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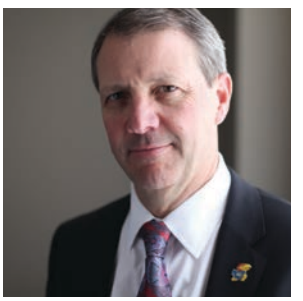
MESSAGE FROM THE EXECUTIVE VICE CHANCELLOR



Walking around the campus of the University of Kansas Medical Center, it is apparent how far women have come in the world of academic medicine. Half of our medical students are now female, and women are well represented in leadership positions.

However, there is little doubt that a glass ceiling (or "sticky floor," as some have characterized it) remains in place that is preventing many women from being promoted in the academic medicine and science environment. Our cover story in Kansas Medicine + Science takes a closer look at what barriers are keeping women from advancing at the same pace as their male colleagues – and what we can do to help women shatter that glass ceiling.

Also in this issue, we profile Tyrel Reed – one of the all-time Kansas Jayhawk basketball greats – who is now helping other athletes as a physical therapist. We also sit down with Michael Artman, who is not only the chair of pediatrics at KU Medical Center, but also the pediatrics chair at Children's Mercy Hospital and the University of Missouri-Kansas City. And we look at how KU Medical Center has taken a leadership role in finding a cure for polycystic kidney disease.

We hope you enjoy this issue of Kansas Medicine + Science, and as always, we appreciate any feedback from our readers. Just drop us an email at kmands@kumc.edu. We look forward to hearing from you. +

DOUG GIROD, M.D.
Executive Vice Chancellor, KU Medical Center

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NEWS FROM KU MEDICAL CENTER

KU MEDICAL CENTER RESEARCHERS FIND CHOLESTEROL-FIGHTING STATINS MAY HOLD THE KEY TO FUTURE CANCER TREATMENT

Researchers at the University of Kansas Medical Center have found that high doses of drugs commonly used to fight high cholesterol can destroy a rogue protein produced by a damaged gene that is associated with nearly half of all human cancers.

Tomoo Iwakuma, M.D., Ph.D., an associate professor in the Department of Cancer Biology, and his team have published the first research showing how the use of statins, such as Lipitor (atorvastatin), Crestor (rosuvastatin) and Mevacor (lovastatin), can shut down structurally mutated p53 proteins that can accelerate cancer progression, while not harming proteins produced by healthy p53 genes. Although statins are not a cancer treatment per se, the understanding of how they affect mutated forms of p53 could lead to new medications designed specifically to knock out the damaged p53.

When p53 works properly, it produces proteins that keep cells from growing and dividing too quickly. When p53 becomes mutated, either spontaneously or through heredity, its regulating abilities no longer work and cells can grow out of control, forming tumors and invading normal tissues.

Tomoo's research appeared in the November 2016 issue of Nature Cell Biology and has been recommended for F1000Prime, a prestigious peer-review service that identifies research that is likely to influence biomedical and clinical knowledge.

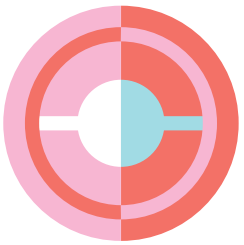
STUDY FINDS THAT THE CROCETINIC ACID IN SAFFRON MAY INHIBIT THE PANCREATIC CANCER CELL GROWTH

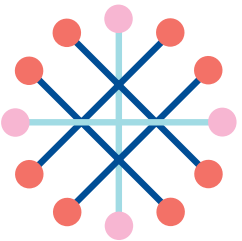
For several years, researchers in KU Medical Center's Department of Cancer Biology have been examining the effects of crocetin on pancreatic cancer, a deadly disease that responds poorly to current chemotherapy and radiation treatments. Crocetin is derived from saffron, a popular spice and food colorant and a key ingredient in many traditional Indian medicines.

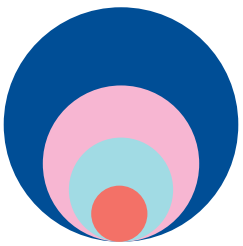
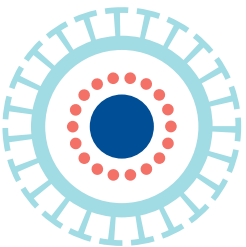
In a study published in the journal Oncotarget, a team of researchers led by Animesh Dhar, Ph.D., an associate professor of cancer biology at KU Medical Center, found that crocetinic acid, a purified compound from crocetin, showed the inhibition of growth in human pancreatic cancer cells grown either in a dish or as tumors under the skin of mice. The study found that after 21 days, there was a significant reduction in tumor growth in the group of mice who received the crocetinic acid.

Pancreatic cancer is one of the deadliest types of cancer. It is the fourth most common cause of cancer deaths in the United States. More than 43,000 people are diagnosed with pancreatic cancer each year, and about the same number die each year from the disease. Only about three percent of people with pancreatic cancer live more than five years after diagnosis.

The research is funded by an RO1 grant from the National Cancer Institute along with a pilot project grant from the KU Cancer Center. The team is now seeking funding for a Phase 1 clinical trial for crocetinic acid.





