how various lifestyle factors, including fitness and physical activity, affect normal aging and Alzheimer's disease. This research is unique in the field, and contributed to the NIH's decision to award KU a Center of Excellence grant.

THE UNIVERSITY OF KANSAS CANCER CENTER EARNS NATIONAL CANCER INSTITUTE DESIGNATION



The University of Kansas Cancer Center received its designation as a National Cancer Institute (NCI) cancer center on July 11, 2012. The National Cancer Institute recommended The University of Kansas Cancer Center for the designation at a June 25 meeting in Bethesda, MD., endorsing a nearly decade-long effort that has brought top cancer researchers, access to advanced care and millions of dollars in cancer research funding to the region and inspired profound advances in the care of cancer patients.

As a result of the designation patients will have access to clinical trials that are available only to NCI-designated cancer centers. The University of Kansas Cancer Center will be able to apply for federal research grants only available to NCI-designated cancer centers, with the potential for bringing millions in additional funding to the area.

The designation also strengthens the University of Kansas Medical Center's educational missions, said Acting Executive Vice Chancellor Steven Stites, M.D. "We have recruited world-class cancer researchers to our faculty and created a Department of Cancer Biology. These distinguished faculty members will train future generations of oncologists and cancer researchers, building our expertise in translational research, clinical trials and basic science, along with cancer prevention and control."



OVERVIEW OF ACTIVITY

Awards

In FY 2012, extramural awards* and clinical trials (all sources) totaled \$118,222,005, a decrease of \$14,675,530 (11%) from FY 2011's total of \$132,897,535.

Total awards for the KUMC schools for FY 2012 were: School of Medicine - \$91,933,534 (School of Medicine – Kansas City totaled \$88,726,185 and School of Medicine – Wichita's awards totaled \$3,207,349), School of Health Professions - \$1,975,200, and School of Nursing - \$7,302,074.

Nine departments each received awards totaling over five million dollars in FY 2012.

Twenty-three principal investigators each received awards totaling over one million dollars in FY 2012.

In FY 2012, the Research Institute managed a total of 1,282 grants and clinical trials, a decrease of 7% from the 1,374 managed in FY 2011.

*Extramural awards are made to KUMC faculty based upon approved applications. Research activities associated with the awards may occur across multiple fiscal years.

Expenditures

Total extramural expenditures for FY 2012 were \$109,206,454, an increase of 0.6% from the \$108,532,288 expended in FY 2011.

Expenditures on federally funded projects decreased by 4.9% from \$82,468,000 in FY 2011 to \$78,415,601 in FY 2012 due to completion of ARRA awards received in FY 2010.

EXTRAMURAL AWARDS



FY 2012 Extramural Awards Summary

In FY 2012, extramural awards from all sources (including KUEA funds) totaled \$118,222,005, a decrease of \$14,675,530 (11%) from \$132,897,535 in FY 2011. Total extramural grant awards decreased by \$13,844,984 (12.5%) during this period from \$110,425,685 to \$96,580,701. Clinical Trials revenue increased by \$589,377 (7%) from \$8,008,359 in FY 2011 to \$8,597,736 in FY 2012. Revenues from Technology Development & Commercialization increased by \$275,553 (32%) from \$853,805 to \$1,129,358. Awards from the Wichita Medical Practice Association and the KU Endowment Association decreased from \$13,609,686 in FY 2011 to \$11,914,210 in FY 2012, a decline of \$1,695,476 (12.4%). (See Figure 1 and Table 1 below.)

