

THE UNIVERSITY OF KANSAS MEDICAL CENTER



2012
ANNUAL REPORT



The University of Kansas Medical Center

serves Kansas through educating the health care leaders of tomorrow, making research discoveries that are changing the world, and building healthier communities throughout our state.

In this report, you will see that 2012 ranked among the medical center's most productive years. Achievements ranging from the awarding of National Cancer Institute designation to an exciting nursing education agreement have made this a banner year in our institution's 107-year history.



Another point of pride in 2012 is our progress in implementing an interprofessional approach to health care education, with an increased emphasis on our medical, nursing and health professions students learning together as a team to better care for their patients.

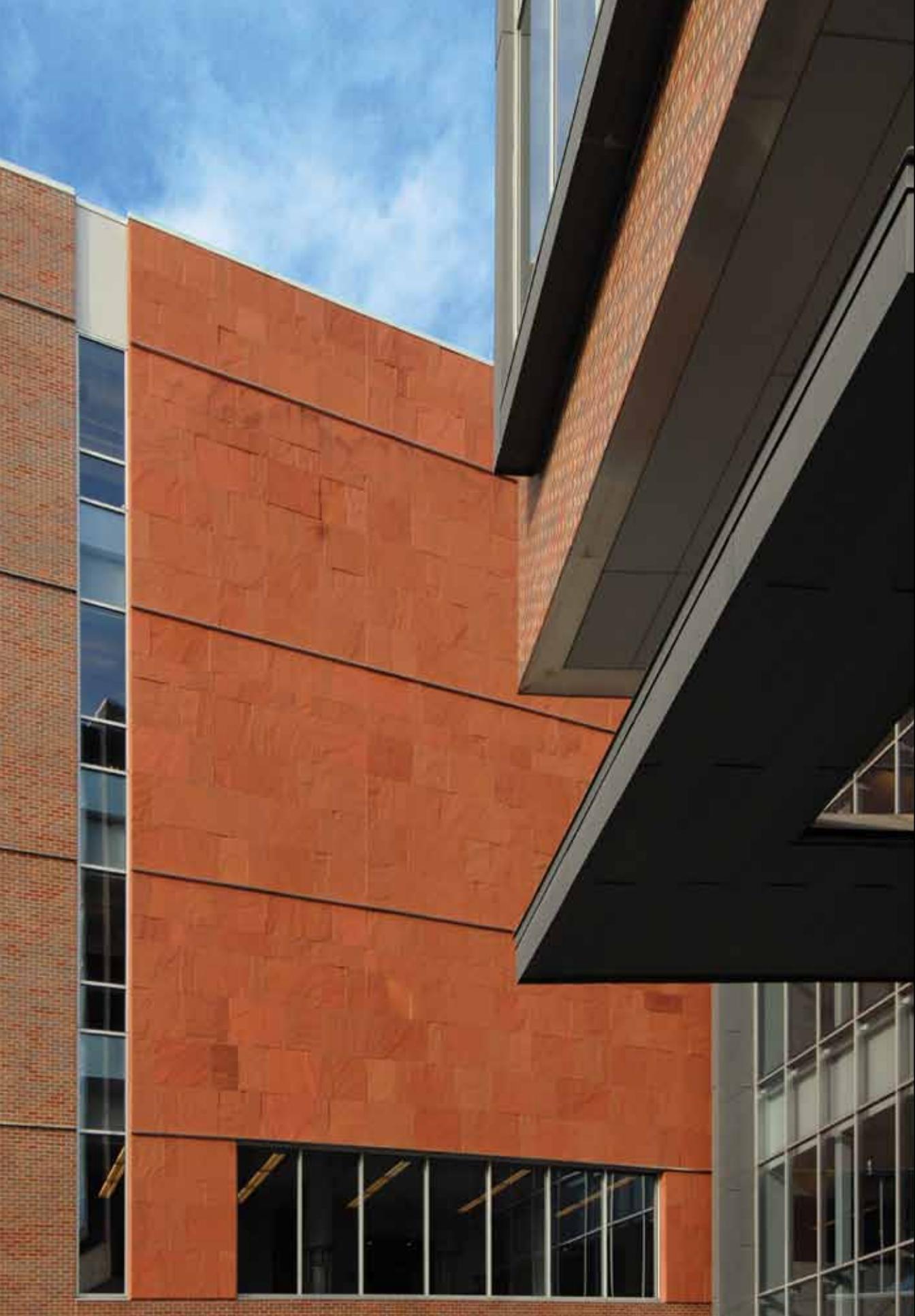
Our faculty-researchers had an outstanding year when it came to scientific discovery, in areas as diverse as neuroscience, rural obesity, cancer and microbiology. These discoveries show great promise in producing cures and better treatments for many of the diseases and conditions that affect our population.