KIRMAYER CENTER EARNS MEDICAL FITNESS FACILITY CERTIFICATION

Kirmayer Healthy Lifestyle Center at the University of Kansas Medical Center has been named a certified medical fitness facility by the Medical Fitness Association (MFA), making it the first university-based facility in the country to earn this certification. Kirmayer joins more than 40 other facilities worldwide to receive this distinction. By achieving certification, Kirmayer will be able to better integrate fitness into a patient or client's healthy lifestyle plan or continuum of medical care. The primary benefit of the designation is that it certifies Kirmayer has demonstrated the ability to provide safe and effective fitness programs and services for those with a medical prescription for exercise. In recent years, doctors affiliated with KU Medical Center have been referring patients to Kirmayer for eight-week medical exercise program as a way to address chronic or acute disease.

THE KU ALZHEIMER'S DISEASE CENTER AWARDED NATIONAL DESIGNATION RENEWAL

The KU Alzheimer's Disease Center had its national designation renewed for five years by the National Institute on Aging. The KU Alzheimer's Disease Center is one of only 31 nationally designated centers by the National Institute on Aging (NIA), part of the National Institutes of Health. Alzheimer's disease is the sixth-leading cause of death in the United States, and there is currently no proven cure or treatment to delay its progression. The grant money and designation will help researchers at KU Alzheimer's Disease Center continue to unravel the mysteries of the disease. The center's researchers are specifically focused on the contribution of metabolism to Alzheimer's disease, which means examining how altering metabolism and cell energy, either through drugs or other interventions such as exercise and lifestyle changes, may change the course of the disease.

RESEARCH AT KU MEDICAL CENTER COULD PAVE THE WAY FOR NEW TREATMENTS TO DELAY OVARIAN AGING

Research led by investigators at KU Medical Center shows that women may be losing their ability to produce healthy eggs later in life due to excessive scarring and inflammation in their ovaries. The study in mice was published in the journal, Reproduction. These findings could pave the way for new treatments that delay ovarian aging. Age is the most important factor in female infertility, and older mothers (aged 35+) are more likely to suffer from miscarriages and have a higher chance of embryos with chromosomal abnormalities or children with birth defects. As women worldwide delay motherhood, more research into the mechanisms underlying reproductive aging is needed. This has wider implications for women's health because ovarian fibrosis is a key feature of polycystic ovarian syndrome (PCOS) and is also an unintended consequence of medical interventions such as chemotherapy and radiation.

MEDICAL CENTER PART OF CONSORTIUM TO RECEIVE $13.75M IN US DOT GRANT MONEY

KU Medical Center and the University of Kansas are partners in a seven-school consortium that will receive roughly $13.75 million in grant money during the next five years from the United States Department of Transportation to research ways to make the country's roadways safer. Abiodun Akinwuntan, Ph.D., MPH, MBA, professor and dean of the School of Health Professions, and Shelley Bhattacharya, D.O., MPH, an associate professor in the Department of Family Medicine, are the co-investigators for the award at KU Medical Center. One of the main goals of the grant at KU Medical Center is the development of the Drivers' Safety Institute, a community resource to improve the fitness of all drivers, including drivers hauling hazardous materials.

KU MEDICAL CENTER BEGINS CONSTRUCTION OF A NEW HEALTH EDUCATION BUILDING

KU Medical Center will complete construction in July on a $75 million Health Education Building construction project.

The 171,000-square-foot building will facilitate the education of a greater number of physicians, nurses and allied health care professionals and address critical health care worker shortages in Kansas. Currently, 90 of the state's 105 counties are medically underserved, and it is estimated that 30 percent of the current physician workforce will retire or otherwise leave their medical practices within the next decade. KU trains 211 medical students annually across all of its campuses in Kansas City, Kansas, Wichita and Salina. With the new Health Education Building in Kansas City and future expansion efforts in Wichita, the School of Medicine looks to increase its class size across all campuses by as many as 50 students.

Chancellor Bernadette Gray-Little, Ph.D., chancellor for the University of Kansas, pointed out that Kansas is home to the state's only school of medicine, which means the university is uniquely positioned to address Kansas' critical shortage of health care professionals. Gray-Little said the new building will enable KU to increase the number of doctors trained, and to train them in the technologically advanced environment required by a modern health care curriculum.

The building will serve as the primary teaching facility for the KU schools of Medicine, Nursing and Health Professions and will include significant simulation space and flexible, state-of-the-art learning space to support interprofessional education and other new models of teaching.

Douglas A. Girod, M.D., executive vice chancellor of KU Medical Center, said the facility will change the way KU educates and trains physicians, nurses and other health care workers for Kansas. It will allow the medical center to accelerate the move toward a modern health education curriculum that emphasizes small group, interdisciplinary problem-solving and advanced patient simulation technology.

The project is funded by $25 million in state bonds, $15 million from the University of Kansas Medical Center and private gifts raised through KU Endowment, which includes a $25 million lead gift from the Hall Family Foundation, of Kansas City, Missouri. David and Marilyn Zamierowski, of Overland Park, Kansas, made a lead gift for simulation equipment and facilities that will be recognized as the Zamierowski Institute for Experiential Learning, with locations in the Health Education Building and Sudler Hall. Fundraising will continue during construction to meet anticipated increases in expenses related to technology and equipment for the building.

Helix, a Kansas City-based architecture firm, and CO Architects, a Los Angeles-based architecture firm, serves as the design team on the project, and McCown Gordon is the project's general contractor. Construction on the Health Education Building is expected to be completed by the summer of 2017.

