

panorama

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE » FALL/WINTER 2014

Improving emergency room outcomes



Rahul Khare, M.D., '99
UMKC School of Medicine

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Cover photo by Laura Brown



panorama

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DEAN, SCHOOL OF MEDICINE
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Steven L. Kanter, M.D., takes the reins as new dean



The UMKC School of Medicine welcomed Steven L. Kanter, M.D., in his new role as the School's eighth dean on Oct. 1.

STEVEN L. KANTER, M.D., a neurosurgeon and career physician-educator with a strong foundation in the growing field of medical informatics, became the eighth dean of the University of Missouri-Kansas City School of Medicine on Oct. 1.

A former vice dean at the University of Pittsburgh School of Medicine, Kanter comes to UMKC as an experienced leader in developing and promoting community health and education initiatives at an urban-serving university, said UMKC Chancellor Leo E. Morton.

"Like UMKC, Pitt is situated in the urban core and recognizes and lives up to the special responsibility that confers," Morton said. "The UMKC School of Medicine plays a vital role in the community, and I am confident that Dr. Kanter is the kind of leader who will not just preserve those vital community relationships, but grow and strengthen them."

"I hope to focus the considerable talent and energy of the School of Medicine faculty, staff and students on helping to

make Kansas City the healthiest city in America," Kanter said. "Of course, the best way — and the only way — to do this is to engage with business and community partners, clinical partners, alumni, and neighboring institutions."

With the School of Medicine nearing its 50th anniversary, Kanter said he is excited to work with faculty, staff and the student body at a pivotal point in the School's history and is looking forward to building on its current strengths for the next 50 years.

"It is a privilege to be able to serve the Kansas City community in the role of dean of the UMKC School of Medicine," Kanter said. "I look forward to working with community members and the school's partner institutions to ensure that we continue to bring value to the people of this region in the best possible way."

Morton said Kanter's background and interest in both medical informatics and interprofessional education were important considerations in the decision to choose Kanter as the next dean of the School of Medicine.

A former Fellow in Medical Informatics for the National Library of Medicine, Kanter joined the faculty at Pittsburgh in 1991 and became vice dean in 2002. He served as editor-in-chief of Academic Medicine, the Journal of the Association of American Medical Colleges, from 2008 to 2012. He received the Merrell Flair Award, the highest honor awarded by Association of American Medical Colleges' Group on Educational Affairs, in 2013.

Kanter earned his undergraduate degree from Texas A&I University and his M.D. at the University of Texas Medical School in San Antonio. He served his residency at the University of Florida. He was on faculty at Texas A&M University College of Medicine before moving to the University of Pittsburgh. He is a member of the American Medical Informatics Association, the World Association of Medical Editors and the Association for Medical Education in Europe, which presented him with the Patil Award for Best Medical Education Research Presentation in 2007.

James B. Nutter receives honorary doctorate



Former School of Medicine Dean Harry Jonas, M.D., (right) recognized Kansas City businessman James B. Nutter, who received an honorary doctorate during the School of Medicine commencement exercise on May 22 at the Kansas City Music Hall.

DRIVE INTO THE Westport neighborhood and you can't help but notice rows of bungalows and older houses painted vivid shades of yellow, red, pink, turquoise and lavender. Called Nutterville, it is symbolic of James B. Nutter Sr.'s vision for a strong, bright, healthy urban core in Kansas City.

For his revitalization and philanthropic efforts, Nutter received an honorary doctorate from the School of Medicine during commencement exercises May 22 at Municipal Auditorium Music Hall.

"The School of Medicine advances the health of our community through research and the education of future physicians and health care providers. But the health of a community depends on more than good health care," said Betty Drees,

dean of the School of Medicine. "Mr. Nutter has a lifetime history of promoting health in Kansas City, not only through his generous philanthropy but by advocating for safe and affordable housing. He continues to make Kansas City a healthier community to live, work and enjoy."

Nutter has supported UMKC and the urban neighborhoods that surround the Volker and Hospital Hill campuses. Through his leadership, a fire station at 37th Street and Woodland Avenue was renovated to become the Ivanhoe Community Center. He also helped establish the Jim Nutter Park in the Ivanhoe neighborhood, developed with Boundless Playgrounds, a nonprofit organization dedicated to building inclusive playgrounds for children with disabilities.

He also endowed and built the playground in front of Children's Mercy.

At UMKC, students at the Henry W. Bloch School of Management attend lectures in the James B. Nutter Family Classroom. Nutter's revitalization efforts helped bring businesses like Costco and Home Depot to the center of Kansas City.

Nutter's commitment to Kansas City has been recognized through the years. In 2012 he was named Kansas Citizen of the Year by the Greater Kansas City Chamber of Commerce and received the Harold L. Holliday Sr. Civil Rights Award from the NAACP's Kansas City branch. He is a member of many boards, including the Harry S. Truman Library Institute, Children's Mercy and Truman Medical Center Charitable Foundation.

Local researchers participate in flu study

IT'S THAT TIME of year again. The sniffles and cough have arrived. Health care professional may have a more definitive way to answer the classic question, "is it a cold or the flu?"

A multi-center study under way at four hospitals across the country including Truman Medical Center Hospital Hill, home of the UMKC School of Medicine Department of Emergency Medicine, is evaluating a relatively new nose-swab test that could more quickly and accurately answer the question for those plagued with flu-season symptoms. Moreover, researchers hope to develop a series of symptom-related questions known as a clinical decision guideline to help emergency room doctors determine whether patients coming to the ER should receive the test for the influenza virus and begin treatment.

During the flu season, a rapid, correct diagnosis for influenza will allow physicians to more appropriately treat patients, helping them recover more quickly and better contain or prevent the spread of a potentially deadly disease.

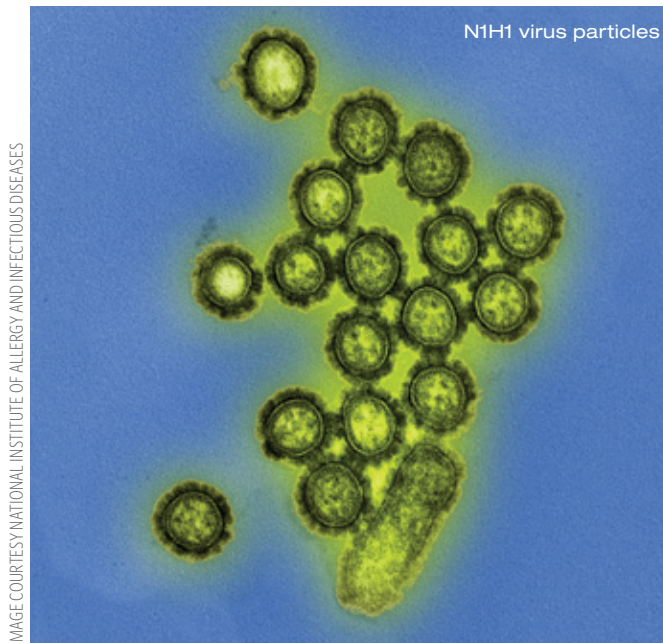
"Influenza kills people every year, especially the vulnerable such as the elderly or individuals that have an underlying medical illness," said **Mark Steele, M.D., '80**, the lead site investigator for the study at Truman. "Early, accurate identification and treatment of influenza can reduce complications and mortality associated with influenza."

Many different kinds of viruses other than influenza can cause coughs, runny nose and fever. Because of this, those symptoms alone are not enough to accurately diagnose or rule out influenza

in a patient.

"The flu tests we currently use are not very sensitive or accurate," Steele said.

The Centers for Disease Control currently recommends that health care providers begin anti-viral treatment in those high-risk patients based on the physician's judgment and clinical signs without waiting the extended period of



time necessary to confirm a diagnosis of the flu.

The hope is that a relatively new, state-of-the-art test, Xpert Flu, an FDA-approved non-invasive nose-swab test, will quickly tell physicians if the patient is indeed infected with the influenza virus. Research shows that treatment for the flu is most effective when administered within 48 hours of the appearance of symptoms.

Steele, research assistant Laurie Kemble, and the emergency department research team are spearheading the three-year study at the School. The main study site is located at the Johns Hopkins University¹ and is led by

principal investigators Richard Rothman, M.D., Ph.D., and Andrea Dugas, M.D. Olive View-UCLA Medical Center and Maricopa Medical Center in Phoenix are the other participating sites.

The research has three objectives. The first is to create and implement a clinical decision guideline to determine if a presenting patient should be tested

for influenza based on his or her symptoms. The second is to evaluate the accuracy and utility of the new rapid influenza test.

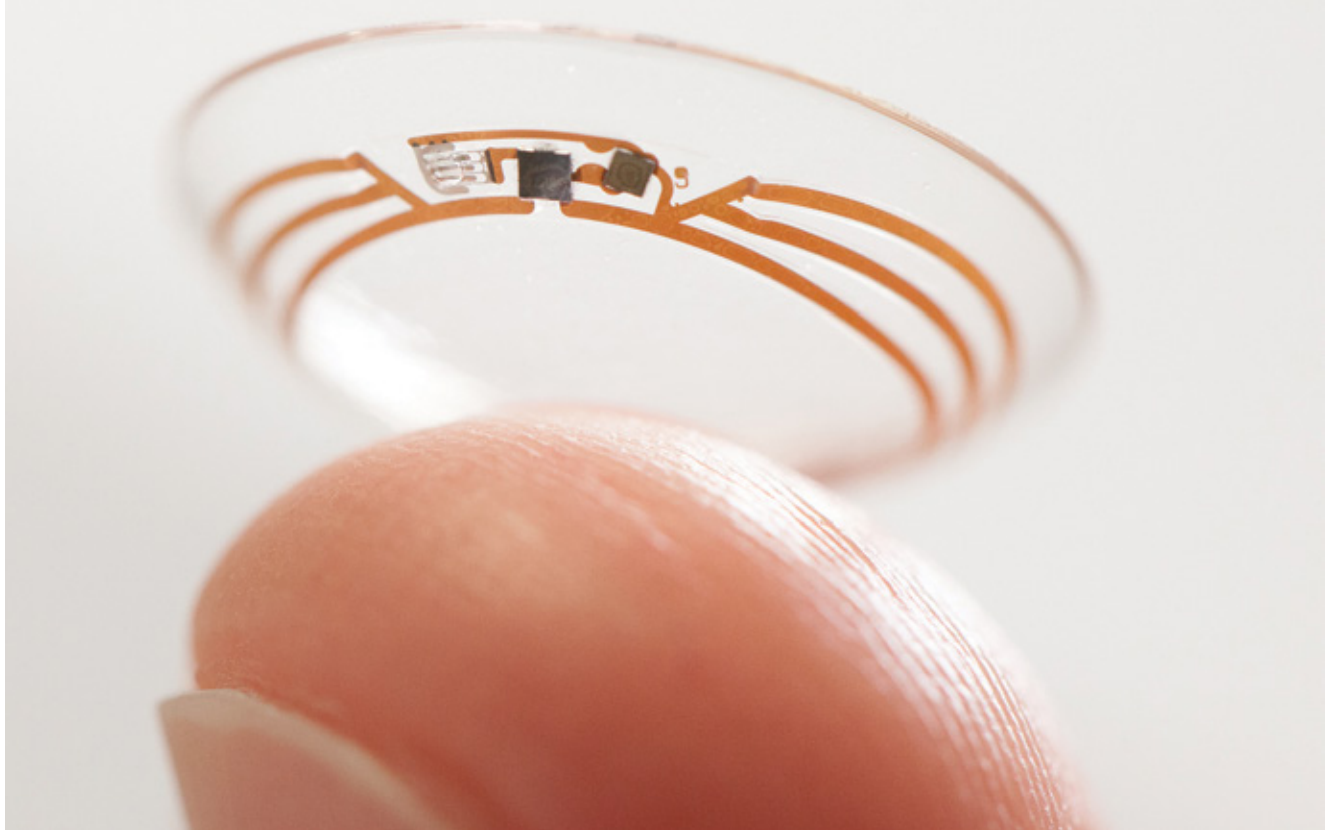
The final goal is evaluating a new methodology to conduct flu surveillance. This system will gather information from the electronic medical records from the participating study sites about their influenza cases and upload the information to a database in the cloud. The information will then be made available to health officials, allowing them to better track influenza outbreaks and take necessary steps to prevent the disease from spreading

when outbreaks do occur. No identifying information will be on the cloud or disclosed.