Figure 1
FY 2012 and FY 2011 Extramural Award Summary

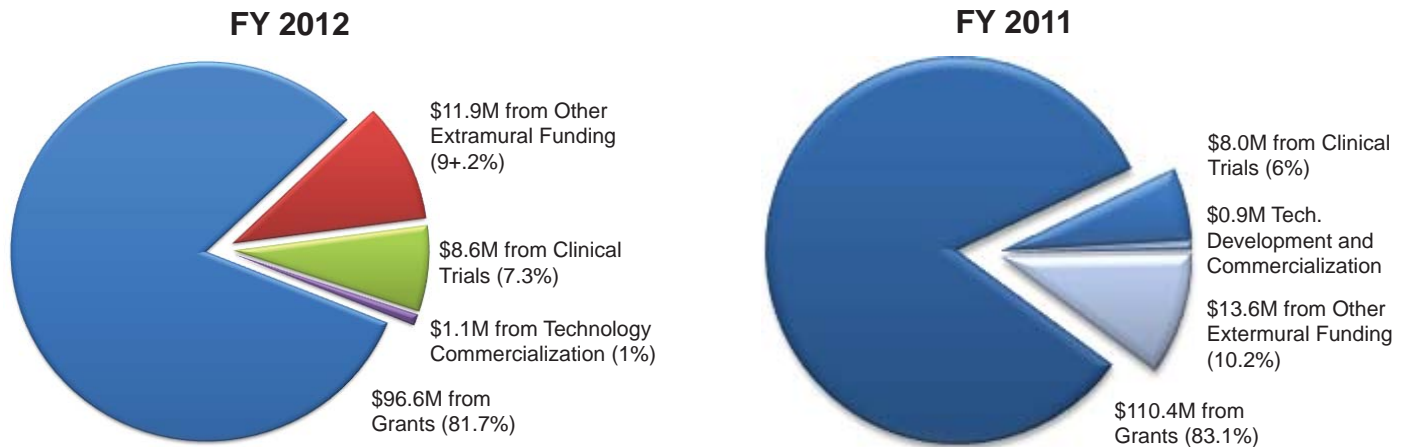


Table 1
Summary of Awards from All Sources for FY 2011 – FY 2012

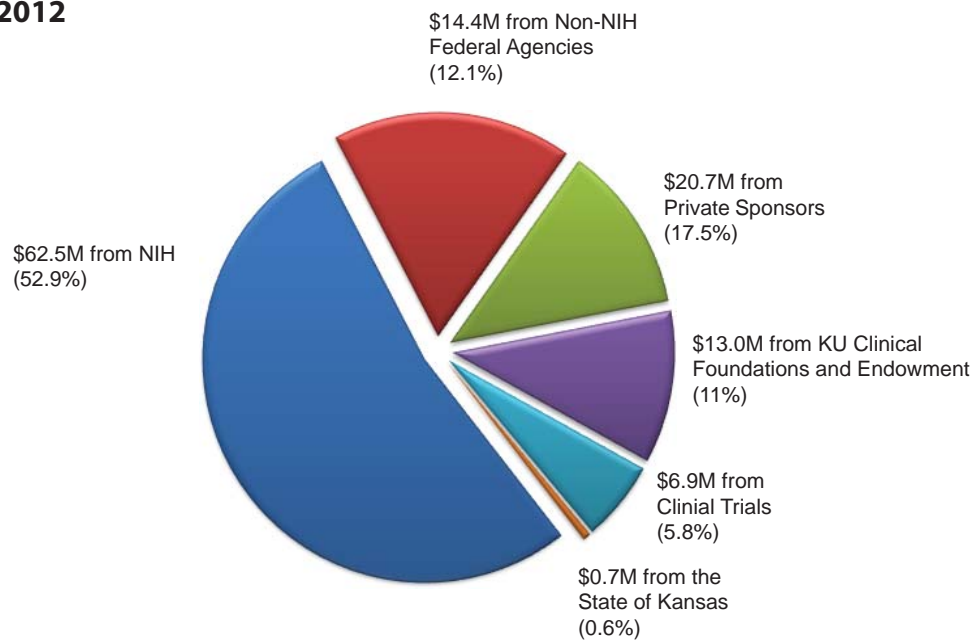
	FY 2012 (\$)	FY 2011 (\$)
KUMC Research Institute Managed	106,307,795	119,287,849
Grants	96,580,701	110,425,685
Clinical Trials	8,597,736	8,008,359
Technology Development & Commercialization	1,129,358	853,805
Other Sources of Extramural Funding	11,914,210	13,609,686
KU Endowment Association	9,801,173	10,909,051
Health Professions	-	-
Medicine	9,069,173	10,273,041
Nursing	732,000	636,010
Medical Practice Association – Wichita	1,926,486	2,700,635
Grants	1,926,486	2,062,086
Clinical Trials	186,551	638,549
Total of All Awards	118,222,005	132,897,535

FY 2012 Awards by Funding Agency Type

In FY 2012, funding from all agencies totaled \$118,222,005 a decrease of \$14,675,530 (11%) from \$132,897,535 in FY 2011. NIH funding decreased by \$5,062,767 (7.4%) during this period from \$67,595,755 to \$62,535,988. Clinical trial revenue increased by \$555,062 (8.5%) from \$6,522,993 in FY 2011 to \$7,078,055 in FY 2012. Award funding from the state of Kansas increased to \$707,849 in FY 2012 (28.7%) from the \$549,846 awarded in FY 2011. Non-NIH federal funding decreased by \$7,696,046 (35%) and private award funding decreased by \$2,629,781 (7%). Details of FY 2012 departmental awards by funding agency is presented in Table 2.