TOOLKIT PREPARES PRECEPTORS FOR INTERPROFESSIONAL TEAMS OF LEARNERS

KU Medical Center and the National Center for Interprofessional Practice and Education teamed up to develop a toolkit featuring a series of online educational modules and small-group activities focused on the professional development of clinical preceptors who lead interprofessional student teams.

This toolkit, "Preceptors in the Nexus," will help preceptors in any health care profession learn to effectively train interprofessional groups of students, offering guidance to individuals who wish to champion interprofessional practice and education (IPE) in their practices. Preceptors – health care providers who serve as onsite instructors during experiential learning – play a crucial role in educating students on the real-world demands of patient care. An important part of learning is to see interprofessional collaborative care in action, and preceptors are at the frontline of showing students the unique and rewarding experiences of working with an interprofessional team.

Jana K. Zaudke, M.D., assistant professor in the Department of Family Medicine, said the tool kit can help preceptors develop and support the behaviors and skills that enrich professional work and then work with students to apply that to patient care.

Each component of the toolkit is centered on the "Nexus" – a way to connect health care practice and education by creating a true partnership and shared responsibility to seamlessly enhance patient care, improve population health and lower costs.

With support from the Josiah Macy Jr. Foundation, the team from KU Medical Center and the National Center worked with other interprofessional experts to develop, test, measure and refine each activity with the Nexus in mind.

FOUR KANSAS COMMUNITY COLLEGES JOIN KU IN INNOVATIVE NURSING EDUCATION PROGRAM

Nursing students across Kansas will now be able to complete a Bachelor of Science in Nursing (BSN) without leaving their home communities. Four Kansas community colleges are joining with the KU School of Nursing in a groundbreaking nursing education model that allows students to simultaneously earn their Associate's Degree in Nursing (ADN) and BSN. Accreditation approval was received in 2016 for Butler, Hutchinson, Johnson County and Neosho County Community Colleges, which join Kansas City Kansas Community College as participants in this unique program known as the KU Community College Nursing Partnership program. As part of the program, students from community colleges with accredited nursing programs to simultaneously earn their ADN from the local school where they are attending classes and their Bachelor of Science in Nursing from KU via online coursework. The program was created in response to the need for more nurses with baccalaureate degrees in nursing.

FROM ALL AMERICAN TO HEALER

KU BASKETBALL LEGEND TYREL REED IS NOW HELPING OTHER ATHLETES RECOVER FROM INJURIES

“ ”

It was an extremely hard decision to give up playing the game I loved so much, and basically, all I had known my whole life.

“ ”

I got into this field to help people and see them get back to doing things in their lives that may have been too painful to complete.

TYREL REED

WHETHER IT'S AGE OR INJURY OR SIMPLY BEING OVERRUN BY THE RESPONSIBILITIES OF DAILY LIFE, EVERY ATHLETE FACES A DAY WHEN THE GAME THEY GREW UP LOVING SIMPLY DOESN'T NEED THEM ANYMORE.

For Tyrel Reed, that day came after one of the most storied basketball careers of any school boy in the history of Kansas. A star athlete who played high school basketball for his father in Burlington, Kansas, Reed went on to play guard at the University of Kansas, where he was part of the 2008 national championship team. Reed is the winningest player in Jayhawk basketball history, with a combined record of 132-17 in his four seasons.

Reed graduated from KU in 2011 with a degree in exercise science and signed with VOO Verviers-Pepinster of the Ethias League in Belgium. But after just a few months of playing pro ball in Europe, recurring injuries led Reed to face the reality that he needed to move on to the next chapter in his life.

“Playing basketball professionally overseas was a great experience that I wouldn't give up for the world,” said Tyrel, who had already been accepted into the doctor of physical therapy (DPT) program at KU Medical Center. “While playing in Belgium, I had ongoing foot and ankle problems that made me start thinking about moving away from basketball and coming back to school.

“It was an extremely hard decision to give up playing the game I loved so much, and basically, all I had known my whole life,” he continued. “I'm happy with my choice but still miss basketball dearly.”

BACK TO THE BOOKS

So Reed returned to the United States and enrolled in the doctor of physical therapy program in the Department of Physical Therapy and Rehabilitation Science at KU Medical Center. Reed's wife, Jessica, who he

met while attending KU, also started classes at KU Medical Center to become an occupational therapist.

One person who admired the choice Reed made to return to school was his former KU basketball coach, Bill Self.

"We are so proud of Tyrel and excited about his future," Self said. "He and Jessica have set up a solid foundation to absolutely have a fabulous life together."

Because of his time as a Jayhawk, Tyrel was quite a recognizable figure around the KU Medical Center campus, whether it was on a basketball court, in the hallways or when he showed up to provide physical therapy for a client during his clinical practicum. At this point in his life, Reed had decided he would rather be known as a skilled physical therapist than a former big-time college basketball player.

Reed said some people were kind of shocked when they realized that he was going to be their physical therapist.

"I got a lot of different reactions when I was at KU Medical Center," he said. "It's not like I walked around wearing a KU basketball jersey, but some people did recognize me. But pretty soon I was known as the physical therapist who understood them better than some has-been basketball player."