In 2012, we continued to support efforts to improve the health and well-being of residents in all 105 Kansas counties. Our outreach efforts in our community and throughout the state remain a major priority.

As we look ahead to 2013 and beyond, we are eager to embrace new and exciting initiatives that will further advance our missions in education, research, patient care and community engagement.

Douglas A. Girod, M.D.
Executive Vice Chancellor

Karen L. Miller, Ph.D., RN
Senior Vice Chancellor for Academic and Student Affairs
Dean, School of Health Professions and Nursing



KU Medical Center **BY THE NUMBERS**

1	National Cancer Institute designation	95	Kansas counties that KU Medical Center's 2,215 students call home
2.5	Average number of scientific papers published per day in 2012 by KU Medical Center researchers	100	Anniversary of KU Medical Center's first graduating class in Physical Therapy
9	School of Medicine departments in the National Institutes of Health's top 25 for research funding	105	Number of Kansas counties where KU Medical Center has some kind of educational, patient care or research presence
18	Community colleges that signed an agreement with the School of Nursing to help associate degree Registered Nurses to obtain their bachelor of science in nursing	250	School of Medicine residents in Wichita and Salina
19	Hospitals, universities and health science organizations that were members of the Midwest Cancer Alliance in 2012	400	Free blood pressure checks administered by first- and second-year medical students at the Kansas State Fair
19	Health care providers placed in medically underserved Kansas communities through the Kansas Recruitment and Retention Center, which provides placement assistance to Kansas' rural health organizations	511	School of Medicine residents in Kansas City
20	Percent increase in the number of new patients seen at the Silver City Health Center in Kansas City, Kan., the faculty practice of the KU Schools of Health Professions and Nursing	600	Clinical trials underway at KU Medical Center at the end of 2012
20	Percent increase in the number of new patients seen at the Silver City Health Center in Kansas City, Kan., the faculty practice of the KU Schools of Health Professions and Nursing	3,178	Practicing physicians in Kansas who received their medical degrees or completed their residencies at KU
30	Anniversary celebrated by the Department of Health Policy and Management in the School of Medicine	4,100	Kansas patient visits with KU Medical Center health care providers that were made using telemedicine
40	Medical school graduates in 2012 who entered residencies in family medicine	7,144	Individual donors who supported KU Medical Center in fiscal year 2012
52	First- and second-year medical students at the expanded campuses in Wichita and Salina	12,645	KU Medical Center alumni who live and/or work in Kansas
69	Number of Kansas' 105 counties where the Center for Telemedicine and Telehealth provides telemedicine services	3,026,332	Scholarship dollars distributed to students in all disciplines at KU Medical Center in fiscal year 2012
91	Number of Kansas' 105 counties served by a physician who trained at KU	52,043,624	Dollars in National Institutes of Health research funding awarded to KU Medical Center in the federal fiscal year 2012

Educating *Leaders*



Educating the health care leaders of tomorrow

For more than a century, the University of Kansas Medical Center has been educating health care professionals for Kansas. KU Medical Center takes tremendous pride in preparing generations of doctors, nurses and other health care professionals for leadership roles in education, research and policy and to care for patients with integrity, skill and compassion.

This was a pivotal year for the education programs in our Schools of Medicine, Nursing and Health Professions. The success of the expansion of our medical education programs in Salina and Wichita garnered national attention.

The School of Nursing received attention for their innovative use of e-textbooks for undergraduate nursing education programs. And our School of Health Professions continues to have many of its programs ranked nationally.