Figure 2
FY 2012 and FY 2011 Awards by Funding Agency Type

FY 2012



FY 2011

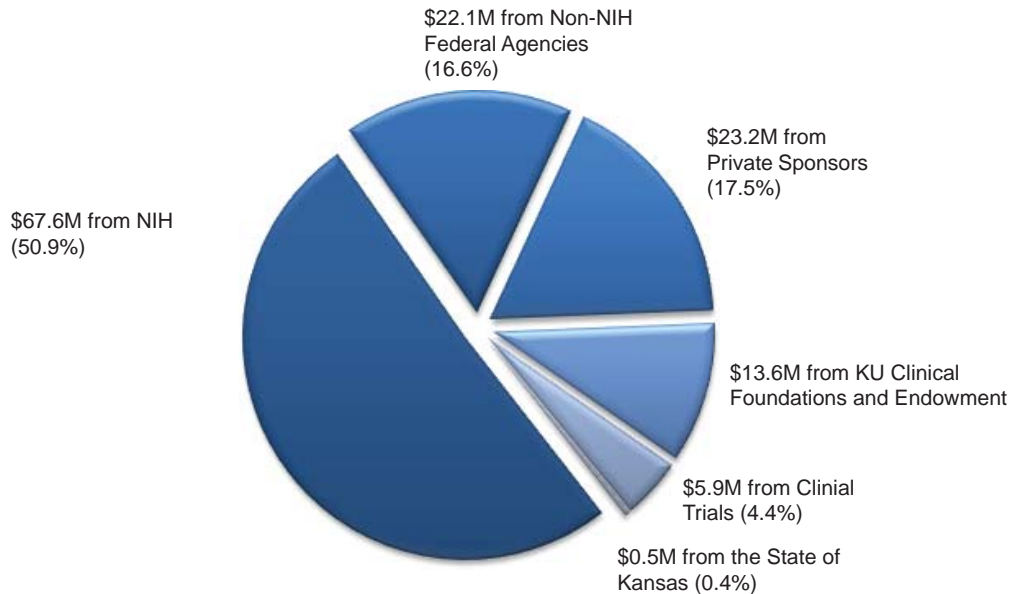


Table 2
FY 2012 Awards by Funding Agency Type

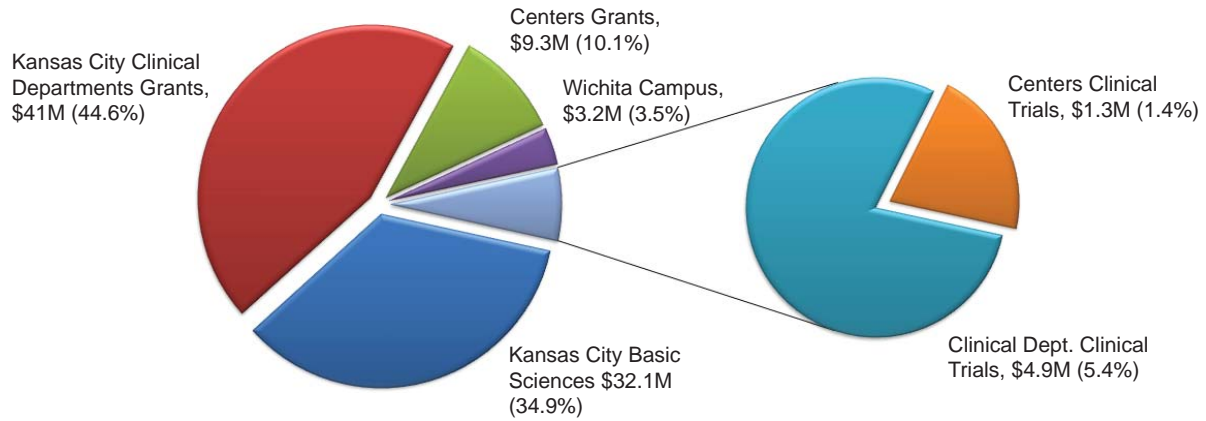
Department	National Institutes of Health	Other Federal Agencies	State of Kansas	Private/Other Grant Awards	Private Clinical Trials	Total	# of Awards
KUMC Administration		\$1,275,629	\$49,000	\$2,643,000		\$3,967,629	11
Center for Environmental and Occupational Health		\$46,476				\$46,476	1
Center for Telemedicine & Telehealth		\$1,110,000				\$1,110,000	4
Dykes Library		\$75,525	\$49,000			\$124,525	2
Outreach - Pittsburg				\$3,000		\$3,000	1
Research Administration		\$15,960		\$2,640,000		\$2,655,960	2
Student Financial Aid		\$27,668				\$27,668	1
School of Health Professions	\$1,358,987	\$15,370		\$336,678	\$264,165	\$1,975,200	17
Dietetics & Nutrition	\$528,136			\$34,234		\$562,370	4
Hearing & Speech	\$624,758			\$81,505		\$706,263	4
Nurse Anesthesia Education		\$15,370				\$15,370	1
Occupational Therapy				\$42,427		\$42,427	2
Physical Therapy Rehabilitation Sciences	\$206,093			\$178,512	\$264,165	\$648,770	6
School of Medicine	\$60,643,147	\$12,438,143	\$626,879	\$11,598,026	\$6,627,339	\$91,933,534	695
School of Medicine - Kansas City Campus	\$59,572,281	\$11,231,956	\$530,044	\$11,156,704	\$6,235,200	\$88,726,185	648
Basic Science Departments	\$27,627,807	\$1,097,824	\$4,704	\$3,395,306		\$32,125,641	127
Anatomy & Cell Biology	\$7,188,170			\$724,028		\$7,912,198	19
Biochemistry & Molecular Biology	\$2,701,121			\$25,000		\$2,726,121	10
Biostatistics		\$47,998	\$4,704	\$60,479		\$113,181	3
Cancer Biology	\$943,833			\$1,043,467		\$1,987,300	8
Health Policy & Management		\$10,544				\$10,544	1
Microbiology, Molecular Genetics & Immunology	\$2,815,902			\$355,000		\$3,170,902	20
Molecular & Integrative Physiology	\$3,000,148	\$39,918		\$413,422		\$3,453,508	21
Pharmacology, Toxicology, & Therapeutics	\$5,955,762			\$697,686		\$6,653,448	26
Preventive Medicine and Public Health	\$5,022,871	\$999,364		\$76,204		\$6,098,439	19
Clinical Departments	\$28,567,665	\$6,754,477	\$304,418	\$5,407,938	\$4,927,478	\$45,961,976	425
Anesthesiology					\$23,746	\$23,746	3
Cardiovascular Disease	\$3,981,707			\$137,654		\$4,119,361	9
Emergency Medicine					\$18,289	\$18,289	4
Family Medicine	\$4,552,346	\$293,422	\$30,000	\$145,000		\$5,020,768	13
Internal Medicine	\$5,525,016	\$85,845		\$3,155,190	\$2,060,262	\$10,826,313	162
Neurology	\$6,894,012	\$392,370		\$225,250	\$2,270,390	\$9,782,022	99
Obstetrics & Gynecology	\$938,306	\$31,530		\$58,755	\$53,500	\$1,082,019	10
Ophthalmology				\$3,555	\$111,138	\$114,693	6
Otolaryngology and Head and Neck Surgery	\$476,885			\$20,000	\$22,685	\$519,570	6
Pathology & Laboratory Medicine	\$4,099,364	\$1,558,093		\$857,937	\$1,330	\$6,516,724	27
Pediatrics	\$741,307	\$4,071,142	\$274,418	\$479,605	\$130,993	\$5,697,465	36
Psychiatry & Behavioral Sciences	\$75,009			\$149,992	\$7,530	\$232,531	7
Radiology	\$2,300				\$26,375	\$28,675	3
Surgery General	\$43,250	\$89,691		\$150,000	\$30,197	\$313,138	7
Surgery Neurosurgery					\$74,643	\$74,643	8
Surgery Orthopedics	\$1,076,194	\$36,031			\$4,058	\$1,146,283	8
Surgery Plastics					\$55,093	\$55,093	3
Surgery Urology	\$161,969	\$196,353		\$25,000	\$7,249	\$390,571	5
Centers	\$3,376,809	\$3,379,655	\$220,922	\$2,353,460	\$1,307,722	\$10,638,568	96
Diabetes Institute	\$225,000					\$225,000	1
Cancer Center	\$427,019	\$273,272		\$715,964	\$1,249,897	\$2,666,152	62
Center for Behavioral Neurosciences	\$583,627			\$1,500		\$585,124	2
Center for Child Health & Development		\$1,733,264	\$220,922	\$24,514		\$1,978,700	12
Center on Aging	\$1,047,401	\$781,038		\$1,920		\$1,830,359	7
Hoglund Brain Imaging Center	\$343,183			\$78,562		\$421,745	6
Kansas Intellectual and Developmental Disabilities Research Center	\$187,500	\$592,081		\$1,531,000		\$2,310,581	3
Kidney Institute	\$563,082				\$57,825	\$620,907	3
School of Medicine - Wichita Campus	\$1,070,866	\$1,206,187	\$96,835	\$441,322	\$392,139	\$3,207,349	47
Family & Community Medicine - Wichita		\$734,319		\$39,981		\$774,300	5
Internal Medicine - Wichita	\$53,082	\$163,000				\$216,082	3
Obstetrics & Gynecology - Wichita			\$19,900	\$50,807		\$70,707	3
Pediatrics - Wichita		\$14,711			\$3,724	\$18,435	2
Preventive Medicine and Public Health - Wichita	\$994,999	\$294,157	\$17,935	\$330,534		\$1,696,625	21
Psychiatry - Wichita	\$22,785			\$20,000	\$388,415	\$431,200	13
School of Nursing	\$530,854	\$631,194	\$31,970	\$6,108,056		\$7,302,074	15
Other Sources of Extramural Funding				\$12,857,017	\$186,551	\$13,043,568	
KU Center for Technology Commercialization				\$1,129,358		\$1,129,358	
KU Endowment Association				\$9,801,173		\$9,801,173	
Medical Practice Association - Wichita				\$1,926,486	\$186,551	\$2,113,037	
Total	\$62,532,988	\$14,360,336	\$707,849	\$33,542,777	\$7,078,055	\$118,222,005	738