"As far as we were concerned, Tyrel was just another one of our exceptional physical therapy students," said Lisa Stehno-Bittel, Ph.D., the former chair of the Department of Physical Therapy and Rehabilitation Science. "In fact, amazing and inspiring stories could have been written about any one of our students. The difference is that the KU fans recognized Tyrel everywhere he went. Tyrel, on the other hand, tried to avoid attention and wanted to be evaluated by his faculty like any other student starting on the first day of classes."

Reed said having been injured as an athlete gave him a certain empathy for his clients that others may not possess. He knows what it's like not being able to do the activities that he loves. Countless hours spent in the training room help him relate to what his patients are going through during their recoveries. "Being injured is no fun, but I want patients to be as positive as they can, and then I want to push them like I was being pushed to get back to being healthy and back to normal activity," he said.

LIFE AS A PHYSICAL THERAPIST

Since graduating in May 2015 from KU Medical Center, Tyrel and Jessica have settled into their new lives in jobs they love in Lawrence, Kansas.

Tyrel is employed by OrthoKansas, an orthopedic clinic where he works alongside six to eight surgeons with different specialties. Jessica, meanwhile, is an occupational therapist in the inpatient acute care and transitional care units at Lawrence Memorial Hospital.

"It's very rewarding," Reed said. "I got into this field to help people and see them get back to doing things in their lives that may have been too painful to complete, or, because of an injury, it was completely taken away from them."

Reed said the instructors at KU Medical Center did a good job blending hands-on patient care and clinical experiences with a solid academic foundation in musculoskeletal principles. He credits this training paired with his undergraduate education in Lawrence as helping to ease the learning curve all new physical therapists experience when transitioning from the university environment to professional, real-life scenarios.

"My physical therapy education at KU was exceptional," Reed said. "It prepared me well for my career as a physical therapist."

At OrthoKansas, Reed sees a wide variety of patients, including a lot of post-surgical cases. He works four 10-hour days each week, flexing his schedule to help meet the needs of the clinic.

While Tyrel is driven to be a great physical therapist, he has learned a lot about patient care from being married to an occupational therapist. He admits that physical therapists can often be tough on patients when they push them to make improvements. Reed said hearing Jessica talk about the various philosophies of occupational therapy make him think more deeply about what is best for his patients.

"I feel like occupational therapists are just a little more patient," he said.

Jessica Reed agreed.

"You know, I have to go with OT on this one," Jessica said. "I love that at the core of it all, occupational therapy helps people accomplish the daily activities that can often be taken for granted. I do love to see OT and PT working side by side to bring a better quality of life to patients. Both are valuable to a person's well-being and health."

ALWAYS A JAYHAWK

Although his competitive basketball playing days are behind him – he sneaks in a charity game now and then – Reed would still like to be involved in athletics, whether it's at KU or elsewhere. But Reed is quick to note, he does hold a soft spot in his heart the Jayhawks.

"I love the University of Kansas and would love the chance to help on the therapy side of things," he said. "It feels like home."

While you can take the boy out of basketball, you can't take basketball out of the boy. Reed still bleeds crimson and blue and probably always will.

Last year, Reed got a phone call from his former mentor and coach. Bill Self wanted to know if Tyrel would introduce him during the 60 years of Jayhawk Basketball event at Allen Fieldhouse – a gathering of the KU faithful that featured the four living KU basketball coaches.

Reed said it was an honor to be asked. Physical therapy might be his life now, but when Bill Self and the Jayhawks call, it's hard to turn your back on tradition. •••

TEN QUESTIONS WITH MICHAEL ARTMAN

In January 2014, Michael Artman, M.D., pediatrician-in-chief and chair of the Department of Pediatrics at Children's Mercy Hospital and Clinics in Kansas City and chair of the Department of Pediatrics at the University of Missouri-Kansas City School of Medicine, was named chair of the Department of Pediatrics at the KU School of Medicine. Artman's appointment as head of pediatrics at the School of Medicine was one of the final steps in developing a single, integrated pediatric program between Children's Mercy and KU. Artman recently sat down and chatted with us about managing his many roles and his vision for the integrated pediatrics program.

⟵ **Q** Why were you drawn to pediatrics?

A ⟶ I like to say I didn't choose pediatrics…it chose me. When I was in medical school, I had every intention of being an adult cardiologist. But when I was doing my pediatric rotation, I held a newborn baby with heart issues and something just clicked. I knew at that moment I was going to be a pediatric cardiologist.

⟵ **Q** Why do you think it was smart to integrate the pediatric programs at the KU School of Medicine and Children's Mercy?

A ⟶ First, I think it was a great opportunity to improve the health and well-being of children in our region. I think by combining the two programs, we can provide higher quality care, avoid duplication and help reduce costs. I also believe it will help advance research and improve the pediatric education for our medical students.

⟵ **Q** What were the big hurdles in merging the two programs?

A ⟶ The programs are in two states that have different rules and regulations, so that was a challenge. Also, KU Medical Center's primary hospital partner, The University of Kansas Hospital, and Children's Mercy Hospital are competitors in a sense, so there were a lot of business arrangements that had to be ironed out.

⟵ **Q** You mentioned advancing pediatric research. What areas do you think KU and Children's Mercy researchers are particularly excited about?

A ⟶ Children's Mercy has a great pediatric oncology research program and I know our scientists are thrilled to be collaborating with The University of Kansas Cancer Center and IAMI (the Institute for Advancing Medical Innovation) on pediatric cancer research.