"It provides an innovative, real-time way of tracking influenza," Steele said.

¹The influenza study is supported by an agreement from the Johns Hopkins University, School of Medicine, with funds provided by Grant No. 1 IDSEPT1309014-01-01 from the Department of Health and Human Services ASPRA/BARDA, AMS. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of ASPR/BARDA/AMS or the Johns Hopkins University, School of Medicine.

Google developing contact lens for diabetics



GOOGLE

Google's smart contact lens prototype measures blood sugar levels from human tears.

Trendlines

Technology and innovations in the medical field

MORE THAN FOUR million Americans have been diagnosed with diabetic retinopathy, making it the leading cause of adult blindness in the United States. Google announced in January it is working on a new product to help those with diabetes monitor their illness.

Scientists at Google X, the secretive California research lab that brought us Google Glass, are developing a "Smart Contact Lens" that the company says can more accurately and quickly measure the glucose level from a human tear. The lens would eliminate the need for diabetics to do a finger prick to measure their blood sugar levels throughout the day.

The device looks like a normal contact lens with one key difference. Miniature electronics are embedded in the lens. Google says its developers are building

the lens with chips and sensors so small they look like tiny bits of glitter. Prototypes being tested use a tiny wireless chip and sensor embedded between two layers of soft contact lens material to measure glucose levels and generate a reading once a second. The information can be uploaded to a smartphone virtually in real time.

Taking the product a step further, the researchers are looking at how to integrate tiny, flashing LED lights to indicate to the wearer when glucose levels rise or fall above or below a certain point.

Novartis, a European drug maker, entered a partnership with Google in June to license the smart lens. Google admits that there's still much work to be done to make the product usable, but the hope is to create a better way for those who have diabetes to manage their illness.

Capsule: Remembering Marjorie Sirridge



Marjorie S. Sirridge, M.D., came to the UMKC School of Medicine with her husband, William T. Sirridge, M.D., in 1971 as two of its founding docents. She stayed at UMKC for the remainder of her career and throughout the years served as dean of the medical school, as a teacher, a mentor and a friend to students and colleagues and as a pioneer for women in medicine. Marjorie Sirridge died on July 30 at the age of 92. Read her memoriam on page 36.



LEGACY *of* LEADERSHIP

BETTY DREES, M.D., F.A.C.P., LEAVES A LEGACY OF ACCOMPLISHMENTS FOR HER 13-YEAR TENURE AS DEAN OF THE SCHOOL OF MEDICINE

BY STACY DOWNS

Medical schools are complex organizations. The individuals who lead them are responsible for educating students, fostering research and maintaining relationships with partner hospitals and clinics. The title of “dean” seems almost insufficient for leaders in academic medicine.

As dean of the UMKC School of Medicine, Betty Drees, M.D., F.A.C.P., met monthly with a team of associate deans, department chairs and administrators. The group gathered in a conference room around a U-shaped configuration of tables. Without pausing or studying notes, Drees spoke briskly and at length about complex topics including budgets, construction and legislation. Then one by one, each person, counterclockwise from Drees, systematically shared news.

At a meeting last year, Drees downplayed an announcement about herself. She would be leaving the dean position that she’d held since being appointed interim dean in 2001 and permanent dean in 2003.

School of Medicine founder Dr. E.

Grey Dimond’s “practice of changing professionally and personally every 10 years went through my mind as I made this decision to step down because it is healthy for the individual and the institution,” Drees said. “Now is the perfect time to bring in fresh leadership for the School of Medicine to carry on the extraordinary work here at UMKC.”

BEGINNINGS

Drees chose to become a physician at a time when most of her female peers pursued careers in nursing, teaching or secretarial work. She didn’t know any doctors who were women but she possessed a passion for science, was interested in how bodies function and enjoyed working with people.

“My mother wasn’t surprised by my choice,” Drees said. “She said being a doctor was the perfect fit for me.”

Drees came to the UMKC School of Medicine in 1998 as associate dean for academic affairs. Previously, she was on the faculty at the University of Kansas School of Medicine, where she received her medical degree and trained in internal medicine and endocrinology.

“The medical school has grown with Dean Drees’ leadership,” said UMKC Chancellor Leo E. Morton. “She took to heart the school’s mission to advance health care in Kansas City and the region. During her tenure, the school addressed the need for health care professionals by adding new master’s level programs. Also, the creation of the biomedical and health informatics program positions UMKC to be at the heart of medical research in the community.”

The UMKC School of Medicine opened in 1971 and was founded on an innovative six-year combined baccalaureate/M.D. program. A docent system of mentoring, early and continuous clinical training and team-based education is still in place.

When Drees arrived, the school had been operating for nearly three decades and programs were strong. However, there was heavy turnover in leadership and Drees saw room for improvement.

HIGH STANDARDS

Melvin Davis has served as Drees’ right hand for a decade as administrative chief of staff at the school. Before that,





(Left) Drees, was the face of the UMKC School of Medicine at events from retirement celebrations to the annual Hospital Hill Run and graduation ceremonies for 13 years as dean. (Right) Colleagues, including director of student affairs Brenda Rogers, M.D., '90, joined friends and family in recognizing Drees and her tenure as dean during a private reception.



they worked together at the Veterans Affairs Medical Center.

Davis knows Drees comes off as tough. She holds herself to high standards and expects her team to rise to them. Yet, she shows compassion, especially when she hears about health concerns of her team's family and friends. She offers resources.

"That is why she is so respected and people appreciate her leadership," Davis said. "She has been effective in leading an institution in a profession that is mostly male. She sets a high bar and serves as a great example."

Jill Moormeier, M.D., chair of the Department of Medicine at UMKC and Truman Medical Centers, has worked with Drees since she arrived and appreciates Drees' analytical mind.

"The decisions she has made, the priorities she has had and the projects she has directed are all derived from a vision of a vibrant school through a

learner's perspective — the students, residents and fellows," Moormeier said. "She brings disparate people together to work for the benefit of the community."

ACCOMPLISHMENT

- **Research.** The School is building on its partnerships and affiliations through research programs in the emerging specialty of bioinformatics — based on collection, analysis and application of data — that will drive better patient outcomes and personalized medicine. Areas of research strength include brain and behavior, women and children's health, chronic diseases, injury and medical education. Research centers in vision, lung diseases, shock/trauma and women's health have been established. In 2013, the Center for Health Insights was formed at the School to take research data to the next level. "Dean Drees has a strong combination of vision

and determination that's critical for launching new initiatives," said the center's director, Mark Hoffman, who met Drees when he was a vice president at Cerner.

- **New education programs.** Graduate and certificate programs in bioinformatics prepare students for clinical research, computational analytics and genomics. To meet evolving health care needs, the School has added new master's degree programs for students to become anesthesiologist assistants and physician assistants.
- **Collaboration.** Under Drees, the School has strengthened partnerships with other schools at UMKC. Examples include the Vision Research Center in partnership with the School of Pharmacy, the Master of Health Professions Education in partnership with the School of Education and the Master of Bioinformatics in partnership with



downtown Kansas City. The School is seeking more diverse students by offering Saturday and summer scholars programs.

NEXT

Drees is a practicing physician with hospital privileges at Truman Medical Centers, Saint Luke's Hospital and the Kansas City V.A. Medical Center. She is an endocrinologist who sees patients with bone and calcium disorders, thyroid disease and other general hormone conditions. She is sought out in media interviews for her expertise on diabetes.

Drees also has served on boards beyond the walls of the School of Medicine.

"Betty manages to have thoughtful, reasoned discussions on complicated topics," said Bridget McCandless, M.D., F.A.C.P., who is president and chief executive officer of the Health Care Foundation of Greater Kansas City. "She is definitely someone you want to bring to the table regarding complex decisions, not just on how health care is delivered but most importantly, how patients are best served in that system."

Drees also plans to spend more time with family. She and her husband have three adult children and two grandchildren. She plans to continue to work full time at the school, which has graduated more than 3,200 physicians.

"Because of the shortage of physicians and in an effort to ease the burden of tuition costs, medical education across the country is again evaluating accelerated programs," Drees said. "Fortunately, we have 40 years of success in this kind of innovation in training physicians for the future. The quality of our students who are accepted in the medical education program is exceptionally high. They are phenomenal people who become outstanding physicians. We also have wonderful faculty, residents, fellows and staff. We have an excellent group of leaders in our department chairs, deans and program directors who will carry the school forward." P

the Schools of Biological Sciences and Computing and Engineering. Also, the school added the Kansas City V.A. Medical Center and Research Medical Center to UMKC's clinical affiliates of Truman Medical Centers, Saint Luke's Hospital, Children's Mercy Hospital and the Center for Behavioral Medicine.

- **Fiscal strength.** The School has been able to strengthen its financial position despite holding tuition increases to a minimum. The improved finances have allowed the School under Drees to increase scholarships, recruit faculty and upgrade facilities. A new clinical skills lab opened earlier this year and docent units are being renovated. "She is an excellent financial manager and she has overcome challenges at the school," Davis said.
- **Prestige.** The school has 22 endowed chairs and professorships, the most of any academic unit in the

University of Missouri System. Seven of the chairs and professorships were funded during Drees' tenure as dean. The most recently filled endowed chair is the Vijay Babu Rayudu Endowed Chair in Patient Safety. "Through endowed chairs, we have a strong academic partnership with the UMKC School of Medicine, especially in cardiac outcomes and patient safety research," said Saint Luke's Hospital CEO Julie Quirin. "Betty has been a highly effective leader for the school and the community."