FY 2012 Awards by School

School of Medicine

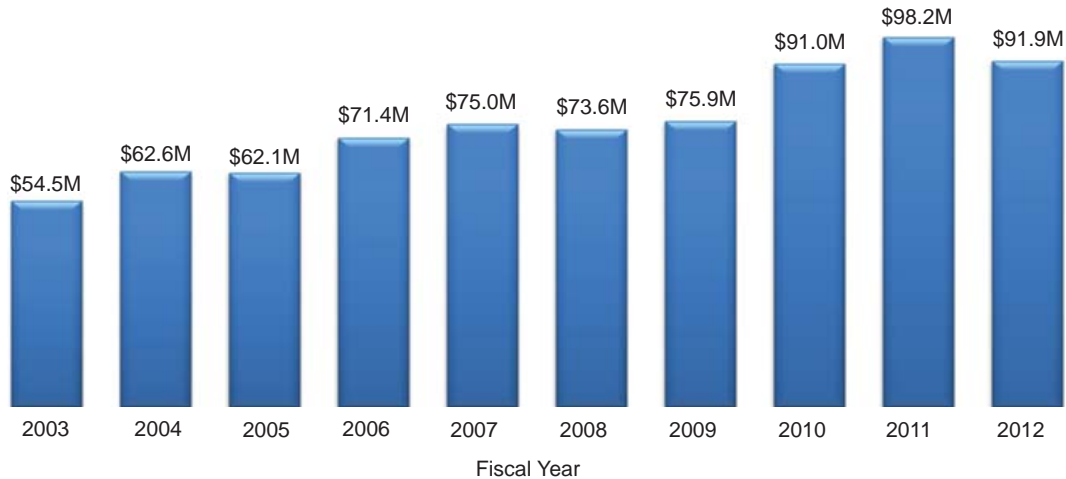
Awards for the School of Medicine for FY 2012 totaled \$91,933,534, a 9.6% decrease from the \$101,735,011 awarded in FY 2011 (see Figure 3).

Figure 3. School of Medicine Awards for FY 2012 by Grants and Clinical Trials (Million \$)



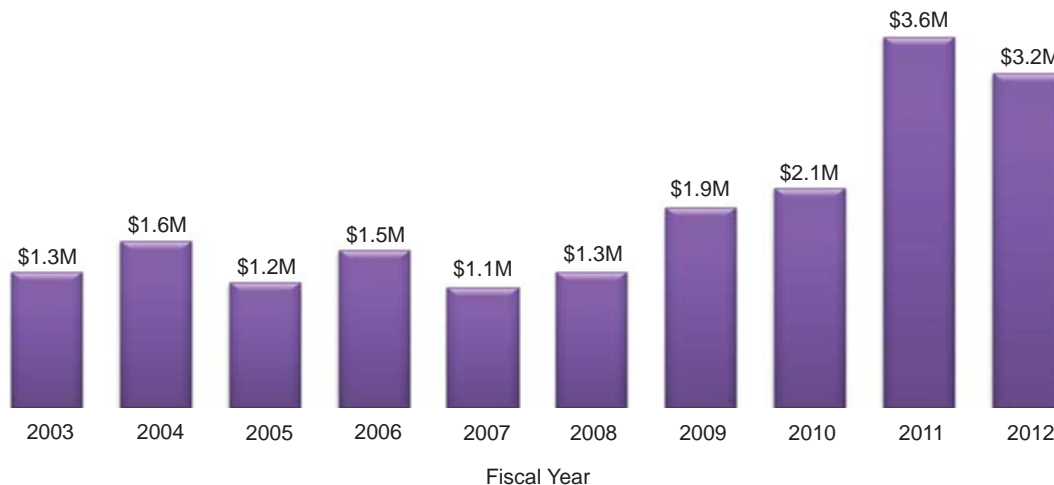
Research grant awards for FY 2012 for the **School of Medicine's Kansas City Campus** had a total dollar value of \$88,726,185, a 9.6% decrease from the \$98,173,961 awarded for FY 2011 (see Figure 4).

Figure 4. School of Medicine - KC Awards for FY 2003 - FY 2012 (Million \$)



Awards for the **School of Medicine's Wichita Campus** totaled \$3,207,349 for FY 2012, a 9.9% decrease from the \$3,561,050 in awards for FY 2011 (see Figure 5).