⟵ **Q** With the integration, Children's Mercy Hospital is now the primary pediatric teaching hospital for KU School of Medicine students. What has that meant for Children's Mercy?

A ⟶ Some KU School of Medicine students had already been taking their pediatrics clinical rotations at Children's Mercy South Hospital. But as we've expanded the program, we're working to make sure all students have a first-rate pediatrics educational experience at Children's.

⟵ **Q** Now that you're at the helm of the pediatrics departments at three different institutions, do you ever forget which role you're in at a particular time?

A ⟶ Fortunately, I have an outstanding assistant who makes sure I'm in the right place at the right time! But I'm really trying to be present and visible at all my jobs as much as possible.

⟵ **Q** Do you still have time to see patients?

A ⟶ Not as much as I would like. I love being a physician and want to keep that up as long as possible. I think if I'm not practicing good medicine, it makes me less effective in my administrative roles.

⟵ **Q** What are some of the major changes in pediatric care that have occurred during your time as a doctor?

A ⟶ The advances in our ability to diagnose and treat pediatric illnesses have been astonishing. When you consider that 50 years ago, the survival rate for many childhood cancers was 1 percent and now it's 90 percent, that's pretty amazing.

⟵ **Q** What is the top issue facing pediatric care right now?

A ⟶ I think helping teens with chronic illnesses such as diabetes and cardiac conditions transition to adult care. Finding adult primary and specialty care providers for youth with chronic conditions has been a challenge for many pediatric specialists, and we're working on developing medical homes for adolescents to make that transition easier.

⟵ **Q** What do you do in your spare time?

A ⟶ I'm married and our children are all grown, so we have a lot of quiet time, which has been nice. I like to read and spend time reading a lot of work-related materials, as well as magazines like The New Yorker. In addition, I try to keep physically active and work out at the gym. •••

SHATTERING

THE

GLASS

CEILING

WOMEN ARE STILL STRUGGLING TO REACH TOP LEADERSHIP POSITIONS IN ACADEMIC MEDICINE

SUSAN PINGLETON, M.D., remembers the first time she was aware there might be a gender gap in the field of medicine. It was 1968 and her first day of medical school at the University of Kansas. As she gathered with her fellow students, she realized that out of a class of 140, there were only 5 or 6 women.

"I guess I was a little shocked that after all the strides women had made in the work force, there were still so few women in my medical school class," Pingleton said.

Flash forward almost fifty years: In 2016, the incoming class at the KU School of Medicine was nearly 50 percent female. More and more women are entering the field of medicine and are going into academic medicine, where they can work as clinicians, researchers and teachers.

But Pingleton, who currently serves as the associate dean for continuing medical education at the KU School of Medicine, said despite the vast gains women have made in academic medicine, many are still having difficulty advancing to leadership positions.

"There has been a significant increase in the number of women entering academic medicine," Pingleton said. "But at the same time, women seem to be hitting a glass ceiling when it comes to promotion, tenure and advancing to top management positions."

THE GLASS CEILING IN MEDICINE | The term "glass ceiling" has gained traction as

ILLUSTRATION: Matthew Hollister

a metaphor for the widespread belief that, despite gains in the number of women entering fields traditionally dominated by men, subtle barriers remain that prevent women from moving up the leadership hierarchy.

Research does seem to indicate that the top echelon at U.S. academic medicine institutions is still heavily populated by men. A study released in 2015 in the Journal of the American Medical Association found that despite growing numbers of women doctors and researchers, men still hold the vast majority of leadership positions.

The study examined male and female promotions in medical schools, analyzing about 90,000 doctors' records. It found that, even when accounting for factors such as experience, age and research, men are 15 percent more likely to have the rank of full professor – the senior-most position on a tenure track – than are women.

The study concluded: "The potential of women in medicine and science, like those in many other professions, has not been fully realized. When compared with men, women in these fields are paid less, have higher rates of attrition, have fewer scientific publications, and are less likely to apply for NIH funding and to be principal investigators."

PINGLETON'S RESEARCH INTO GENDER DISPARITIES | Doing something about dearth of women in the top tiers of academic medicine has become a priority for Pingleton. In 2011, she wrote an impassioned editorial for the Association of American Medical Colleges on the glass ceiling in medicine. And in 2013, she launched an oral history research project to find out what drew women to a career in medicine and the obstacles they had encountered in their professional lives.

Pingleton interviewed nearly 30 women for her study entitled Silent Bias: Challenges, Obstacles and Strategies for Leadership Development in Academic Medicine-Lessons from Oral Histories of Women Professors at the University of Kansas. Most of the women who participated were full professors.

"I wanted the study to assess challenges and obstacles these women had encountered in their careers," Pingleton said. "But I also wanted to explore strategies to overcome bias and what can be done to develop leadership development programs for women in medicine."

Pingleton discovered that many of the women interviewed for the study had experienced significant challenges during their careers, including perceived gender bias.

"What we heard was that while women professors were outwardly treated well and with respect by colleagues, there was often an underlying tone that respondents characterized as reflecting bias against women," Pingelton said.

Pingleton said one phenomenon that many of the study participants said they had experienced was "othering," which is defined as a series of circumstances where a person is perceived by others as not being part of the group. The women in the study described multiple instances of being ignored in professional situations.