We also continued to expand our interprofessional education approach, providing opportunities for students from medicine, nursing, pharmacy, physical therapy and other disciplines to learn to work in teams to improve patient care while they are still in school, with the idea that this team approach will carry over to their clinical practices.



Students from our Schools of Health Professions, Nursing and Medicine learn to work side by side in a clinical skills lab. It is part of KU Medical Center's emphasis on interprofessional education for the next generation of health care professionals.

Educating Leaders

A NURSING EDUCATION AGREEMENT PROVIDES CAREER ADVANCEMENT

Nurses across Kansas now have the opportunity to advance their careers without leaving home, thanks to an agreement between the KU School of Nursing and 18 regional community colleges. The agreement provides nurses with associate's degrees in nursing from participating colleges the opportunity to pursue their bachelor of science in nursing from KU's online RN-to-BSN program. The new agreement streamlines the application process for students who graduate from a participating associate's degree nursing program with a 2.5 GPA or higher and pass the licensure exam to become an RN. The new RN-to-BSN agreement also will increase the need for nursing faculty, a need that the KU School of Nursing will fulfill by collaborating with faculty at the participating community colleges.

THE CENTER FOR INTERPROFESSIONAL EDUCATION

The Center for Interprofessional Education and Simulation at KU Medical Center is committed to promoting collaboration among different health professions to prepare students for their future careers as part of health care teams. In 2012, the center solidified its overall mission, goals and planning. Classroom instruction in the Schools of Medicine, Nursing and Health Professions fully embraced learning experiences that emphasize the importance of building strong health care cooperation through teamwork and excellent interprofessional communication skills.

HIGH PRAISE FOR KU MEDICAL CENTER'S EDUCATION PROGRAMS

A number of KU Medical Center education programs were cited in *U.S. News & World Report's* 2013 rankings of public university graduate programs. The School of Health Professions programs listed in the rankings included occupational therapy (#2); speech-language-pathology (#6); audiology (#7); physical therapy (#9); and nursing-anesthesia (#21). The School of Nursing's masters program was ranked #24 nationally in the report. Several programs in the School of Medicine also cracked the top 25 in the *U.S. News & World Report* rankings, including rural medicine (#12); family medicine (#14); health services administration (#22); and primary care medicine (#25).

DOCTOR FOR A DAY

More than 70 area high school juniors and seniors had the chance in November to experience what it's like to be a physician during the KU School of Medicine-Wichita's annual "Doc for a Day." The high school students had an opportunity to work with KU School of Medicine students and faculty to learn more about the process it takes to become a doctor. The students were also shown many basic medical procedures, such as finding veins and inserting needles; conducting eye and ear exams; listening to the heart; reading X-rays; and tying surgical knots. This was the 11th year for the event organized and sponsored by the Family Medicine Interest Group at the School of Medicine-Wichita. A similar event is held each year at the School of Medicine's main campus in Kansas City.

NURSING AND HEALTH PROFESSIONS STUDENTS STUDY IN INDIA

Logan Moore, Nellie Metz, Andrew Reed and Laura Matlage were selected to participate in the 2012 Robinson Scholars program and travel to Vellore, India, to study at the Christian Medical College. Moore and Metz are students in the School of Nursing, and Reed and Matlage are in the Department of Occupational Therapy Education. While in India, each student was able to experience the practice of health care in an environment very different from their own. The Robinson Scholars program was started in 2006 by Mani Mani, M.D., professor emeritus in general surgery at the School of Medicine.

RURAL-MINDED MEDICAL STUDENTS CONDUCT HEALTH SCREENINGS AT KANSAS STATE FAIR

Members of the Rural Medicine Interest Group at the KU School of Medicine conducted blood pressure checks at the Kansas State Fair in September. For many students, the fair provided an early — if not the first — opportunity to work on clinical skills in a setting less controlled than a classroom. The state fair trip is especially worthwhile for first-year medical students, who can learn about the problems rural residents often face in getting access to quality health care. It was the third consecutive year that students from the rural medicine group have traveled to Hutchinson to volunteer. The Rural Medicine Interest Group is credited with helping to change the culture on an urban medical school campus to a more rural-friendly environment.