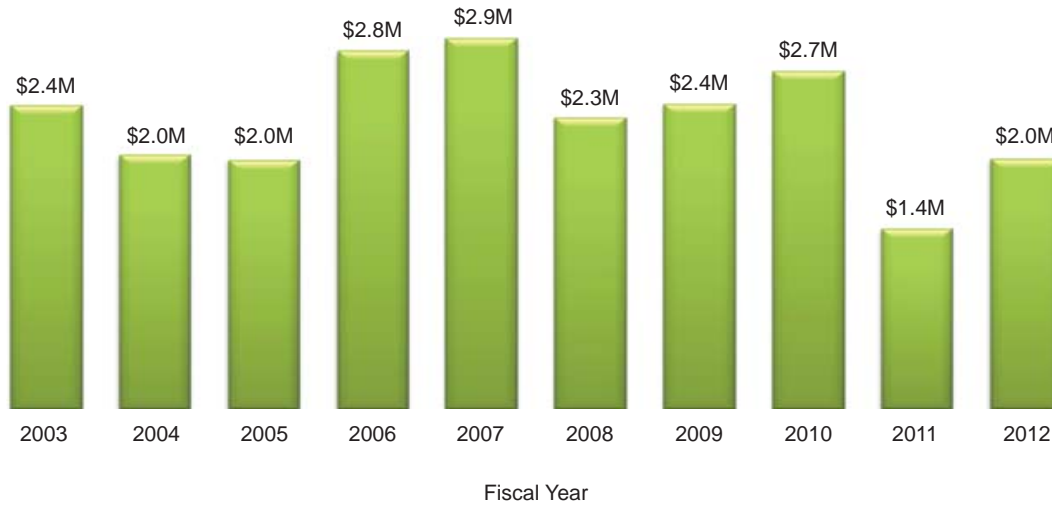
Figure 5. School of Medicine - Wichita Awards for FY 2003 - FY 2012 (Million \$)



School of Health Professions

Total awards for the School of Health Professions in FY 2012 were \$1,975,200, a 38.3% increase from the \$1,427,702 awarded in FY 2011 (see Figure 6).

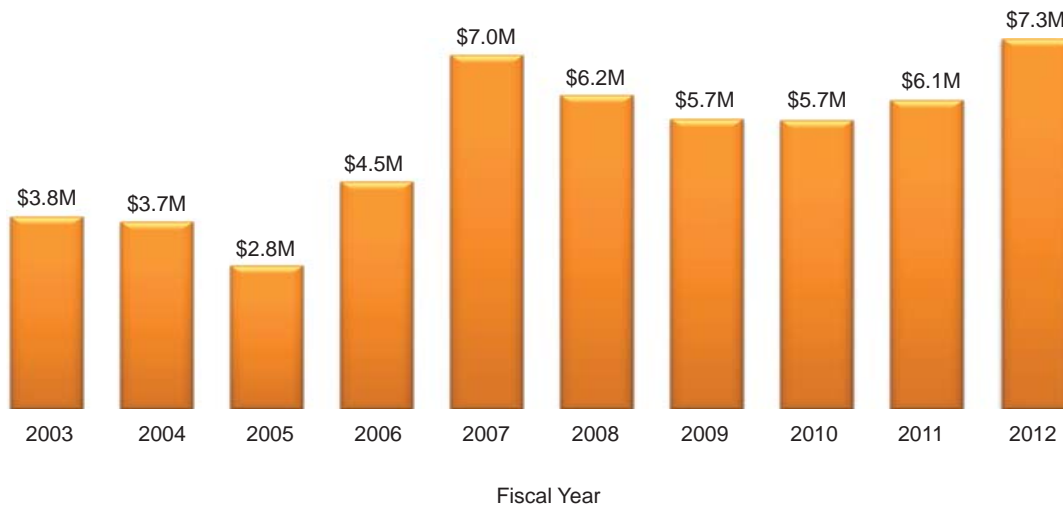
Figure 6. School of Health Professions Awards for FY 2003 - FY 2012 (Million \$)



School of Nursing

Total awards for the School of Nursing in FY 2012 were \$7,302,074, a 19.7% increase from the \$6,101,266 in awards for FY 2011 (see Figure 7).

Figure 7. School of Nursing Awards for FY 2003 - FY 2012 (Million \$)



Departments with Highest Total Award Dollars

Twenty-three departments had at least one million dollars in FY 2012 awards. The top four departments account for \$35,822,607 in awards: Internal Medicine (\$10,826,313); Neurology (\$9,782,022); Anatomy and Cell Biology (\$7,912,198); and School of Nursing (\$7,302,074) (Table 4).

Table 3
Departments, Centers and Institutes with at Least One Million Dollars in FY2012 Awards