- **Community.** Drees established a tagline for the school: "*Advancing the Health of the Community.*" Davis said with Drees, that theme goes beyond marketing — it means interacting and reaching out to the community. The School sponsors the 5K Hospital Hill Run, where students also treat people. Students at the Sojourner Health Clinic provide outpatient care to the homeless and underprivileged population in

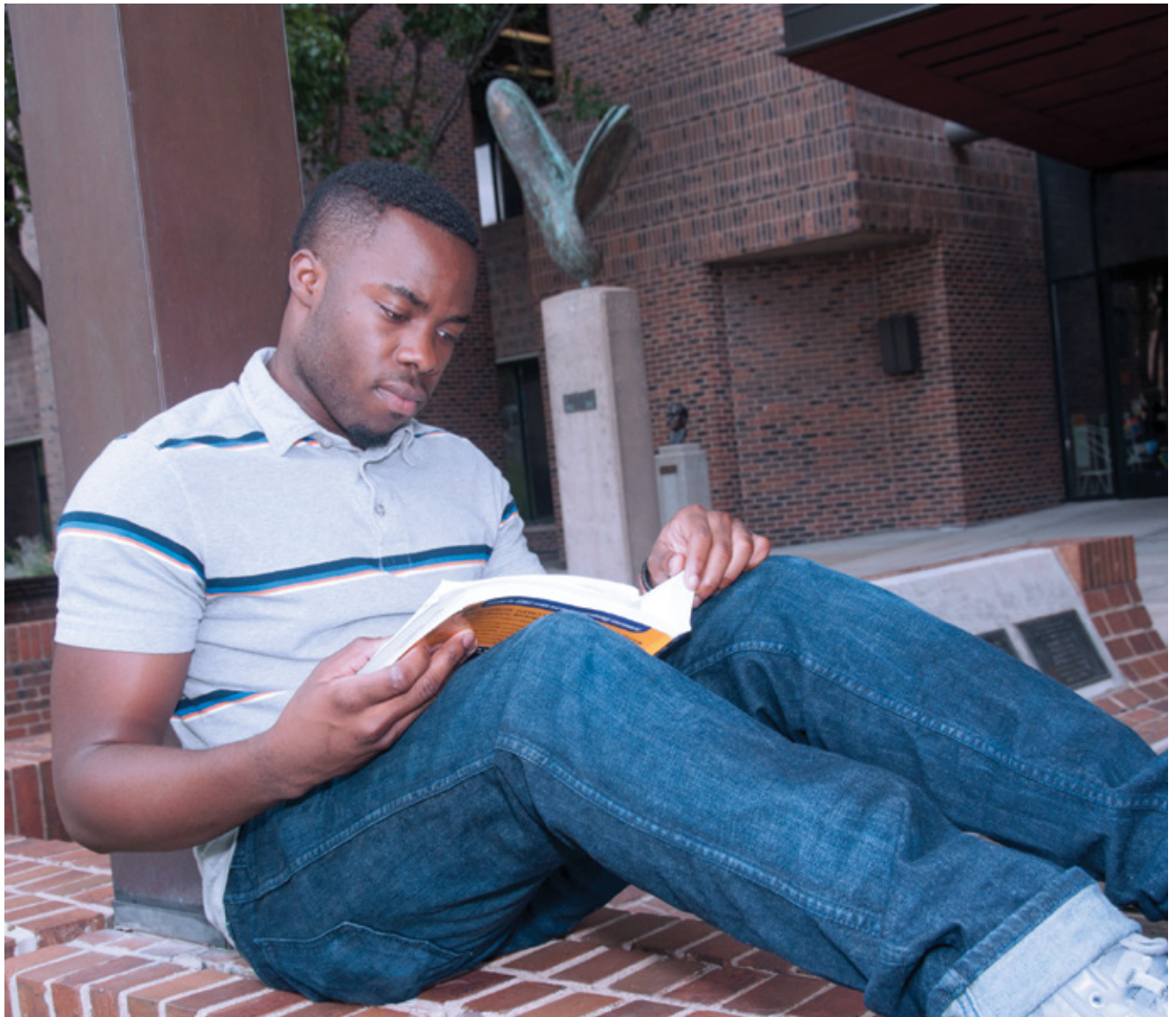


* * * * *

DONORS CHANGE LIVES THROUGH

SCHOLARSHIPS

BY HANNAH LEMON



Scholarships helped pave the way for Nnamdi Okafor, MS 3, to attend medical school.



Logan Burrow, MS 2, says attending medical school would not be possible without the help of the Grace Hoelzel Albano, M.D., (left) Matching Scholarship.

Determined to provide a better life for their family, the Okafor emigrated from Nigeria to the United States before Nnamdi Okafor, MS 3, was born in St. Louis.

“They learned what they didn’t have and whatever they could provide, they gave to my siblings and me,” Okafor said.

Education was paramount in the Okafor household. His mother, a teacher, and his father, a molecular biologist, sent their four children to private schools 30 minutes away from home to nurture their gifted children’s academic interests. Okafor’s love for science guided him to his passion for medicine.

“I like medicine because it involves science where there are numbers and calculations and certain things that will be right, but there’s also a lot of art and technique,” he said. “I like that fusion.”

Okafor remained focused on his goal of becoming a doctor, knowing he would need continued financial aid for his dream to come to fruition. After being accepted to the School, he was awarded the Friends of UMKC School

of Medicine and the School of Medicine scholarships.

“Scholarships have paved the way for me to be able to get where I am today,” Okafor said. “It’s more than the money. It’s not just for me, it’s for my brothers and sisters so they know they can do it, too. It’s for my mom and dad so they know they haven’t wasted their time and

Student Cultural Organization, Student National Medical Association (SNMA), Alpha Phi Omega service fraternity and INDUS, a UMKC group that represents Indian culture.

“Receiving scholarships gives me the motivation to study harder, knowing that I have people behind me, benefactors I’ve never even seen before are willing to help,” Nnamdi said.

During the past five years, School of Medicine scholarships have risen nearly 40 percent, increasing from approximately \$3 million in fiscal 2009 to \$5 million in fiscal 2013. The average medical student graduates with more than \$150,000 in debt. It is critical to ease this burden in order for the School to train future physicians to provide the highest quality of patient care in our communities.

“We encourage all parents, guardians, alumni and those in our community to consider contributing however and to whatever extent they feel is appropriate, through whatever organization they feel best suits their vision, and to assist the students to succeed in their endeavor to take health care to the next level,” said **Doug Zweig, M.D., ’80**, president of the Friends of UMKC School of Medicine

“I wanted to sacrifice for someone else’s dream to become a doctor, just like my parents did for me.” –Ray Cattaneo

to relieve the enormous amount of stress. It’s for Nigeria — hopefully I can go back to them and help my family members and the community down there.”

Not only is Okafor excelling at school, but scholarships also free up his time to be involved in many student organizations including the African

group. “With and through their success, we all benefit.”

Logan Burrow, MS 2, the 2014 recipient of the Grace Hoelzel Albano, M.D., Matching Scholarship and the Class of 1990 Scholarship, said her medical education wouldn’t be possible without the generosity of alumni and friends.



“Alumni giving speaks highly of what they think of the school here,” Burrow said. “If you liked your experience and know it’s a good school, you’re helping future doctors get to this point and to a school like this. It’s touched my life.”

Medicine has played a big part in Burrow’s life. Both parents were diagnosed with cancer. Her mother is 15-years cancer-free. Her father died within a month after his rare, progressive cancer diagnosis five years ago. A high school athlete, Burrow played soccer, volleyball and basketball and had two anterior cruciate ligament surgeries in high school. After shadowing her doctor, she knew she wanted to be a sports medicine physician. Burrow said she values the encouragement from those at the School of Medicine.

“The medical school surprised me with how much people care about you as an individual and not just a number,” she said. “The reason why people do well here is because people care. They’re not doing it alone.”

Both **Grace Albano, M.D., ’90**, and her husband, Michael Albano, a 1968 graduate of the UMKC School of Law who received the 2014 Bill French Alumni Service Award, set the bar for alumni involvement. Scholarship giving is one way they give back.

Albano, who has an internal medicine private practice in Lee’s Summit, Mo., said she and her husband continue to give because they want to support future physicians in receiving the unique training available at the School of Medicine.

“It’s so different than the traditional medical school,” Albano said. “It’s a better way to train and a better way to learn how to treat patients through early clinical exposure, going beyond the textbook.”

Eve Okine, MS 2, said she has wanted



Raymond Cattaneo, M.D., ’03, assistant dean for Years 1 and 2 medicine, established a scholarship in the name of his parents, Ray and Jan Cattaneo, to help student such as Eve Okine, MS 2.

to be a doctor for as long as she can remember. The recipient of the Ray and Jan Cattaneo Scholarship and the School of Medicine Scholarship, Okine credits the support of donors for affording her the opportunity to train at the School of Medicine.

“When I was looking at the cost, I wasn’t sure I’d be able to do it,” Okine said. “Receiving scholarships gets the worries and stress off my mind so I can focus on school, ensuring that I get better grades and in the future become a good doctor.”

Originally from St. Louis, Okine played field hockey during her four years of high school. Now she is active in SNMA at the School of Medicine. She said the innovative training at the School gives her a head start to be better prepared for her future and that she is thankful alumni are willing to help the next generation.

Raymond Cattaneo, M.D., ’03, assistant dean for Years 1 and 2 medicine

and president of the UMKC School of Medicine Alumni Association, started the Ray and Jan Cattaneo Scholarship three years ago when the state of Missouri was offering a match. He named the award after his parents, whom, he said, sacrificed for him and his siblings to have the best opportunities.

“I wanted to sacrifice for someone else’s dream to become a doctor, just like my parents did for me,” he said.

Cattaneo said relieving some of the student debt could eventually help alleviate problems in the medical field today such as the lack of primary care physicians, pointing out that it is hard to get through medical school and the last thing students should be worried about is how to pay.

“Our alumni are really successful in whatever endeavor they do. That stems from the education they received here,” Cattaneo said. “Part of being an educated, responsible citizen is by

giving back. This is an easy way to do that — giving to scholarship funds and endowments.”

In addition to traditional scholarships, the School of Medicine rewards students with awards based on certain aptitudes. One such award is the Shaffer Award for Community Service, created by **Kathy Shaffer, M.D., '79**, and **Stan Shaffer, M.D., '79**. They started the fund to honor Stan's parents who were both interested in education. Stan's father worked at and slept on the floor of a bakery to afford his high school education.

“Luckily, neither of us had anything like that

experience in finding finances to pay for our education, but have felt humbled by his effort,” Kathy said.

The Shaffers serve the underserved all over the world and have been involved in medical mission work since their second year of medical school.

“We want to encourage those students who feel that cause as well,” Kathy said.

Adnan Cheema, MS 6, received the Shaffer Award for Community Service in 2013 and 2014. He said he feels the School of Medicine fosters a sense of community care and is inspired by the

patient population at Truman Medical Center — a safety net hospital.

“We see people who really need help. The clinics are so backed up; you can't possibly serve everyone. So, you can dedicate your time on the weekend, too, to serve more people,” Cheema said.

When he arrived at the School of Medicine, he said, he wanted to branch out and do everything he could. Throughout his years at the School of Medicine, he has volunteered for student-run clinics such as Sojourner Clinic and the Kansas City Free Eye

Clinic and served the community at Harvesters, the Ronald McDonald House, and women's and animal shelters. He is also a student leader who is the past president of Omicron Delta Kappa, a national leadership honor society, and Alpha Phi Omega.

“You always hear that people look up to doctors,” he said. “You should be a good role model. You're in the profession to help people.”

Awards such as the Shaffer award provide Cheema with the necessary financial help to enable him to serve the community as he completes his medical training. The future of medical education and the physician workforce depends on the generosity of donors. Okafor said he is inspired to “pay it forward” after receiving vital support in order to successfully work toward his goal of becoming a physician.

“We need people like the Friends group to give to those who are putting in the effort and work,” he said. “I can't wait to be in that position. To see people who are doing incredible things, but financially are held back, I want to be able to help the best I can.” **P**



Adnan Cheema, MS 6, received the Shaffer Award for Community Service.

Jeffrey Kerby, M.D., '89, Ph.D.



STEVE WOOD, UNIVERSITY OF ALABAMA-BIRMINGHAM

EMERGENCY MEDICINE RESEARCH TAKES MANY PATHS

BY KELLY EDWARDS

Emergency medicine physicians deal with some of the most severe cases that enter a hospital on a daily basis. It's an environment that grabbed **Jeffrey Kerby, M.D., '89, Ph.D.**, as a medical student at the UMKC School of Medicine, and hasn't let go since.

"I remember doing my surgical rotation at Truman Medical Center. That being the county hospital, it was the place for bad injuries," Kerby said. "I've always had a very big interest in trauma. You're always working with the unknown, the unscheduled. That intrigued me and that's why I've stuck with it."

Now at the University of Alabama-Birmingham Medical Center, Kerby said his time at the School of Medicine was the launching pad for his career as a trauma surgeon and researcher.