OUR TALENTED STUDENT-RESEARCHERS

It is not only faculty members who are making groundbreaking scientific discoveries at KU Medical Center. Our talented student-researchers are also making major contributions.



School of Nursing doctoral student and clinical instructor **Jill Peltzer, M.S., RN**, (above) published research on how clinics can survive and thrive while ensuring high-quality and affordable health care. Peltzer studied a community health center in Pittsburg, a small recession-hit town in southeast Kansas and identified broad themes, such as strong administrative leadership, that set the center on a trajectory for success.

Tim Kamerzell, who has a Ph.D. in pharmaceutical chemistry, left a promising industry career at Genentech, Inc., to return to KU for medical school. In 2012, Kamerzell earned a year-long research sabbatical, through the Sarnoff Cardiovascular Research Foundation, to concentrate on his interest in cardiovascular research.

Shane Stecklein, an M.D./Ph.D. student in the KU School of Medicine, discovered a potential method for knocking down a class of cancer-associated genes, which may lead to better treatments for breast and ovarian cancers.

Making Discoveries that *Change the World*



Translating research into cures

KU Medical Center is home to a vibrant and growing scientific community. Our talented scientists in the Schools of Medicine, Nursing and Health Professions continue to research the causes, cures and treatments for diseases and other medical mysteries.

In 2012, KU Medical Center cemented its reputation as one of the nation's fastest-growing academic research institutions. After a nearly decade-long effort, The University of Kansas Cancer Center was awarded National Cancer Institute designation. We opened our Clinical Research Center, one of the few freestanding facilities in the country devoted

solely to early-phase cancer trials and other clinical research studies. And one of the medical center's professors, Joe Lutkenhaus, Ph.D., won Columbia University's Horwitz Prize, one the nation's most prestigious research awards.

Teamwork has always been the key to our research success. Whether it's collaborating with scientific colleagues around the region and country to solve the riddles of sarcomas, or working with a start-up company to develop better treatments for diabetes, partnerships are essential in helping our researchers take their scientific exploration in new and exciting directions.



Roy Jensen, M.D., director of The University of Kansas Cancer Center, celebrates with U.S. Health and Human Services Secretary Kathleen Sebelius at the announcement on July 12, 2012, that the cancer center had been awarded designation as a National Cancer Institute cancer center.

Making Discoveries that *Change the World*

THE KU CANCER CENTER EARNS NCI DESIGNATION

The National Cancer Institute (NCI) awarded The University of Kansas Cancer Center with NCI designation in July, capping a nearly decade-long effort led by KU Cancer Center director Roy Jensen, M.D., that has brought top cancer researchers 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. In 2016, the KU Cancer Center will be applying for designation as a comprehensive cancer center. That designation focuses more on prevention, education and outreach.

PLAN FOR BRAIN REPAIR MICRODEVICE WINS TOP PRIZE AT ENTREPRENEUR'S FORUM

A business plan for a medical device developed by Randolph J. Nudo, Ph.D., professor of molecular and integrative physiology and director of the Landon Center on Aging, took top prize at first annual Medical Device Entrepreneur's Forum. The electronic device bridges damaged pathways in the brain, holding promise for the treatment of traumatic brain injury and stroke. A prototype of the device, powered by a simple watch battery, was implanted into rats with brain injuries.

THE KU CLINICAL RESEARCH CENTER OPENS

The KU Clinical Research Center is part of the Johnson County Education Research Triangle and is funded by a one-eighth-cent sales tax approved by county voters in 2008. One floor of the center is dedicated to early phase clinical trials of cancer drugs. Later-phase clinical trials for a wide range of promising new treatments are offered through Frontiers: The Heartland Institute for Clinical and Translational Research, a regional, multi-institutional effort that is part of a national network to speed the transformation of laboratory discoveries into treatments and cures. Patients also have access to all phases of clinical trials through the new KU Alzheimer's Disease Center, which is one of just 29 national Alzheimer's Disease Centers.