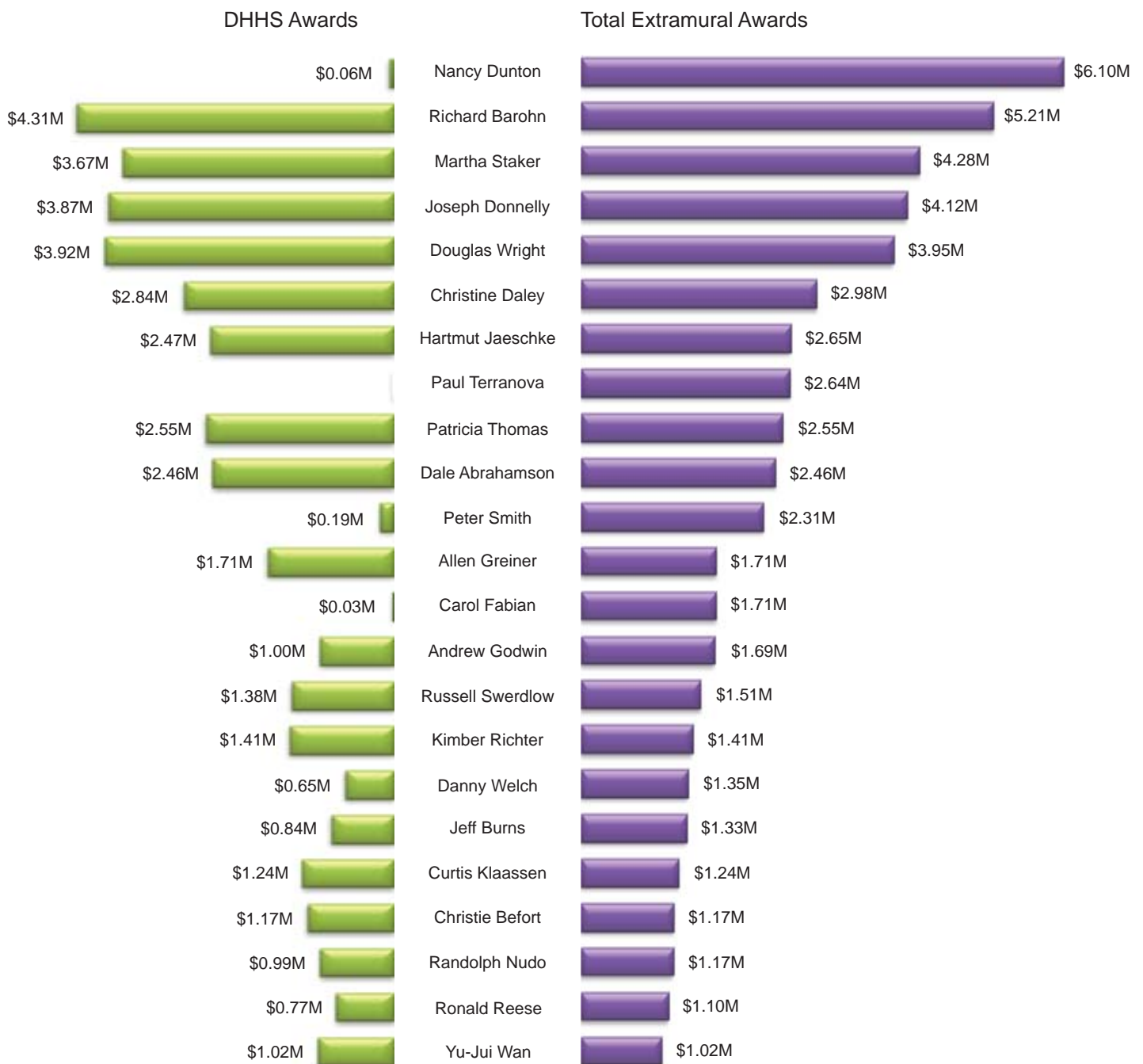
Unit (Department, Center, or Institute)	Grants	Clinical Trials	Total
Internal Medicine	\$8,740,423	\$2,085,890	\$10,826,313
Neurology	\$6,448,706	\$3,333,316	\$9,782,022
Anatomy and Cell Biology	\$7,912,198		\$7,912,198
School of Nursing	\$7,302,074		\$7,302,074
Pharmacology, Toxicology, and Therapeutics	\$6,653,448		\$6,653,448
Pathology and Laboratory Sciences	\$6,515,394	\$1,330	\$6,516,724
Preventive Medicine	\$6,098,439		\$6,098,439
Pediatrics	\$5,566,472	\$130,993	\$5,697,465
Family Medicine	\$5,020,768		\$5,020,768
Cardiovascular Diseases	\$4,119,361		\$4,119,361
Molecular and Integrative Physiology	\$3,453,508		\$3,453,508
Microbiology, Molecular Genetics and Immunology	\$3,170,902		\$3,170,902
Biochemistry	\$2,726,121		\$2,726,121
Cancer Center	\$1,126,224	\$1,539,928	\$2,666,152
Research Administration	\$2,655,960		\$2,655,960
Kansas Intellectual & Developmental Disabilities Research Center	\$2,310,581		\$2,310,581
Cancer Biology	\$1,987,300		\$1,987,300
Center for Child Health & Development	\$1,978,700		\$1,978,700
Center on Aging	\$1,830,359		\$1,830,359
Preventive Medicine and Public Health - Wichita	\$1,696,625		\$1,696,625
Surgery Orthopedics	\$1,112,225	\$34,058	\$1,146,283
Center for Telemedicine and Telehealth	\$1,110,000		\$1,110,000
Obstetrics and Gynecology	\$971,461	\$110,630	\$1,082,091
All Other Units	\$6,073,452	\$1,361,591	\$7,435,043
Total	\$96,580,701	\$8,597,736	\$105,178,437

Principal Investigators with Highest Total Award Dollars

Twenty-three principal investigators had total award dollars over one million dollars in FY 2012, including five principal investigators with total extramural funds in excess of three million dollars (Nancy Dunton, Richard Barohn, Martha Staker, Joseph Donnelly and Douglas Wright). These principal investigators and their total award amounts are listed in Figure 8.

The fifteen principal investigators with Department of Health and Human Services (DHHS) awards totaling at least one million dollars are listed in Figure 8.

Figure 8
Principal Investigators with FY 2012 Awards Exceeding \$1 Million



Awards (Grants and Clinical Trials) Managed in FY 2012

The Research Institute managed 724 grants and 558 clinical trials (total of 1,282 active awards) during FY 2012. Table 4 shows the number of grants and clinical trials managed by departments (for departments with 10 or more managed grants).