For example, one woman said she would make a suggestion in a meeting that would fall flat, but when a male colleague would make a similar suggestion, suddenly it was a great idea. Another woman recalled that her department chair would always look at the other male faculty members while discussing business and then, when the meeting was concluded, he would turn and look at her and ask how she was doing.

Pingleton said the barriers women face in academic medicine often depend on the specialty they enter. For example, according to a 2015 survey by the Association of American Medical Colleges, women made up 75 percent of pediatric residents and 85 percent of residents going into obstetrics/gynecology.

"In specialties that are dominated by women, there is a greater chance that they will be able to advance further, although they are still woefully underrepresented" Pingleton said. "But women have a much more

difficult path when they enter male-dominated medical fields."

Kim Templeton, M.D., a professor of orthopedic surgery at KU Medical Center, has received national attention for her work as an orthopedic surgeon. She is also the current president of the American Medical Women's Association, which is dedicated to advancing women in medicine and improving women's health. The association was founded 101 years ago because the American Medical Association refused to admit women as members at the time.

Templeton made her mark in a medical specialty that has long been dominated by men. In 2015, just 12 percent of residents going into orthopedic surgery were women. She was the first female resident ever in orthopedic surgery at Rush Presbyterian in Chicago.

"I think the scarcity of women entering my field is due in large part to a lack of female role models," Templeton said. "When you're a medical student, it's hard to see yourself in a specialty when there are very few women already there."

Templeton said in a specialty dominated by men, it is particularly difficult to climb the leadership ladder.

"I think sometimes there is an assumption by males in academic medicine that women just aren't interested in taking on leadership roles, but many of us are," Templeton said.

TACKLING THE BARRIERS | So what are the specific barriers preventing more women from advancing in academic medicine? A study published in 2015 in the Journal of Women's Health identified five primary issues that were preventing women from being promoted. Those issues include a perceived existence of the "old boys" network; a lack of parity in rank and leadership by gender; a lack of retention of women in academic medicine; a lack of gender equity in compensation; and a disproportionate burden of family responsibilities and work-life balance on women's career progression.

"It's important to realize that there isn't any single issue holding women in academic medicine back," said Pingleton. "Many things need to be fixed to create an environment in academic medicine where women can fully succeed professionally."

But Pingleton and Templeton agree that there are some tangible changes that can be made now that will help improve the culture for women in academic medicine, including providing more child care options for women and by arranging for more mentoring opportunities for women in medicine.

"Women in academic medicine struggle with work-life balance, just as most working women do," Pingleton said. "And while women in our field don't grapple as much with the cost of child care, they often encounter institutional policies affecting work-life balance, such as meetings held after hours, out-of-town conferences and a lack of on-site child care."

While the University of Kansas Medical Center does not currently have on-site child care, the executive vice chancellor's office recently surveyed faculty and staff on their views and experiences about child care. Those survey results are being analyzed to determine the interest and feasibility of opening a child care center on campus.

THE IMPORTANCE OF MENTORING | Another challenge for many women in academic medicine is the lack of mentors.

"Senior mentors and role models can definitely have a positive influence on the career advancement of junior professionals in medicine," Templeton said. "The challenge is that there aren't as many veteran women in academic medicine to serve as mentors to women entering the field."

Helping to develop mentoring relationships is part of the mission of the KU Medical Center Women in Medicine and Science (WIMS) organization. The program was organized within the School of Medicine in 1999 to provide women with more tools to succeed in academic medicine. In 2010, the organization formally expanded to include women in the KU School of Nursing and KU School of Health Professions.

Thanks in large part to the encouragement of KU School of Medicine executive dean Robert Simari, M.D., KU is also active in Executive Leadership in Academic Medicine (ELAM), a program run by Drexel University that offers leadership training fellowships with extensive coaching, networking and mentoring opportunities aimed at expanding the national pool of qualified women candidates for leadership in academic medicine and public health.

"Academic medicine is a very competitive enterprise," Simari said. "If you don't provide an environment that encourages women faculty to flourish, then you will suffer as an institution."

Senior women faculty at the associate or full professor level can be nominated for one of the approximately 50 ELAM fellowships offered every year. Although the process is very competitive, several women faculty from the KU School of Medicine have been awarded ELAM fellowships.

Tracie Collins, M.D., MPH, chair of the Department of Preventive Medicine and Public Health at the KU School of Medicine–Wichita, was awarded an ELAM fellowship in 2014. Collins said the year-long fellowship involved meeting with other women in medicine who have reached leadership positions and attending symposiums where she received valuable advice on developing an elevator speech about her career aspirations, managing institutional finances, and the most effective way to apply for promotions.

"The fellowship gave me the opportunity to network with other women in leadership positions and get their perspective on how to advance my career to a higher level," Collins said. "It really provided us with a safe place where we could talk frankly about many of the issues and obstacles we have encountered in our profession."

Pingleton said mentoring opportunities like those offered by WIMS and ELAM go a long way helping women advance in academic medicine. And although work still needs to be done, she believes it is possible to shatter the glass ceiling to create an environment where more women fully succeed in their careers.

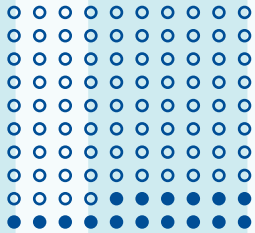
"Our vision for women in medicine should utilize tools like mentoring, career development and advocacy to build a culture where the sky is the limit for everyone, regardless of gender." ♀

WHY IS IT SO DIFFICULT TO RECRUIT PATIENTS FOR CLINICAL TRIALS?