Emergency medicine goes beyond the trauma cases that enter the emergency room door. Emergency medicine touches on any number of topics, said Matt Gratton, M.D., chair of the UMKC School of Medicine Department of Emergency Medicine. That's why the

School's emergency medicine physicians can be found doing studies on everything from emergency medical services to poison control to emergency room operations.

"You get in on the beginning and then many other people will come in later as diseases are differentiated into a particular specialty," Gratton said.

Faculty at the School and alumni throughout the country are conducting research and working in numerous ways to improve the outcomes of patients who come to the emergency room with severe injuries and illnesses. And many, Gratton said, have become highly recognized experts in their particular specialty.

Here are three who are leading the way with research that focuses on trauma medicine, septic shock and heart attack patients.

+ ADVANCES IN TRAUMA CARE +

During the early stages of Operation Enduring Freedom, Kerby, then an Air Force trauma surgeon, joined about 600 United States military personnel in the Southern Philippines for the Global War

on Terror. As part of a special operations medical unit, he and his group formed five-member teams, filled their backpacks with medical gear and ventured into the field to provide surgical support. The units were designed to get in and out quickly, leaving only a small footprint in the dense, jungle environment.

"The idea with the five-man team is that you can create an operating room of opportunity," Kerby said. "Your equipment is all portable and all the instruments are in your backpack. The combatants were so unstable, you couldn't bring them back (to camp) so we took care of them right there."

Today, Kerby is putting his experience to use as a trauma surgeon at the University of Alabama-Birmingham Medical Center where he is leading a number of emergency medicine projects, working with paramedics to improve therapies for severe traumatic injuries and cardiac arrest patients before they arrive at the hospital and with military medics training for combat.

For the last 10 years, he has worked with emergency medical service personnel as the site's principal



investigator in the Resuscitation Outcomes Consortium, a clinical network funded by the National Heart Lung and Blood Institute of the National Institutes of Health. The university is one of 10 original sites across the United States and Canada participating in the study where paramedics put interventional studies to the test in the field. The work has included finding the best ratios of blood and plasma to give a massively hemorrhaging trauma patient during the initial resuscitation to two large-scale studies in cardiac arrest.

Kerby said the studies provide pre-hospital settings to test emergency medicine treatments that show promise. Kerby said the tests are important because the window for treating traumatic conditions is narrow and providing the proper treatment at the scene or even en route to the hospital can be crucial.

In addition, Kerby has continued his relationship with Air Force Special Operations, directing a training program for Air Force Special Operations Pararescue Jumpers in trauma skills. He's also working with the Department of Defense to evaluate the use of virtual reality to train combat medics in a care under fire environment.

Kerby said he discovered while in medical school that working in a trauma environment was a good fit.

"Trauma is completely unstructured. You never know what's going to happen or when it's going to happen," he said. "That kind of fits my personality. It takes that certain type of personality. I think most trauma surgeons have that."

Kerby says his interest in trauma medicine came into focus during his time in medical school.

"When I got here, trauma was easy for me," he said. "Trauma kind of came second nature to me as a resident, a lot of that came from my experience as a student at UMKC. You got exposed to it a lot during your surgical rotations."

Kerby said his interest in research also began in medical school and grew after moving to Alabama, where he did his surgery residency then joined the trauma surgery team as faculty member.

"Research was always something that I was interested in," he said. "I had an interest while I was in medical school. I put in extra time at UAB in the research lab and did some advanced training in research. Now, I have been able to use those skills to develop a research career."

Kerby headed to San Antonio, Texas, in 1999 to fulfill a military commitment at the U.S. Air Force's largest medical center. At the Wilford Hall Medical Center, a Level 1 trauma center, he continued his work in trauma care and research before joining the special ops team deployed to the Philippines.

That experience has been invaluable, said Kerby. In fact, he says, some of the greatest advances in trauma care have come from the war experience.

"That's why I think it's important for us to maintain a relationship with the

Medicine by Nilofer Qureshi, Ph.D., professor of basic medical science, could make a difference between life and death.

There is currently no known treatment to turn back the effects of septic shock and organ failure once it occurs. Nearly 30-45 percent of those in the United States who go into septic shock will die of the disease. The mortality rate is much higher for those outside of the country.

Septic shock is the condition that can occur when the body experiences inflammation resulting from a spike in bacteria within the body, such as E. coli found in bad meat, or other bacterial contaminations. Qureshi's study of therapies to prevent or treat septic shock has led to promising discoveries. Proteasomes, a normal part of human cells, are pivotal regulators of

"You're always working with the unknown, the unscheduled." –Jeffrey Kerby

military," Kerby said. "We can learn from their experiences. It's helped me as a medical director with EMS service. A lot of the things we learn from the military get transferred to civilian use."

+ FINDING THE KEYS TO TREATING SEPTIC SHOCK +

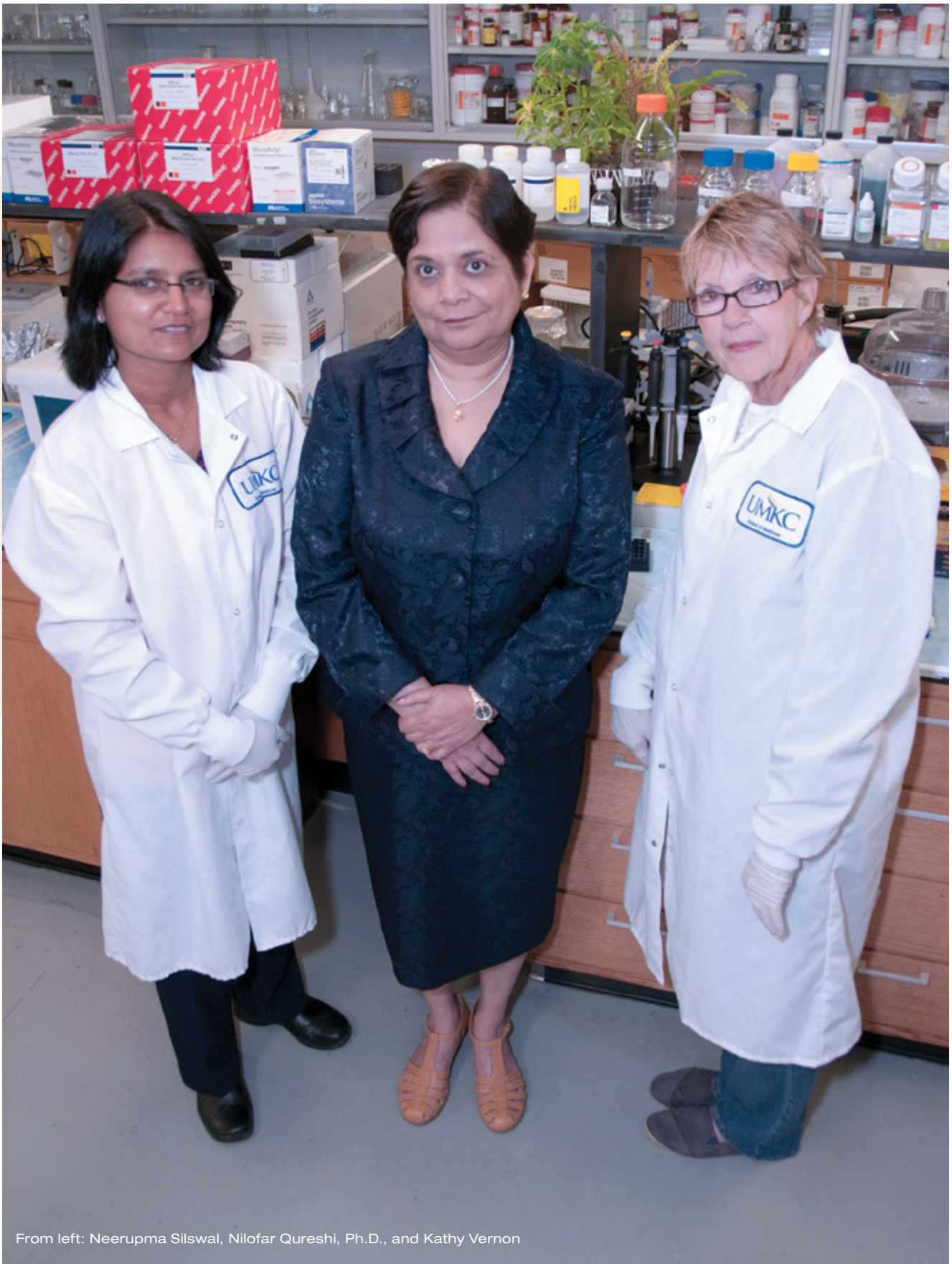
It sounds harmless enough, a weekend cookout with friends, grilling hamburgers or pork chops. But if those who like their meat pink and juicy in the middle eat undercooked beef or pork tainted with the E. coli bacteria, it can lead to dire results.

A small amount of ingested bacteria, if not treated correctly early on, can rapidly multiply. At that point, the massive growth of bacteria in the body can lead to inflammation, and ultimately send a person into septic shock. That's where research taking place at the School of

the inflammation process. Moreover, her study of shock has revealed the compounds that can inhibit or activate the activities of proteasomes proteolytic that can be used to reduce or activate inflammation. These discoveries could one day lead to treatments for currently untreatable diseases.

"Ultimately, we want to develop individualized therapies for patients with septic shock, not using the same drug for everyone. People respond differently to infection," Qureshi said. "We're analyzing plasmas and cells of patients to find new drugs for septic shock based on how they respond."

The problems begin, Qureshi explained, when dead bacteria release their endotoxins into the bloodstream. Endotoxins affect patients in different ways; some patients are resistant to the endotoxins, but some



JOHN CARMODY

From left: Neerupma Silswal, Nilofar Qureshi, Ph.D., and Kathy Vernon



are severely affected.

“Even if we kill the bacteria, we still have to control the patient’s reaction to the endotoxin,” Qureshi said. “If we get the right antibiotic initially, then there’s no problem, it will kill the few bacteria that are in the body. But when the bacteria start multiplying, serious problems set in. Putting it another way, if bacteria don’t kill you, endotoxins may.”

Nearly 35 years ago, Qureshi was the first researcher to unlock the complete primary chemical structure of lipid A, obtained from those bacterial endotoxins that cause septic shock. With that information in hand and backed by grants from the National Institutes of Health, Qureshi has continued to search for therapies to protect the human body from the toxic properties of the endotoxins.

“It can all start with just a contaminated hamburger.” —Nilofar Qureshi

Qureshi brought an internationally recognized research career and her NIH-funded work to the School of Medicine in 2001 when the School opened its Shock/Trauma Research Center. Her work has continually maintained its NIH funding. Now, her recent discovery of the proteasome that ignites the inflammation process crucial to septic shock could unlock the door to finding drug treatments that successfully thwart the poisons unleashed from various bacterial endotoxins and poses new potential challenges such as seeking methods to find out if a person’s immune system is active or inactive. She is also working to uncover significant biomarkers in the plasmas of septic shock patients, which would allow early diagnosis and treatment even before septic shock and organ failure ensues.

Until all those questions are

answered, Qureshi said, it’s still best to be safe and see a physician if symptoms from food poisoning and other bacterial infections worsen or linger for more than a few days. Or, better yet, avoid the risk altogether and make sure that next hamburger isn’t overly pink and juicy in the middle.

“It can all start with just a contaminated hamburger,” Qureshi said.

+ IMPROVING THE HEART ATTACK SUCCESS RATE +

It’s no secret that time is of the essence when a heart attack patient passes through the doors of a hospital emergency room. But not all hospital ERs are equal when it comes to treating cardiac patients. In fact, four out of 10 hospitals face various obstacles that prevent them from getting a heart attack victim from

the front door of the ER to the catheterization lab for treatment within the prescribed amount of time.