Table 4
Grants and Clinical Trials Managed by the Research Institute

Departments	Grants	Clinical Trials	Total
Internal Medicine	88	185	273
Neurology	20	142	162
Cancer Center	20	95	115
Pathology and Laboratory Medicine	56	2	58
Pediatrics	33	22	55
Pharmacology, Toxicology, and Therapeutics	48		48
Molecular and Integrative Physiology	43		43
Anatomy and Cell Biology	41	1	42
Preventive Medicine and Public Health	33	1	34
Microbiology, Molecular Genetics and Immunology	32		32
Preventive Medicine and Public Health - Wichita	30		30
School of Nursing	30		30
Obstetrics and Gynecology	10	11	21
Family Medicine	20		20
Surgery Neurosurgery	1	17	18
Biochemistry	17		17
Psychiatry - Wichita	3	13	16
Center for Child Health and Development	15		15
Otorhinolaryngology	5	10	15
Hoglund Brain Imaging Center	14		14
Physical Therapy Rehabilitation Sciences	13	1	14
Psychiatry and Behavioral Sciences	8	6	14
Surgery General	7	7	14
Dietetics and Nutrition	11	2	13
Ophthalmology	8	5	13
Surgery Urology	6	6	12
Center on Aging	11		11
Surgery Orthopedics	6	5	11
Family and Community Medicine - Wichita	10		10
Kidney Institute	8	2	10
All Other Units	77	25	102
Total	724	558	1282

NIH Rankings

The latest available NIH rankings are for FY 2012. NIH rankings for the three KUMC schools for FY 2003 - FY 2012 compared with all schools in those categories, public and private, are depicted in Table 5. (Note: All figures listed below reflect the Federal Fiscal Year, which runs from October 1 through September 30. KUMC's Fiscal Year is from July 1 through June 30.)

NIH rankings for FY 2012 for KUMC are as follows:

- The KUMC School of Health Professions ranked 11th among 55 schools of allied health with \$1.81M from six NIH awards.
- The KUMC School of Medicine ranked 63rd among 135 schools of medicine with \$49.8M from one hundred twenty-nine NIH awards.
- The KUMC School of Nursing ranked 58th among 77 schools of nursing with \$0.39M from one NIH award.

Table 5
NIH Rankings by School, Federal FY 2003-FY 2012

	Total # of NIH Awards	Total NIH \$ Awarded (Millions)	School Rank (All Institutions)
School of Health Professions			
2003	4	0.57	15
2004	5	0.60	17
2005	6	1.05	14
2006	7	1.61	8
2007	6	2.06	7
2008	3	1.25	12
2009	4	0.98	18
2010	4	0.76	24
2011	4	0.52	27
2012	6	1.81	11
School of Medicine			
2003	95	36.5	74
2004	84	34.3	77
2005	85	33.4	81
2006	95	36.9	75
2007	110	45.4	68
2008	114	44.7	65
2009	114	46.6	66
2010	113	50.5	63
2011	146	55.7	59
2012	129	49.8	63
School of Nursing			
2003	4	1.67	24
2004	4	1.49	29
2005	3	0.92	40
2006	6	2.17	19
2007	3	1.31	34
2008	3	1.45	31
2009	3	1.44	20
2010	3	1.31	31
2011	3	0.69	48
2012	1	0.39	58

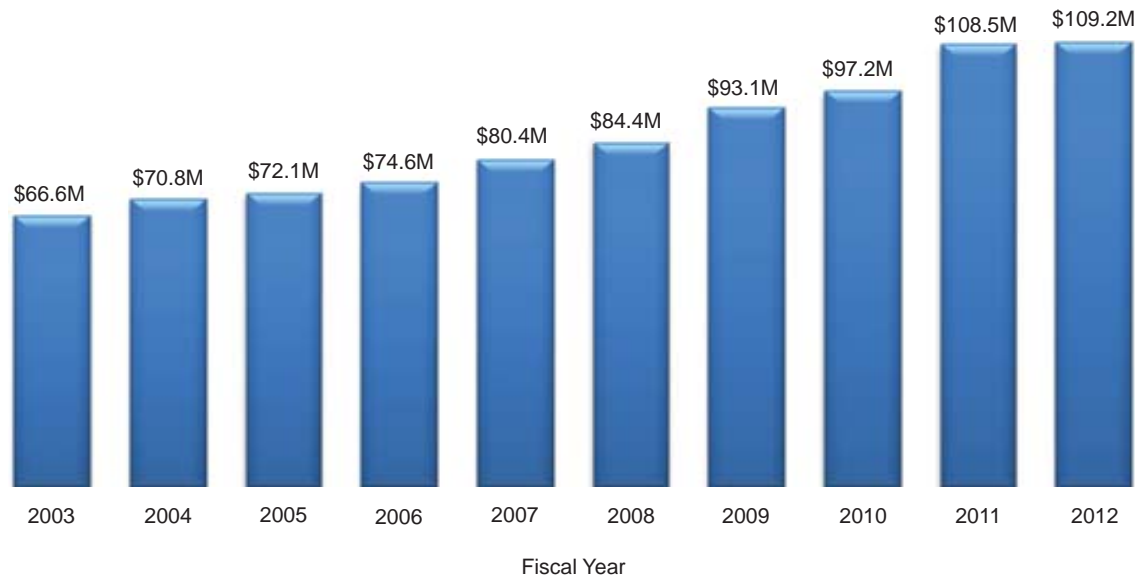
EXTRAMURAL EXPENDITURES



Extramural Expenditures Summary

Total extramural expenditures for FY 2012 were \$109,206,454, an increase of 0.62% from the \$108,532,288 expended in FY 2011 (See Figure 9). (Note: These amounts include funds on deposit with the Research Institute and KUMC, but do not include other Institution expenditures.)