JOE LUTKENHAUS WINS PRESTIGIOUS HORWITZ AWARD

Joe Lutkenhaus, Ph.D., a Distinguished Professor of microbiology, molecular genetics and immunology, was named one of three winners of the 2012 Louisa Gross Horwitz Prize by New York's Columbia University in recognition of his work to understand the dynamic and three-dimensional organization of bacterial cells. Committee members cited Lutkenhaus' research into the biochemistry and molecular biology of the living cell. Established in 1967, the Horwitz Prize is Columbia University's top honor for achievement in biological and biochemistry research, and is widely considered a precursor to the Nobel Prize.

A YEAR OF RESEARCH IN NATIONAL PUBLICATIONS

KU Medical Center faculty had 929 research studies published in prestigious national journals in 2012.

Here are a few highlights:



Jared Grantham, M.D., (above) a University Distinguished Professor and Director Emeritus of the KU Kidney Institute, coauthored a research paper on an effective treatment for polycystic kidney disease (PKD). The results of clinical trials for tolvaptan were published in the *New England Journal of Medicine* (NEJM).

Richard J. Barohn, M.D., chair of the Department of Neurology, published research in the *Journal of the American Medical Association* (JAMA) on a decades-old drug that may help in the fight against a rare neurological disorder. The repurposed drug, mexilitine, shows promise in patients with nondystrophic myotonias.

Soumen Paul, Ph.D., an assistant professor in the Department of Pathology and Laboratory Medicine, uncovered the mechanism by which the first two groups of cells form in a developing organism. Paul's research was published the *Proceedings of the National Academy of Sciences* (PNAS).

A LANDMARK STUDY ON ANTIDEPRESSANTS

KU School of Medicine–Wichita researchers Matthew Macaluso, D.O., and Sheldon Preskorn, M.D., led a landmark study of a novel antidepressant. Research shows that 45 percent of individuals with major depression do not respond to existing antidepressant medications. The KU–Wichita study found that the drug Glyx-13 provides rapid and robust results for many patients with treatment-resistant depression. A trial on proper dosing for Glyx-13 is underway. Drs. Macaluso and Preskorn presented their research on Glyx-13 at the 51st annual meeting of the American College of Neuropsychopharmacology.

A STUDY ON TELEPHONE COACHING FOR HEART PATIENT CAREGIVERS IS PUBLISHED

Carol Smith, Ph.D., RN, FAAN, a professor at the KU School of Nursing and in the Department of Preventive Medicine and Public Health, published an article in *Heart & Lung: The Journal of Acute and Critical Care* on the feasibility of a telephone coaching program for family caregivers of home-based heart failure patients. Smith and her research team tested the telephone coaching as part of her broader work on identifying the factors that home-based heart failure patients, their clinicians and caregivers determine are essential to reduce hospital readmissions. The telephone coaching program was shown to reduce the caregiving burden and improve caregiver confidence and preparedness.

Building Healthy Communities



Working to improve the health of all Kansans

KU Medical Center is dedicated to improving the health of people everywhere, and particularly, in Kansas. We are collaborating with health care providers, community leaders and organizations in every Kansas county and dozens of other communities across our region, country and world to build healthier communities.

Working with our partners, KU Medical Center is helping to educate a diverse workforce; encouraging young people to pursue careers in health care; expanding access to modern health care to all Kansans; increasing the number of health care providers to rural Kansas; providing health care professionals with educational

opportunities through continuing education; and improving the quality of life for vulnerable populations through community-based research and community-driven solutions.

KU Medical Center researchers and clinicians were in all 105 Kansas counties in 2012, looking for the cures and preventive measures that will improve the health of Kansans. But they also traveled around the world to help tackle international health challenges such as HIV/AIDS and high infant mortality.

Whether in rural Kansas or sub-Saharan Africa, KU Medical Center is striving to build healthier communities.



A video feed featuring Eve-Lynn Nelson, Ph.D., an associate professor of pediatrics at KU Medical Center, plays at the Google Fiber showcase in Kansas City. Using state-of-the-art digital teleconference systems, KU Medical Center faculty connect to the Google Fiber space from their offices on the medical center campus and interact face-to-face with visitors at the showcase.