Rahul Khare, M.D., ’99, has been working with hospital emergency departments throughout the country for much of the past five years to develop a method of examining their process to find and eliminate those hurdles and raise the level of success for their heart attack patients. Khare’s risk assessment method — or Failure Mode, Effects and Criticality Analysis — helps hospital emergency departments evaluate 51 identified failure points and map out their own particular process to gain an understanding of where their shortfalls lie and how to overcome them by discussing situations unique to their organization and those problems that occur on a regular basis.

“Hospitals deal with a large level of

organizational issues,” said Khare, an associate professor of emergency medicine at Northwestern University and the Center for Healthcare Studies-Institute for Public Health and Medicine. “They all deal with different quality markers and can’t quite figure out why their organization is not doing well. They can use our methodology to find out why.”

Khare began exploring patient safety and quality of care while he was completing his medical residency. Khare was in his second year of a surgery residency at the Cleveland Clinic when he realized surgery wasn’t the field in which he wanted to make a career. When his wife asked him the simple question, “What do you want to do?” Khare said he went back to his time at the UMKC School of Medicine and began to reflect on the clinical rotations he had taken. “I remember thinking back to my emergency medicine rotation and I really did enjoy that rotation a lot,” Khare said. “It’s always fascinated me how some hospital ERs can get their patients through the process more quickly than others.”

Khare and his wife moved to Ann Arbor, Mich., where he joined the University of Michigan Health System’s emergency medicine residency program and got a taste of researching patient safety and quality care. Khare said the Michigan faculty let him “tag along” while doing cutting edge studies of emergency medicine. “At that point, people didn’t really want to talk about errors for fear of legal problems,” Khare said. But when those studies began documenting the errors that occurred in hospital emergency rooms and how they could be avoided, Khare said it opened the eyes of the entire emergency medicine world.

Khare joined the emergency medicine department at Northwestern University in Chicago 10 years ago. Two years into his tenure at Northwestern, he again dove into the research field and enrolled in a Health Services Research Fellowship where he found mentors who helped him learn the arduous task of writing grants, obtaining research funding and getting his findings published.



Rahul Khare, M.D., '99

One of the topics he began exploring was the quality of care for heart attack patients and why some hospitals produced better results than others. Essentially, he asked, do quality measures really matter when it comes to saving lives?

“We realized that policy really does matter. It does help save lives,” Khare said. “Quality metrics are good for patient care and outcomes.”

Khare took that information and received a five-year grant from the Agency for Healthcare Research and Quality to study the process hospital emergency rooms use to provide heart attack patients timely care once the patient comes through their doors. Now in the final year of his research, Khare is preparing his results for publication.

The medical community has recognized for some time that heart attack patients have the best chances of recovery when they receive treatment to open a blocked artery within 90 minutes of reaching the hospital emergency room. “Despite knowing that, at the time I got this grant, 40 percent of the hospitals were not hitting the standard,” Khare said. “What I did was ask, what can we do to improve that number?”

Those hospitals that struggle to reach the mark all have their own particular obstacles, Khare said. For some, it could be recognizing whether a patient was having a heart attack. For others, it might be a matter of getting the cardiologist to the hospital’s catheterization lab in time. Or it could be a need for better coordination throughout the entire emergency room process. Khare said he’s found the hospital operational directors he works with are open to what he has to share and has discovered that often the answer does not require a need for additional manpower or equipment but merely a realignment of the assets already in place.

“A lot of the time, they’re not spending extra money to improve their quality,” Khare said. “And improving quality, that’s what everyone wants to do.” **P**

Updates from our outstanding partner hospitals that help the School of Medicine provide quality a medical education.

Center for Behavioral Medicine

The Center for Behavioral Medicine, located on Hospital Hill, is an agency for the Missouri Department of Mental Health and serves as the UMKC Department of Psychiatry where students, residents and post-doctoral fellows train in integrated physical and behavioral health care. The department has a longstanding collaborative relationship with the UMKC School of Pharmacy to conduct clinical trials of new and emerging psychotropic medications. The School of Pharmacy provides faculty

members with research interest and expertise, and the Department of Psychiatry provides access to patients and research offices. Participation in NIMH-funded clinical trials has included such frequently cited studies as the Clinical Antipsychotic Trials of Intervention Effectiveness trials for treatment of psychosis and the STEP trials in mood disorders. Numerous publications have flowed from this fertile collaboration with the School of Pharmacy.

Children's Mercy Kansas City

Eleven-month-old Jackson Thomas was the 100th patient to receive a liver transplant from the Liver and Intestinal Transplant Program at Children's Mercy. Thomas, from Overland Park, Kan., was diagnosed with hepatoblastoma, a liver tumor, at 7 months old. Thomas was referred to the Children's Mercy Liver Tumor Program, which provides specialized treatment for pediatric hepatoblastoma. The program combines the medical and surgical expertise of the Children's Mercy divisions of Hematology and Oncology with the Liver Care Center.

"Our program provides specialized services and research for treating pediatric patients with malignant liver tumors," said Michelle A. Manalang, M.D., director, Children's Mercy Liver Tumor Program. "Our pediatric subspecialty team includes oncologists, hepatologists and transplant surgeons, as well as support services offered through nursing, social work and nutrition. Our multidisciplinary staff collaborates to create the best care plans for our patients and provides ongoing support well after treatment is complete."

Saint Luke's Hospital

The Marion Bloch Neuroscience Institute at Saint Luke's Hospital achieved Comprehensive Stroke Center certification, awarded in October by the Joint Commission and the American Heart

Association/American Stroke Association. The certification recognizes stroke centers that have state-of-the-art infrastructure, staff and training to receive and treat patients with the most complex stroke cases.

"Comprehensive Stroke Center certification validates our mission to provide the highest level of stroke treatment available, and to deliver the very best possible care to patients in the Kansas City region," said Julie Quirin, CEO of Saint Luke's Hospital of Kansas City.

The Marion Bloch Neuroscience Institute is a global leader in drug and mechanical interventions to block and reverse the permanent and debilitating effects of acute strokes. The Institute has a legacy of innovation that began in 1993 when doctors performed one of the world's first intra-arterial stroke reversal procedures.

Truman Medical Center Hospital Hill

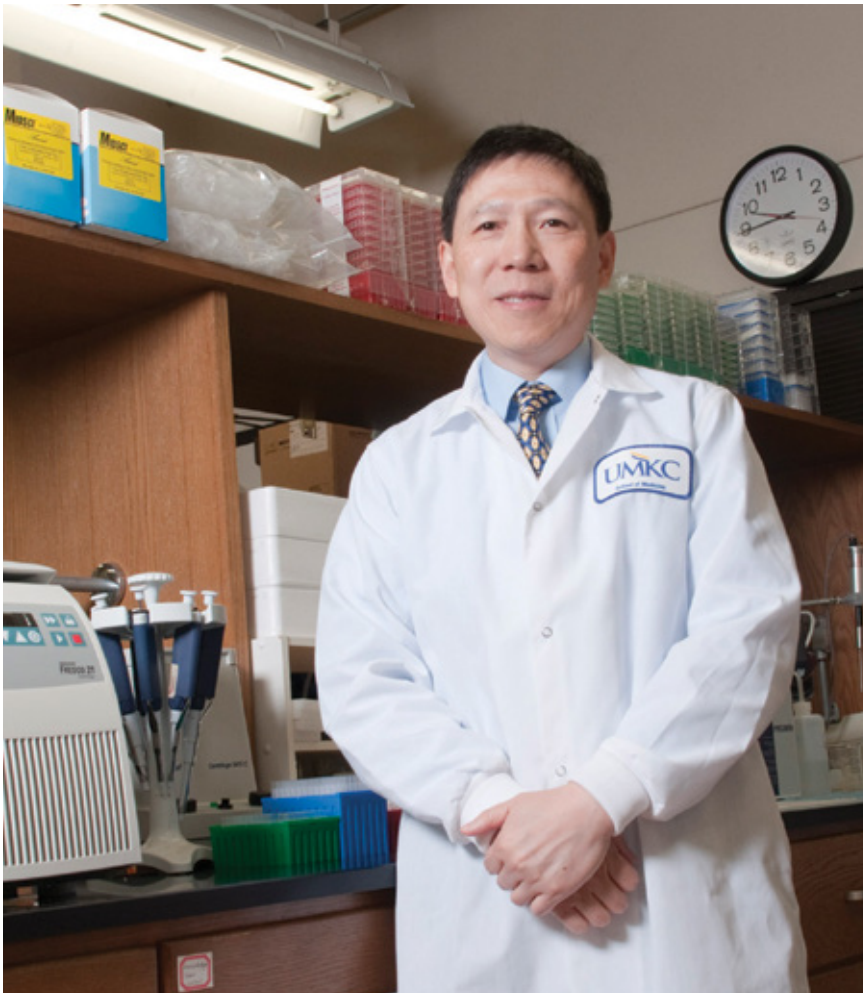
Truman Medical Centers along with partner organizations Landmark Healthcare Facilities, Sabates Eye Centers, University Physician Associates, the National Real Estate Advisors and Regions Bank recently broke ground on the state-of-the-art Hospital Hill Outpatient Center. The \$29 million, 90,000 square foot, four-level outpatient center will help consolidate outpatient medical and surgical services into one facility. Due to open in Summer 2015, the services provided

within the Hospital Hill Outpatient Center will include: Sabates Eye Centers, UMKC Vision Research Center, Eye Foundation of Kansas City, an ambulatory surgery center, diagnostic imaging center, physical/speech and occupational therapy, plastic surgery center and medi-spa, oral and maxillofacial surgery, orthopaedic surgery, urology, podiatry, gastroenterology and ear, nose & throat and audiology.

Truman Medical Center Lakewood

Truman Medical Center Lakewood Surgery Center added the da Vinci Surgical System in early 2014. The da Vinci robotic system is part of the never-ending process of improving patient satisfaction, comfort, safety and reducing costs. The robotic surgical system offers extensive benefits for both provider and patients. Physicians operate the da Vinci with a computer-controlled surgical arm from a separate booth that features a magnified 3-D, high-definition vision system and hand controlled instruments that bend and rotate far greater than the human wrist. The benefits for patients are extensive as the smaller, often concealed incisions also tend to heal faster and with reduced pain and discomfort. Robotic surgery has become a trusted alternative to traditional surgery and conventional laparoscopy. The system is primarily used for removing gallbladders, performing hysterectomies, colectomies, and hernia repairs.

Wang new associate dean for research



JOHN Q. WANG, M.D., PH.D., has been appointed acting associate dean for research. He will have a leadership role in the strategic direction of research at the School of Medicine in research faculty mentoring, evaluation of research outcomes, and in the implementation of the Interdisciplinary Ph.D. Program at the School. He also serves as Westport Anesthesia Services/Missouri Endowed Chair in Anesthesiology Research.

UMKC honored Wang in 2012 with its Trustees Faculty Fellowship Award, which recognizes faculty with a sustained nationally and internationally recognized record of

research and scholarly achievements. He is internationally recognized as a researcher and scholar in molecular regulation of neural function in substance abuse, pain, and cognitive function. He is the author of more than 180 peer-reviewed manuscripts and serves on national and international review committees and editorial boards.

Wang came to UMKC in 1998 as an associate professor in the School of Pharmacy before joining the School of Medicine faculty in 2004 as a professor of anesthesiology and professor of basic medical science.