Figure 9
Total Extramural Expenditures, FY 2003 - FY 2012 (Million \$)



Expenditures by Funding Source

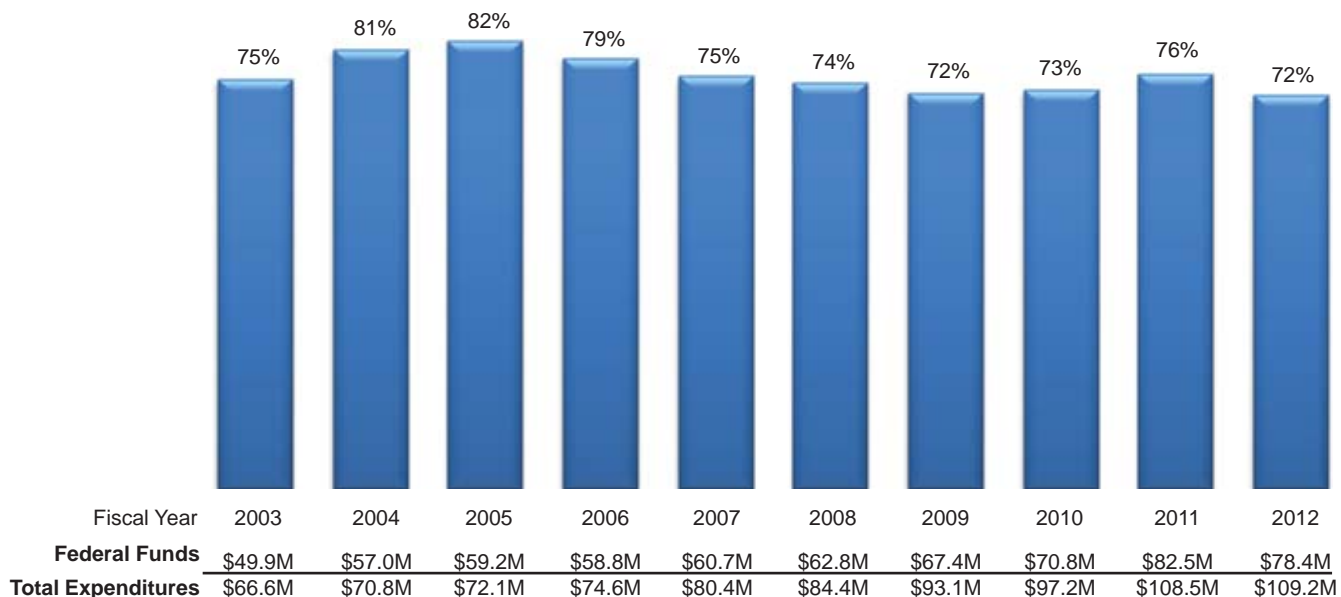
Expenditures have been separated by sponsor into four categories: federal, state, industry, and not-for-profit. Expenditures from federal funding have grown 56.5% from \$49.9M in FY 2003 to \$78.4M in FY 2012. Expenditures from industry have decreased 11.1% (from \$5.4M to \$4.8M) and from non-profit funding have increased 90.48% (from \$8.6M to \$27.8M) over the same time period of FY2003 to FY2012. Meanwhile, expenditures from state funding have dropped 53.8% from \$2.6M to \$1.2M. Table 6 shows total extramural expenditures by funding source for the ten years ending with FY 2012.

Table 6
Total Extramural Expenditures by Funding Source, FY 2003-FY 2012 (Thousand \$)

Fiscal Year	Federal Government	State & Local Government	Industry	Not-for-Profit & Other	Total
2012	78,415	1182	4,841	27,768	109,206
2011	82,468	913	4,938	20,213	108,532
2010	70,819	959	4,053	21,336	97,167
2009	67,420	316	4,190	21,201	93,128
2008	62,765	592	5,019	16,033	84,409
2007	60,653	94	5,532	14,109	80,388
2006	58,785	126	5,452	10,201	74,563
2005	59,176	34	5,273	7,606	72,089
2004	56,997	201	3,761	9,862	70,801
2003	49,863	2,639	5,461	8,599	66,562

Federal funds comprised 72% of the total extramural expenditures for FY 2012. This percentage has generally increased between FY 2003 and FY 2005, but has generally declined in the five most recent fiscal years as KUMC has broadened its sources of support. The expenditures on federal funds decreased by 4.9% from FY 2011 to FY 2012. (See Figure 10 below)

Figure 10
Federal Funds as a Percent of Total Extramural Expenditures, FY 2003 - FY 2012

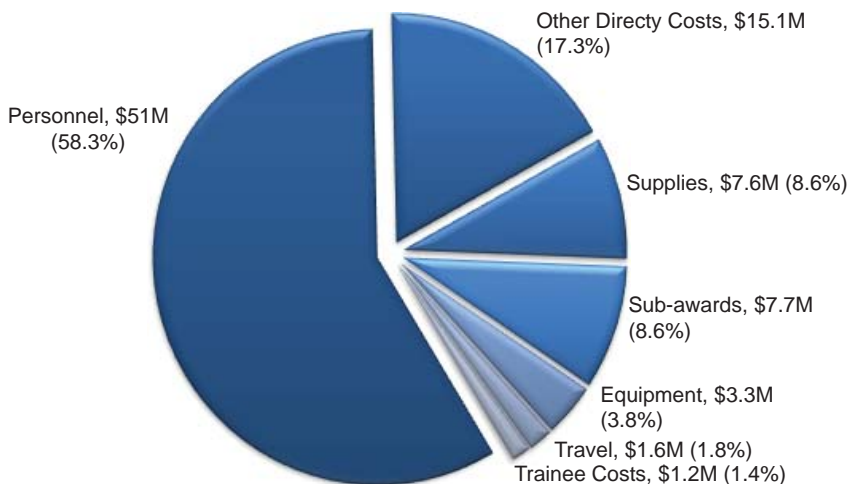


Direct and Indirect Costs

For FY 2012, direct costs totaled \$87,451,866 (80.1%) and indirect costs totaled 21,754,587 (19.9%).

The categories of direct costs are detailed in Figure 11. Personnel costs accounted for over half (58.3%) of direct expenditures in FY 2012. Other major direct cost categories totalled 24.4% as follows: supplies (8.6%), sub-awards (8.8%), equipment (3.8%), travel (1.8%), and trainee costs (1.4%). A variety of other costs comprised the remaining 17.3%.

Figure 11
FY 2012 Direct Costs by Category (Million \$)





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