Building Healthy Communities

STUDY FINDS RURAL RESIDENTS ARE MORE LIKELY TO BE OBESE THAN THEIR URBAN COUNTERPARTS

Christie Befort, Ph.D., assistant professor of preventive medicine and public health, garnered national attention for her study on how Americans living in rural areas are more likely to be obese than city dwellers. The study analyzed data collected by the National Center for Health Statistics and is the first in more than three decades to use measured heights and weights. Previous studies have relied on self-reported data, which typically underestimate the prevalence of obesity. Befort's study found that there may be two significant reasons why rural residents are more likely to be overweight: cultural diet and physical isolation. Befort examined several factors which are thought to affect obesity, including diet, physical activity, age, race, gender and education.

SWOPE WYANDOTTE HEALTH CLINIC OPENS

Faculty in the departments of internal medicine and pediatrics at KU Medical Center worked with Swope Health Services to launch a new federally qualified health center (FQHC) in Wyandotte County. In addition to providing much-needed medical care for Wyandotte County residents, the clinic is an important site for educating KU School of Medicine internal medicine and pediatrics residents. The clinic will serve about 12,000 patients every year and help alleviate the crowding and overuse of hospital emergency rooms in the area for basic health care.

NURSING FACULTY AND STUDENTS HELP UGANDAN BIRTH ATTENDANTS DELIVER MORE HEALTHY BABIES

Students and faculty from the KU School of Medicine traveled to Uganda in June to train health workers in a special childbirth technique called Helping Babies Breathe. The program, developed by the American Pediatric Association and endorsed by the World Health Organization (WHO), provides traditional birth attendants the skills to deal with still births and neonatal deaths in low-resourced countries, such as Uganda. Martha Baird, Ph.D., RN, assistant professor in the University of Kansas School of Nursing, led the trip, which also included colleagues from Research College of Nursing and Johnson County Community College.

JUNTOS WORKS TO IMPROVE LATINO HEALTH OUTCOMES

The Juntos Center for Advancing Latino Health continued to expand its efforts in the Kansas City metropolitan area and Kansas. In 2012, Juntos worked on improving breast cancer awareness and screening among Latinas in Wyandotte County; trained 34 community health workers in rural Kansas; increased the number of Latino health workers becoming certified nursing assistants; and addressed smoking cessation in Hispanic communities across the state. Ana Paula Cupertino, Ph.D., assistant professor of preventive medicine and public health and the director of Juntos, was also named the 2012 Humanitarian of the Year by the Hispanic Chamber of Commerce of Greater Kansas City.

SCHOOL OF MEDICINE FACULTY AND STUDENTS IMPROVING WATER QUALITY FOR WICHITA RESIDENTS

In 2012, the KU School of Medicine–Wichita continued to collaborate with the Wichita community to create rain gardens that are improving the water quality of the Arkansas River. An assessment conducted by the School of Medicine–Wichita found that the water quality of the Arkansas River was a leading environmental concern for Wichita residents. The School of Medicine–Wichita, the city of Wichita, the U.S. Environmental Protection Agency, and others have created a rain garden to help naturally filter the runoff that flows into the river. Rain gardens create an attractive and effective natural filter to reduce runoff and minimize surface water pollution.

FAMILY MEDICINE PROFESSOR WORKS TO SLOW THE SPREAD OF HIV AND AIDS IN AFRICA

Sarah Kessler, Ph.D., MPH, an assistant professor in KU Medical Center's Department of Family Medicine's research division, is working to slow the spread of HIV, particularly in Africa, by decreasing the number of infants born with the disease. Kessler, who has spent time researching HIV in the United States, Kenya, and Uganda, believes understanding the culture is key to helping combat the disease. She recently received a grant to provide Ugandans with safer childbearing techniques, and she advises men and women in Uganda on how they can reduce the risk of spreading the virus to their babies.

HELPING CHILDREN WITH DEVELOPMENTAL CHALLENGES

KU Medical Center sponsored a number of programs in 2012 that are helping children with autism and other developmental disabilities and their families.



The Department of Occupational Therapy Education has developed a program that teaches children with autism how to swim. By combining established therapeutic practices with Red Cross swimming guidelines, instructors are able to impart specialized instruction to children with autism, who are at a greater risk of drowning.