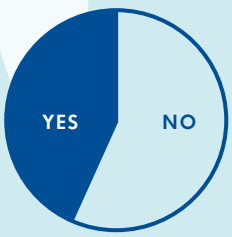
As researchers across the country and at the University of Kansas Medical Center try to speed up the pace of discovery, one frequent holdup can be enrolling patients in clinical trials. Some new studies that assess whether a potential new medicine is safe for patients may take years to enroll all the participants it needs. KU Medical Center has built a website, PioneersResearch.org, that serves as a place where interested members of the public can agree to advance research by filling out some basic health information and consenting to be contacted about studies for which they may be a good fit. Data shows that once a patient overcomes some initial hurdles, they are far more likely to participate in trials in the future.

Information compiled by Clinical Trial Awareness, Attitudes, and Participation Among Patients with Cancer and Oncologists (Oncology Practice 2006) and Report on Patient Study Experiences (CISCRP 2013)

MANY PATIENTS ARE NOT AWARE THAT CLINICAL TRIALS ARE AN OPTION:



Only 16 percent of cancer patients were aware of relevant clinical trials at the time they were considering patient options.

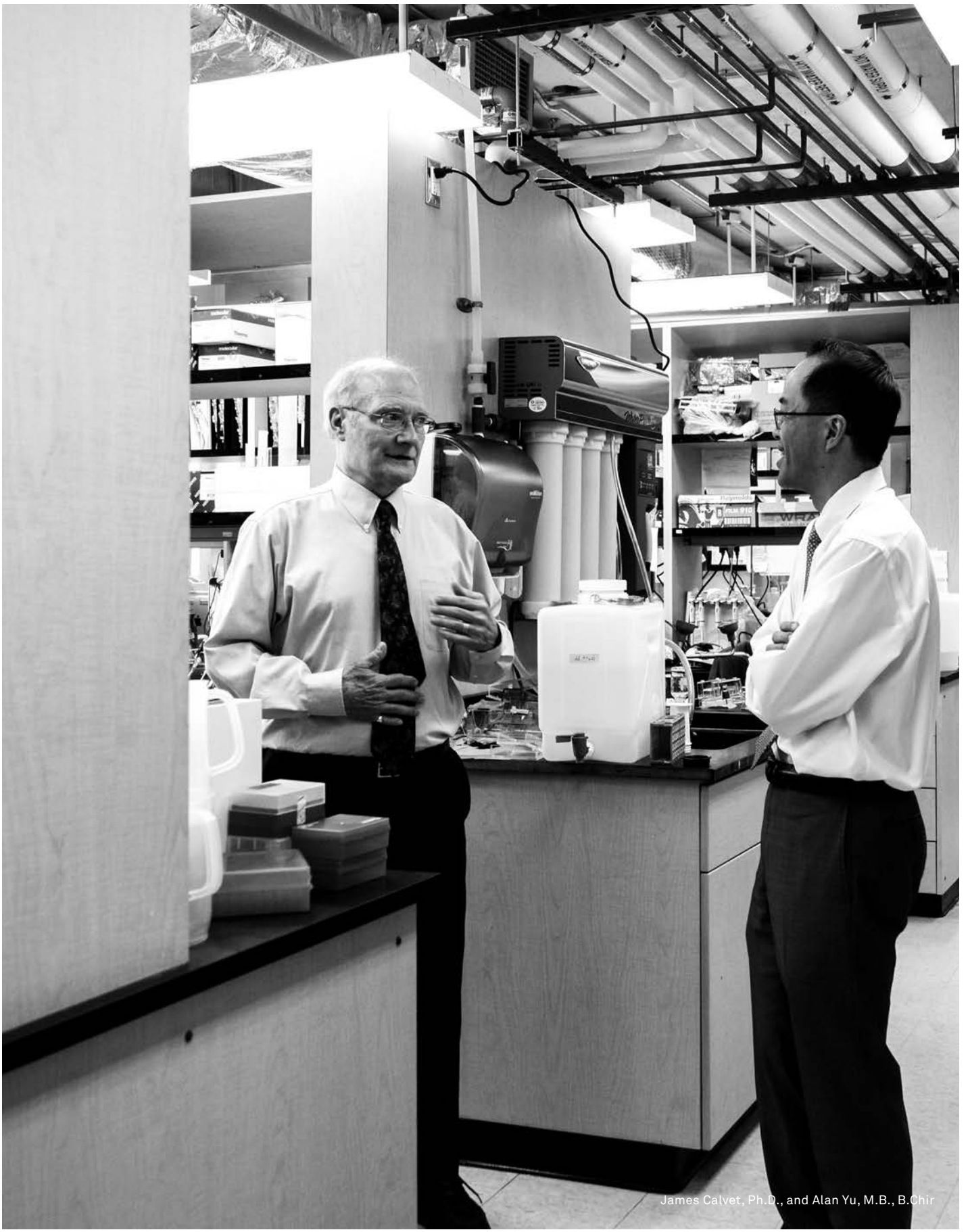


Of those cancer patients aware of clinical trials: 43 percent enroll and participate, and 57 percent do not participate.