Hospital Hill apartments cause for celebration

University officials expect the first student housing project on the Hospital Hill campus to help draw the most talented future physicians, nurses, dentists and pharmacists to study and practice in Kansas City. City and state officials expect the new student apartment complex that opened in August to stabilize an evolving neighborhood, stimulate spinoff development and help break down a generations-old racial barrier.

State and city dignitaries joined UMKC and neighborhood leaders and students on Oct. 2 for a grand opening event to celebrate a mission accomplished.



The apartments are filled with a diverse mix of students, 60 percent of whom take all or most of their classes at the UMKC Volker Campus. Vaishnavi Vaidyanathan, MS 3, moved into the new apartment complex in August and now serves as a resident assistant. Vaidyanathan said she appreciated the convenience of living near the medical school and hospital where her classes and clinical rotations are located.

"I really like living here," Vaidyanathan said. "Being close to my classes at the med school is really nice. I can study at the med school and if it's late, I don't have very far to go to get back to my room at night."

She said she also likes the diversity of the student body in the apartments.

Hospital Hill 5K event draws a crowd on Friday night



THE FIRST NIGHT-TIME UMKC School of Medicine 5K race run at night drew a crowd of almost 1,900 participants to Crown Center on June 6 as part of the 2014 Hospital Hill Run.

Race organizers this year moved the race to Friday night on June 6, the night before the 10K and half marathon races. The change paid off with pleasant weather for the 5K run that began and finished on Grand Boulevard in front of Kansas City's Crown Center.

School faculty, students and staff volunteers again served as support personnel for both days of the event, providing assistance at first aid stations located throughout the race routes and at the first aid tent. Sports medicine faculty and fellows provide medical services for the entire event.



Students participate in scoliosis research, presentation



Thome



Melvani

A RECENT GRADUATE and a current student from the School of Medicine worked on two projects with researchers at Children's Mercy Hospital that were selected for presentation at a national meeting.

Andrew Thome, MS '14, and **Roshan Melvani, MD, '14**, are the lead authors of a research poster, "The Safety and Effectiveness of Convex Anterior and Posterior Hemiepiphyodesis for the Treatment of Congenital Scoliosis," that was accepted for presentation at the 2014 American Academy of Pediatrics National Conference and Exhibition, October in San Diego.

Thome also presented the poster at UMKC's Health Sciences Student Research Summit last April.

The research involved studying pre- and post-operative X-rays of adolescent children with scoliosis, or curvature of the spine, to discern the effectiveness of a surgical technique known as hemiepiphyodesis that uses spine and bone grafts to promote normal growth and straightening of the spine. The study compared the results from 10 to 13 years after the surgery to pre-surgery X-rays.

"We wanted to know if the scoliosis got better or worse in the long term," Thome said.

Previous studies had explored the results at a shorter period of time following surgery, he said. The student concluded that the surgery is a safe and effective procedure with promising long-term results.

Newer alternative techniques have been discovered for treating scoliosis.



Thome said his study was pertinent to show hemiepiphyodesis as an effective treatment in settings such as third-world countries where the newer technologies and expertise to perform them may not be available. Thome said the procedure could still be used as well in more advanced centers that don't want to use rods or other implementations.

"I've always known I wanted to do orthopaedic surgery," Thome said. "I was presented this research opportunity at Children's Mercy Hospital, and being interested in orthopaedic research, I was excited to do it."

Thome and Melvani also participated in another project at Children's Mercy,

largely collecting data for "Predictors of Length of Surgery in Posterior Instrumented Arthrodesis for Adolescent Idiopathic Scoliosis." Results of the project, which were also accepted for oral presentation at the pediatrics academy's October meeting, could lead to improved outcomes for adolescent idiopathic scoliosis patients and decrease their overall hospitalization costs, said Julia Leamon, MSN, RN, CPN, orthopaedic surgery research coordinator at Children's Mercy Hospital.

Thome and Melvani worked with Leamon and Nigel Price, M.D., associate professor of orthopaedic surgery at CMH, on the projects.

White Coat, InDOctrination kick off new school year



Gold 2 docent Richard Butin, M.D., coats Divya Igwe; new red 8 docent team members with Docent Emily Haury, M.D., Jazmine Smith, Salvador Rios, Caroline Baghdikian, Gaurav Anand, and education team coordinator Gladys Zollar-Jones; the new Year 1 class introduced at InDOctrination; first-year students Shannon Kilfoy, Jessica Kieu, Lilak Khojestah, and Andrew Jozwiakowski.

TWO ANNUAL CEREMONIES that mark significant moments for students at the UMKC School of Medicine took place in August. The White Coat Ceremony on Aug. 16 at Swinney Recreation Center signified the official beginning of Year 3 of training, when students join their new docent units for their final four years of medical school. The Year 1 InDOctrination Ceremony on Aug. 22 at the Student Union served as an official welcome to 114 first-year medical students.

Both events included the introduction of each student as members of their docent units. A class of nearly 120 Year 3 students beamed with pride as docents placed the doctor's white coat on their shoulders. For the Year 1 students, InDOctrination, marked the beginning of a six-year journey through medical school.

Joseph Bennet, MS 2, received the 2014 Richard T. Garcia Memorial award that is given each year to a Year 2 student at the InDOctrination Ceremony. The award recognizes a student who displays outstanding leadership skills, compassion toward his or her fellow students, and outstanding academic performance throughout Year 1.

Allison Scholes, M.D., assistant professor of emergency medicine, was presented the Outstanding Year 1-2 Docent Award during the White Coat Ceremony.



Resident Research



Radiology resident shows how interventional procedures can benefit space program

David Lerner still dreams of being an astronaut. He's yet to actually don a space suit, but he has merged his day job as a radiology resident at the UMKC School of Medicine with his visions of space exploration to find a better way to treat surgical and medical emergencies that astronauts could face during missions to the moon, asteroids or even Mars.

His idea and ensuing study of treating emergencies with interventional radiology techniques using ultrasound guidance and portable X-ray imaging has grabbed the attention of the medical community at NASA. More than that, it landed Lerner an invitation to the Johnson Space Center in Houston earlier this year to present his work to NASA officials at a Space Medicine Grand Rounds session.

"We were very proud of David when his presentation on why interventional radiology is the best way to treat medical and surgical emergencies on Explorer Class Missions subsequently led to him being invited to present at an Aerospace Medical Association National

Conference in San Diego this past May. His creativity and persistence at pursuing and joining his interests in space and radiology is impressive," said Lisa Lowe, M.D., program director and academic chair of UMKC radiology.

Lerner, now a fifth-year resident, first presented his work in 2013 at a similar conference in Chicago where he was a finalist for the Young Scholar Award for first presenters and has been published in the medical journal of Aviation, Space, and Environmental Medicine.

"I've always been interested in NASA. I was always fascinated and loved the idea of exploration and going beyond the bounds, being a pioneer," Lerner said.

Space exploration presents a unique set of challenges when it comes to emergency medical care, Lerner said. One is simply the limited room available aboard a space ship for extra medical supplies such as X-ray equipment and a large array of surgical supplies — even one the size of the International Space Station, which is just more than a football field long and wide. There is the additional weight of carrying those supplies into space. And then there are the complications that go with performing surgery in a

Radiology resident David Lerner, M.D., went under water to simulate how the tools and practice of interventional radiology might be used in outer space.

microgravity atmosphere.

Even today, in a severe medical emergency on the International Space Station, the process is to stabilize the patient aboard while sending up a space shuttle or using an emergency pod to bring the patient back to Earth and get them to a hospital within 24 hours.

"The problem is, what if you're eight months out orbiting Mars," Lerner said. "You can't say, well let's go to the local hospital because that's eight months away."

So how does one reduce all the surgical equipment and supplies to treat a major medical emergency to a size that would fit within a small bookcase?

Lerner theorized that the interventional radiology tools and techniques, usually percutaneous, that have proven successful on Earth could easily be carried aboard and used in the weightlessness of space. To prove his point, he borrowed a sonogram machine, connected it to his cell phone to receive the image, waterproofed the equipment then went under water in a swimming pool to simulate a zero gravity atmosphere where he filmed himself doing a simulated procedure.

He showed the video as part of his presentation at the national aerospace conference in San Diego last May and at his NASA Grand Rounds presentation as proof that his concept is a viable teaching mechanism for the Astronaut program.

"There are two facets of radiology," Lerner said. "One is imaging, the other world is where you do a lot of interventional, also known as minimally invasive surgical procedures. I think interventional radiology is the future of surgery in space. It's super cool, and it's lots of fun."

EMS Education Program provides interprofessional education



Residents from the Emergency Medicine Residency program joined emergency medical services personnel from the Grandview Fire Department in a joint training session in out-of-hospital emergency and trauma services.

IN AN EMERGENCY situation, delivering quality patient care starts long before the patient arrives at the hospital. Teamwork among out-of-hospital and in-hospital medical providers is vital for patient safety and improved outcomes.

The Emergency Medical Services Education Program at the School of Medicine offers interprofessional education to medical students, emergency medicine residents and fellows, as well as emergency medical technician (EMT) and paramedic trainees, including advanced EMT courses. It also offers specialty training related to out-of-hospital emergency care.

In July 2013, the program welcomed a new medical director who continues to improve resident education in pre-hospital care by getting them involved in real world situations. Jay Reich M.D., F.A.C.E.P., assistant professor of emergency medicine, is also the EMS section chief for the Department of Emergency Medicine and the EMS medical director for Kansas City, Mo., and the Kansas

City Fire Department. He is a supervisory medical officer with a Federal Disaster Medical Assistance Team as well as part of the Mobile Acute Care Strike Teams and an active site reviewer for the Commission on Accreditation of Ambulance Services. Reich came to Kansas City from New York City with more than 25 years of EMS experience.

The School of Medicine's emergency department plays a vital role in helping train EMS health providers along with students, residents and fellows. Reich works to ensure interprofessional training is provided to all involved in medical emergency situations.

"For paramedics to be in a program affiliated with a medical school gives access to providers at all levels," Reich said. "They have the opportunity to rotate through the emergency department and see real-world situations that they can't learn in class. It gives our residents an opportunity to interact with paramedic students and see things from an EMT's perspective. It is also beneficial

for students to get exposure to pre-hospital thinking. They need the skills to evaluate and save someone in the field."

Reich said seeing trauma from the EMS perspective gives students and residents a broader understanding that can help them when providing medical direction. Emily Hillman, M.D., assistant professor of emergency medicine, serves as director of the School's Emergency Medicine Student Clerkship, where students find the emergency room is a prime example of the need for interprofessional training.

The clerkship is a required rotation that provides students the opportunity to participate in interprofessional care including ride-alongs with local EMS units. It also includes experiences between Pharm.D. and medical students and is working on experiences with Social work students.

"It's important because care has become so complicated," said Stefanie Ellison, M.D., associate professor of emergency medicine and associate dean for the Council on Curriculum. "The emergency department is the perfect place to understand team-based care. Everyone has a voice about what's best for the patient. This keeps us from committing grave patient errors."

Students interested in emergency medicine can participate in SIM WARS, an emergency medicine simulation competition that includes a team of medical, EMS, EMT and paramedic students. Emergency medicine faculty and residents and EMS faculty designed and participate in the training. The event prepares the students for the clinical setting and provides an opportunity to practice hand-off communication, Ellison said.

"I'm very pleased with the interprofessional care we're practicing during simulations," Ellison said. "Students have a safe place to practice their roles together. So when the time comes for them to

to students, residents, community

practice interprofessionally, they'll feel like they have some experience and ability."

July 21 marked the first EMS Field Day. The daylong program, including both classroom and hands-on simulations, was a joint training session bringing together Grandview EMS personnel and emergency medicine resident physicians from UMKC coordinated by the School's Department of Emergency Medicine, its Emergency Medical Services Program, the Grandview Fire Department and Life Flight Eagle.