A clinic at Fort Leavenworth operated by the Department of Pediatrics is providing early intervention for children from military families. Families bring their children to the pediatrics diagnostic clinic, which visits the post several times a year to provide evaluations, diagnoses, and treatment plans for the children of military families.

The KU Center for Child Health and Development has launched Girls Night Out, a program for adolescents with autism and other developmental disabilities. Girls work with program leaders and peers to develop skills designed to help them make friends and succeed in social settings.

KU Medical Center *makes national news*

As in past years, the outstanding work undertaken by the educators, researchers and clinicians at KU Medical Center received national news attention in 2012. Some highlights from KU Medical Center in the news:



The School of Medicine–Salina is emerging as a model for addressing the critical shortage of physicians in rural areas. In the span of a week, the campus, now in its second year, was featured on Fox News and CBS News. The CBS Evening News report featured first-year medical student JuliAnne Rathbun, who grew up in Marion County, Kan., and plans to practice in a rural area after medical school.



A study led by study led by Christie Befort, Ph.D., assistant professor of preventive medicine and public health, which found that rural Americans are much more likely to obese than their urban counterparts, received news headlines around the world. The online arms of ABC News and the *Los Angeles Times* were among the media outlets to report on Dr. Befort's findings.



The efforts of Joseph Tash, Ph.D., professor of molecular and integrative physiology, and his colleagues to develop a birth control pill for men garnered national interest. Tash's work on the prospect of a male birth control pill appeared in *Science* magazine, was discussed by a panel on NBC's Today Show, and served as grist for satirist Stephen Colbert on Comedy Central's The Colbert Report.



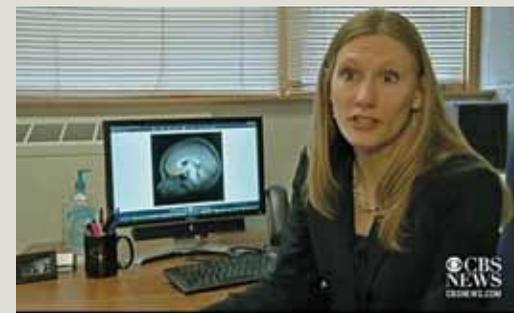
Patricia Turner, M.D., clinical associate professor of ophthalmology, and Martin Mainster, M.D., professor of ophthalmology, were featured in a *New York Times* story about the role of environmental light in sleep and health, a subject they have studied extensively. The *Times* story described how aging eyes gradually lose their ability to transmit the light necessary to stimulate the circadian system.

The Hogleund Brain Imaging Center *in the news*

The Hogleund Brain Imaging Center on the KU Medical Center campus uniquely combines state-of-the-art neuroimaging technologies under one roof. Thanks to philanthropic support from Forrest and Sally Hogleund and state and federal funding, the Hogleund Brain Imaging Center is a regional resource at the forefront of neuroscientific endeavors, 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. Some of the research being done at the Hogleund Brain Imaging Center was in the national spotlight in 2012.



Functional magnetic resonance imaging technology at the Hogleund Brain Imaging Center is helping researchers better understand the food choices we make. Laura Martin, Ph.D., assistant professor of preventive medicine and public health, spoke to *Women's Health* magazine about the emotional and physical hunger responses that pictures of food produce. Amanda Bruce, Ph.D., a psychologist with faculty appointments at the University of Missouri–Kansas City and KU Medical Center, led a study that used functional MRI to see how children's brains respond to food logos. Bruce discussed the research with a CBS News division that distributes content to local television stations.



The average child in the United States sees more than 5,000 food advertisements a year. Technology at the Hogleund Brain Imaging Center is helping researchers understand what kind of impressions these messages are leaving. Amanda Bruce, Ph.D., a psychologist with faculty appointments at the University of Missouri–Kansas City and KU Medical Center, led a study that used functional magnetic resonance imaging to see how children's brains respond to food logos. Bruce discussed the study with CBS News.

To view these stories and see more of KU Medical Center in the news, go to www.kumc.edu/news-listing-page/kumc-in-the-media-spotlight.html or scan the QR code to the right.





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