Residents dressed in fire fighting gear to rescue a victim from a smoke-filled enclosure. A short time later, they watched from nearby as firefighters from the Grandview Fire Department worked to extricate an accident victim from a crushed vehicle. Fortunately, the victims were mannequins and the emergencies mere simulations. But for 11 members of the Emergency Medicine Residency program, it provided a first-hand look at what takes place with trauma victims outside the hospital setting before they reach the emergency room.

"Emergency medicine is a specialty field that needs to be involved with out-of-hospital patient care," said Matt Gratton, M.D., professor and chair of emergency medicine. "This field day is a wonderful, up-close-and-personal way to show residents this."

Paul Ganss, M.S., NRP, NCEE, CHSE, clinical assistant professor of emergency medicine and EMS education director, said the event provided residents with an eye-opening experience.

"They got the opportunity to pick up some background and knowledge," Ganss said. "We're looking at doing this again in the future, refining it and making it even better."



Film producer and medical advisor Gene Starzenski, left, and George McCary, III, of the Freedom House Ambulance Service Team were in Kansas City as a part of EMS Week.

SOM shows "Freedom House" documentary during EMS week

The University of Missouri-Kansas City and the Kansas City community had a rare opportunity to view the documentary "Freedom House — Street Saviors," which tells the story of the Freedom House Ambulance Service experiment in 1960s Pittsburgh that taught "unemployable" individuals from the poorest parts of the city how to run an ambulance.

The event was the highlight of the School of Medicine's National EMS Week activities with the film's producer, Gene Starzenski, and an original member of the Freedom House Ambulance Service team, George McCary III, in attendance.

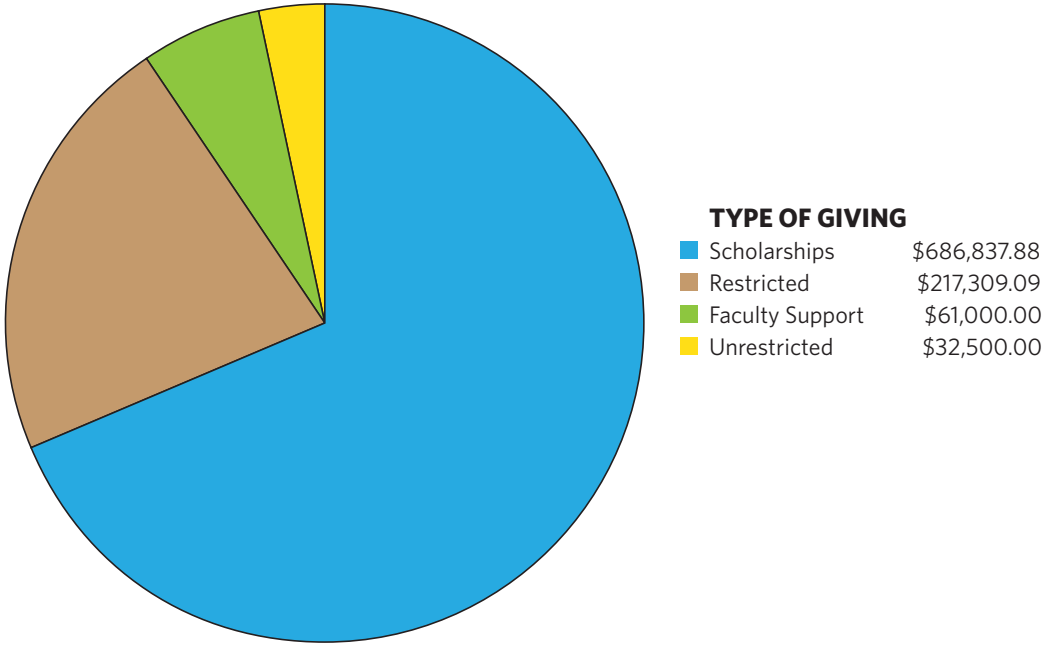
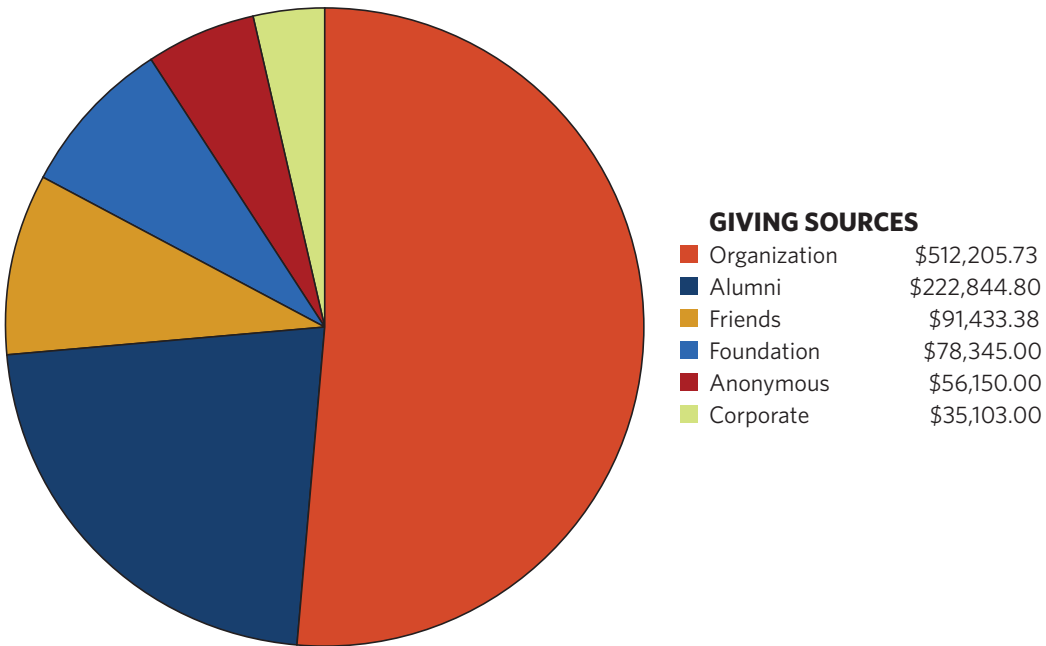
Paul Ganss, director of the EMS Education Program at the UMKC School of Medicine, said Freedom House is a great example of overcoming adversity and an important piece of paramedic history.

"It shows that there are people out there who want to succeed, and when given the opportunity and the resources they can," he said. "It provided a view into the history of a young profession. I think that showing the story here is important as it enhances the fact that UMKC has one of the oldest emergency medicine programs in the country."

The film has only been shown in select cities throughout the United States, and this is the only way to view it. Starzenski travels the country to film festivals, major EMS conferences and educational institutions to keep the story of the Freedom House Ambulance Service alive. The Freedom House experiment is said to have led to the first formally trained paramedics in the United States and formed the national paramedic curriculum taught for the next 40-plus years.

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Recognizing Alumni Excellence

Divya Shroff leads the way of electronic transformation of health care

Electronic Medical Records (EMRs), mobile devices and other technological advancements permeate the health care setting. Physicians face the changing landscape of medicine from leisurely spending time with a patient while jotting notes on a clipboard to learning new technology for patient information gathering in an effort to more efficiently and accurately deliver care. **Divya Shroff, M.D., '00, FHM**, has been on the forefront of clinical innovation throughout the past decade.

Shroff is already nationally known in her young career as a leader in technology development for improving patient care, patient participation and physician workflow, earning her recognition in publications such as Time Magazine, The Washington Post and CIO Magazine. The Hospital Corporation of America recently appointed Shroff as chief medical officer for TriStar Centennial Medical Center, the company's 657-bed flagship facility in Nashville, Tenn.

After completing her internal medicine residency at Barnes-Jewish Hospital and Washington University School of Medicine in St. Louis, Mo., Shroff joined the Veteran's Health Administration in Washington, D.C., as an academic hospitalist. While leading groundbreaking projects, she helped transform health care delivery in hospitals across the country while quickly rising in the ranks to associate chief of staff — informatics and ultimately chief medical information officer, the first person to hold that title at the Washington, D.C., Veterans Affairs Medical Center.

"There is a role for this kind of physician," she said. "It's nice to see that more roles that weren't there before are evolving for physicians."

In 2008, Shroff led the creation of the Blackberry EKG transmission for off-site cardiologists, a mobile application that sends EKGs to a physician's Blackberry.

This was the first project of its kind in the world. Clinical studies show that patients who suffer a heart attack need to arrive at the ER within 90 minutes. This tool enabled on-site health care providers to receive feedback from off-site specialists as quickly as possible.

"Starting as an academic hospitalist, I learned IT, as it was really part of the vernacular," she said. "I then realized I had an aptitude of being on both sides of the fence. I could communicate with



programmers to let them know how the doctors think, and I could explain to physicians how this fits into their workflow."

She went on to create the electronic provider handoff tool, which caught on nationwide. It was a new way of pulling pertinent patient information from an electronic medical record to pass on to the next health care provider in accordance with HIPPA. Next was an inpatient interactive bedside television that communicates with electronic medical records within the Veterans Health Administration and prescribed appropriate videos for the patient to watch, according to his or her ailment, along with notifying them of upcoming inpatient appointments.

"I wanted to turn information into

information sharing," Shroff said.

"Technology is only good if we take advantage of what it can offer. It needs to be value-added and make clinical work less repetitive by utilizing information that already exists."

Before her appointment as chief medical officer with the Hospital Corporation of America, Shroff served as the chief clinical transformation officer and vice president in the Clinical Services Group. She was responsible for the implementation of electronic health records across the system, clinical leadership for mobile health technology development and telehealth deployment for patient and provider engagement and improved clinical workflow, as well as additional efforts to foster physician leadership and communication. During her time at HCA, she was pivotal in employing a physician leadership program in 70 group hospitals, and created a website in use by 11,000 clinicians today.

"Patients need to be owners in their health care," Shroff said. "With new tools, they can be accountable and become a true partner to the doctor. We are a team."

Shroff said she would like to see physicians she oversees become a part of leading the quality conversation.

"I want them to be passionate and caring about their clinical areas of expertise, drive quality initiative projects and wanting to be that change agent," Shroff said. "In this climate of change, we need to figure out how to engage with the physician leadership voice."

Shroff said she thinks one of the most exciting aspects of medicine today is the evolving physician leadership voice.

"Technology is just foundational," she said. "It can aid in clinical decisions and enable physicians and patients to share information in real time but at the end of the day, technology is just one of the many tools in the toolkit."

Updates

Karen Y. Baucom, M.D., '75, was selected to the 2014 class of Women Who Mean Business by the Kansas City Business Journal. The program recognizes leading businesswomen who have proved to be true leaders in the business community. Baucom is the medical director for the Baucom Institute for Longevity and Life Enhancement, managing the business side of the clinic while continuing her work as a primary care physician. She is the only Kansas City-area physician certified in anti-aging and regenerative medicine.

Karen Remley, M.D., '80, has been appointed chief medical director of Anthem Blue Cross and Blue Shield in Virginia. She is responsible for the management of the organization's clinical program, care coordination and quality of care initiatives, serving Anthem's employer and individual market clients, and has a leadership role in expanding the organization's provider collaboration activities. She is a former commissioner of health for the Commonwealth of Virginia and was founding director of the M. Foscue Brock Institute for Community and Global Health at the Eastern Virginia Medical School in Norfolk.

Rebecca Hierholzer, M.D., '81, was included, along with three other UMKC alumni, in Nonprofit Connect's 2014 Class of Rising Stars of Philanthropy. Hierholzer is a board certified emergency physician who has worked in emergency departments since 1984. She co-founded Collection of Victim Evidence Regarding Sexual Assault in 2000 and is a supporter of the American Heart Association and the Emergency Medicine Foundation of MOCSA. She also helped to establish the Missouri Honor Fund within the American Medical Association Foundation, an organization that supports community health initiatives in Missouri.

George Woodward, M.D., '83, joined the medical staff at Daviess Community Hospital in Washington, Ind., as the sole provider in the hospital's new neurology clinic that opened this past July. He will perform in-office EMGs and EEGs at the hospital. Woodward previously served as a neurologist at Altru Health System in Grand Forks, N.D., and as clinical associate professor at the University of North Dakota.

Bill Schwartz, M.D., '86, a maternal-fetal medicine specialist, has joined Sacred Heart Medical Group and the Regional Perinatal Center at Sacred Heart Hospital in Pensacola, Fla. He completed his residency training in obstetrics and gynecology at the University of Missouri and completed his fellowship training at the University of Oklahoma in maternal-fetal medicine. He has a special interest in treating chronic hypertension and unborn babies that are small for their gestational age.

Capt. Christopher Quarles, M.D., '92, was the June speaker of the meeting of the Bremerton-Olympic Peninsula Council of the U.S. Navy League. Quarles became commanding officer of Naval Hospital Bremerton on Aug. 6, 2013. The community-based, acute care and obstetrical hospital provides a variety of ambulatory, acute and specialty clinics and is the parent command for three branch health clinics in the Puget Sound area.

Rosy Herath, M.D., '94, has joined the medical staff of Lake Regional Health System in Osage Beach, Mo. She is a pediatric hospitalist who treats children and adolescents admitted to Lake Regional Hospital through a coordinated effort with the child's regular physician. She previously worked at Washington University, serving children at the St. Louis Children's Hospital and the BJC

HealthCare-affiliated hospitals as a pediatric hospitalist.

Tim Davis, M.D., '96, was featured on "The Doctors" TV show. He is one of a few people in the country working on autologous stem cell harvest from the hip to treat spinal disorders and joint arthritis. Davis is the founder and medical director of Orthopedic Pain Specialists and is an expert in minimally invasive approaches to treat neck, back, and sports injuries. He is involved in multiple research projects using biological therapies to treat degenerative disc disease and has published and presented nationally and internationally.

Nguyen Tran, M.D., '05, an allergist with Allergy and Asthma Care in Overland Park, Kan., was quoted in a May 16 Kansas City Star article about high pollen counts and other concerns for allergy sufferers.

Andrew Moore, M.D., '07, is now seeing patients at a new oncology outreach clinic in Dexter, Mo. Moore is affiliated with Southeast Hematology/Oncology in Cape Girardeau and sees patients at the new clinic every Thursday.

Stephanie Schnepf, M.D., '08, general surgery residency graduate, was featured in the St. Louis Review article that chronicled her patient's battle with breast cancer and the personal relationship the two of them formed.

The logo for the UMKC Alumni Association features the text "UMKC alumni" in a large, blue, sans-serif font, with "association" in a smaller, blue, sans-serif font below it. A blue horizontal bar is positioned between the two lines of text.

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From the president of the SOM Alumni Association



DEAR ALUMNI:

I hope this letter finds you happy and healthy.

I would like to take this opportunity to thank Betty Drees, M.D., for her 13 years of service to School of Medicine as dean. Through her dedication, commitment, and stamina, she has left the School on a firmer foundation than when she entered her deanship. Scholarships and endowments are up. Tuition is stable. Alumni support is growing. Educational services are strong. Her leadership has fostered a solid reputation of the School and its alumni, not only in Kansas City, but nationally. We can be proud of the legacy that Dean Drees has fostered these past 13 years.

I also want to welcome Dr. Steven Kanter as our next dean. As you now know, Dr. Kanter comes to us from the University of Pittsburgh with a robust history of elevating his institutions to the next level. As I have come to know Dr. Kanter, I am positive that he is the perfect person to take the successes of the past and translate them to triumphs in the future. We wish him nothing but the best.

Now down to some business. The School of Medicine Alumni Association is also currently in transition. We have recently combined forces with the National Board of Visitors, which was commissioned by Dean Drees. Our goal is to harness the power of both alumni and community leaders to further the mission of the Alumni Association. As we continue to define our mission and goals, we will, as always, need your help. Please be on the lookout for requests to join us!

With the transition to a new board, and due to my election as president-elect of the University-wide Alumni Association, my time as president of the School of Medicine Alumni Association has come to a close. I am forever grateful to the countless alumni and staff who have been dedicated to this association with me as their leader. I would like to especially thank Dean Drees, Dr. Julie Brown, Janelle O'Dell, and Catherine O'Sullivan. I will continue to serve on the Association and look forward to assisting the members achieve prominence.

In the holiday spirit,

A handwritten signature in black ink, reading "Raymond A. Cattaneo, M.D., '03, M.P.H., F.A.A.P." The signature is stylized and cursive.

Raymond A. Cattaneo, M.D., '03, M.P.H., F.A.A.P.

IN MEMORIAM



Lafferty

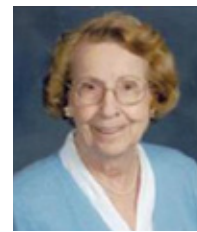
William Lafferty, M.D., professor and Merle and Muriel Hicklin/Missouri Endowed Chair in Medicine, died May 5, 2014, following a brief illness.

He came to the School of Medicine in 2009 as an endowed chair and also served as the interim chair of the Department of Informatic Medicine and Personalized Health, now the Department Biomedical and Health Informatics, overseeing the department's education and research programs. As the Hicklin Chair, Lafferty worked on outcomes research, mentored faculty in the Department of Medicine to enhance research efforts, and collaborated with other hospitals and schools inside and outside UMKC and with local public health agencies to promote interdisciplinary and inter-agency research. He also worked with various community agencies to promote research that addressed the health needs of underserved populations in the region.

He served on numerous panels and advisory groups for institutions such as the Centers for Disease Control, the National Center for Complementary and Alternative Medicine and the RAND Corporation and was a frequent presenter at scientific meetings and conferences.

In 2012, Lafferty served as principal investigator for a National Institutes of Health project exploring health disparities between poor populations in urban neighborhoods compared to the nation as a whole. UMKC was one of just five universities in the country to receive a special NIH grant for the Urban Universities for HEALTH Learning Collaborative project.

Lafferty earned both his bachelor's and medical degrees from the University of Kansas, followed by an internship and residency at the University of New Mexico Health Sciences Center in Albuquerque. Before coming to UMKC, he served as office director for the Washington State HIV/AIDS epidemiology office from 1985-1993 and became medical director of the Broadway STD Clinic for the Seattle-King County Department of Public Health, remaining in that position until joining the faculty at the University of Washington in 1996.



King

Alyce Mae (Dunmire) King, former coordinator of continuing medical education at the UMKC School of Medicine, died on June 4, 2014. She was 90.

Born in Wahoo, Neb., she graduated from Coin, Iowa, High School and attended the Commercial Extension Business School in Omaha, Neb. She moved to Kansas City with her husband, Robert, and joined the School of Medicine. She also served as executive director of the Kansas City Southwest Clinical Society.



Shelden

Russell Dallmeyer Shelden, M.D., a prominent Kansas City physician and UMKC School of Medicine donor, died on June 20, 2014. A lifelong resident of Kansas City, Shelden earned an undergraduate degree from the University of Missouri-Columbia, and his medical degree in 1949 from Washington University School of Medicine in St. Louis. He completed his internship at Kansas City General Hospital #1 and his residency at Research Hospital. He practiced anesthesiology at Research Hospital until his retirement.

Shelden served as a member of the American Medical Association, Jackson County Medical Society, president of the Kansas City Society of Anesthesiologists, president of the Missouri Society of Anesthesiologists, chairman of anesthesiology for the Missouri Medical Association, and district director for the American Society of Anesthesiologists and the Kansas City Southwest Clinical Society.

Marjorie Sirridge, M.D. 1922-2014



MARJORIE SIRRIDGE, M.D., a cornerstone of the UMKC School of Medicine, died peacefully on July 30. She was 92.

Sirridge was integral to the School of Medicine from its inception, serving as a founding docent and later as the School's dean. Combined with her deep appreciation for medical humanities, Sirridge brought an approach to medicine that emphasized empathy and compassion for the patient, characteristics that are bedrocks of the School's curriculum.

Sirridge earned her medical degree in 1944, graduating first in her class from the University of Kansas School of Medicine. Just two years later, when informed that it was not acceptable to become pregnant while completing one's residency program, Sirridge put aside her career to begin a family.

She resumed her medical career in 1951, picking up where she had left off by specializing in internal medicine and hematology at the Cleveland Clinic Foundation and the University of Kansas Medical Center. She published her first book in 1967, "Laboratory Evaluation of Hemostasis and Thrombosis," which has gone through three editions.

After working in private practice and serving on faculty at the University of Kansas School of Medicine for more than a decade, Sirridge and her husband, William, were recruited to serve as two of the three founding docents for the new University of Missouri-Kansas City School of Medicine when

the School opened in 1971. Sirridge spent the remainder of her career in numerous roles at the School.

"We have all been extremely privileged to have worked with Dr. Sirridge for many years and have been enriched by her tremendous wisdom and guidance," said School of Medicine Dean Betty M. Drees, M.D., F.A.C.P. "Her contributions to the School of Medicine are many and will have a lasting and positive impact on future generations of physicians."

She was highly active in health-related activities at all levels and served on many community-related boards. Among a long list of medical-related honors, Sirridge received the Alma Dea Morani, M.D., Renaissance Woman Award from the Foundation for the History of Women in Medicine in 2010. Her civic efforts were also recognized with many awards and honors including the Outstanding Kansas Citizen and the Kansas City Career Woman of the Year awards.

While serving as a docent, Sirridge established the UMKC Program for Women in Medicine in 1983 to help female students and physicians succeed in a male-dominated system. Due in part to her influence, the UMKC School of Medicine boasts one of the highest rates of female students among the country's co-educational medical schools.

When the National Institutes of Health's National Library of Medicine created a traveling exhibit in 2003 called "Changing the Face of Medicine:

Celebrating American Women Physicians," Sirridge was included as one of the pioneering women in medicine. The exhibit now exists online to honor women who have excelled medicine.

Asked how she stood out and made a difference as a physician, Sirridge wrote in her national library biography, "I genuinely care about patients. I get a great deal of satisfaction out of patient care."

Marjorie and William Sirridge endowed the Sirridge Office of Medical Humanities, and Marjorie Sirridge became its first director in 1992, building a program of courses in medicine and the humanities that other medical schools in the country have copied. She later endowed a professorship in medical humanities.

Sirridge was appointed dean of the medical school in 1997 and served in that role until 1999, when she again turned her focus to the medical humanities program. The School of Medicine honored her in 2005 with an appointment as a professor emerita.

In 2011, the University of Kansas Women in Medicine and Science organization honored Sirridge by establishing the annual Marjorie S. Sirridge, M.D., Excellence in Medicine and Science Award.

"There have been many ups and downs," Sirridge said in her biography. "But I have never felt that I made the wrong decision when I decided to be a physician."

Reason for Celebration

City, state and university dignitaries gathered on Oct. 2 to commemorate the grand opening of the new student apartment complex on Hospital Hill. Officials took part in a ribbon-tying ceremony to signify the uniting of communities for the purpose of revitalizing the neighborhood (story on Page 21). Pictured are Kansas City Councilman Jermaine Reed, developer Hugh Zimmer, University of Missouri System President Timothy Wolfe, Kansas City Councilwoman Melba Curls, and UMKC Chancellor Leo E. Morton.