PATIENT-REPORTED BARRIERS TO ENROLLING IN A TRIAL INCLUDE:

IN A SURVEY OF STUDY VOLUNTEERS:

95% would consider participating in another research study.



James Calvet, Ph.D., and Alan Yu, M.B., B.Chir

THE SEARCH FOR A PKD CURE

KU Medical Center has been a world leader in the fight against polycystic kidney disease.

THE SEARCH FOR THERAPIES for polycystic kidney disease (PKD) has been a driving mission at the University of Kansas Medical Center.

That pursuit got a welcome boost in October 2015 when the National Institute of Diabetes and Digestive and Kidney Diseases awarded a five-year, $5.4 million Core Center Grant (P30) to James Calvet, Ph.D., a professor in the Department of Biochemistry and Molecular Biology, and his colleagues at the Kidney Institute. The KU core center was one of only four centers nationally to receive this round of PKD research funding from the National Institutes of Health (NIH).

"Getting the NIH Center grant was huge," said Alan Yu, M.B., B. Chir., director of KU's Kidney Institute and director of the Division of Nephrology. "It is helping to further advance the already sterling reputation of KU Medical Center as one of the top research medical centers in the country. And I think the award is cementing kidney diseases as one of our most highly prized research programs on campus, alongside cancer, neuroscience, liver disease, and reproductive biology."

P30 grants promote collaborative work across a group of cores focused on a common goal or problem – in this case, PKD research and therapies. Unlike previous NIH grants KU has received that were more single-project-specific, the P30

emphasizes a center's ability to share resources, expertise and facilities across its cores as multidisciplinary teams of scientists work on a complex biomedical problem.

"It's been a tremendous help," Calvet said of the grant. "It really provided a shot in the arm in terms of giving us an opportunity to further develop our PKD expertise."

KU's center – the Polycystic Kidney Disease Research and Translational Core Center – is made up of four research cores that will work together to target PKD research and therapies. The cores are led by: Christopher Ward, Ph.D., Gene Targeting Core; Xiaogang Li, Ph.D., and Ken Peterson, Ph.D., Epigenetics Core; Darren Wallace, Ph.D., Biomarkers Core; and Alan Yu, Clinical Research Core.

THE ABC'S OF PKD

PKD is typically a slow-progressing disease that is normally inherited within families. In PKD, clusters of noncancerous cysts develop primarily within the kidneys. The cysts, which contain a water-like fluid, can grow large enough and in such number they can cause kidney failure. An estimated 2,000 to 3,000 people in Kansas are among the roughly 600,000 nationwide with PKD – one of the most common life-threatening genetic diseases.

The cysts can start growing even before birth, but for many, PKD progresses so slowly it causes few ill effects until later in life. Roughly 50 percent of people with the disease will reach end-stage kidney failure by their early 60s. The other 50 percent often have a milder form of PKD, and they die from other causes before their kidneys fail.

While much is known about PKD, how it progresses remains a mystery. Even within families, the disease can grow at different rates. Because the disease is slow growing, much of the research is focused on keeping the cysts from enlarging too much in size and number rather than eliminating the disease altogether.

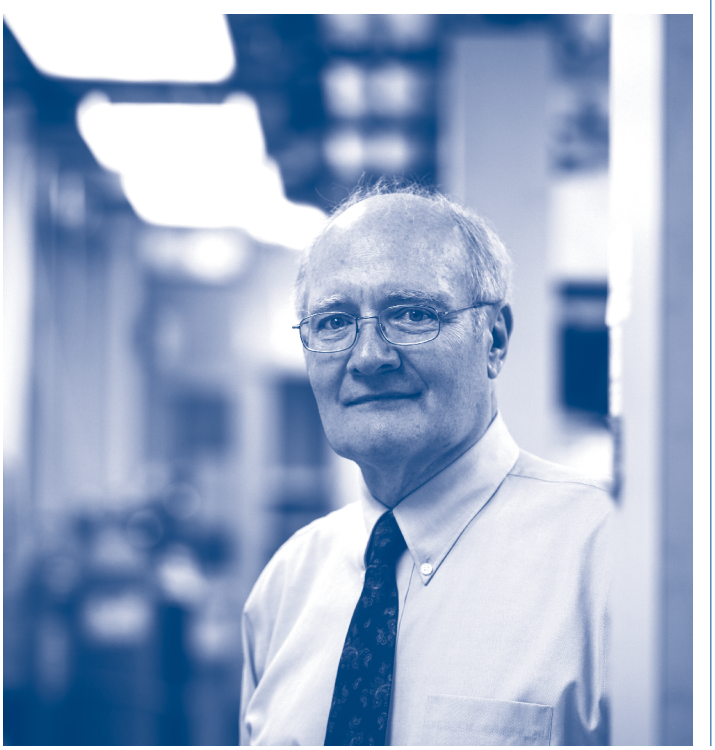
"We know that many people who have the disease will survive. All we have to do is come up with therapies to transition that rapidly progressing population into the slowly progressing population," Calvet said. "You don't have to eradicate it, like cancer, just slow it down."

Calvet said the current focus of PKD research at KU is the proliferation cyst cells and the uncontrolled fluid secretion into the cysts. The idea is to slow the increase in the number of the cysts or their size, and the disease can be managed. KU research led to the development of a promising drug, tolvaptan, which is still awaiting FDA approval.

Tolvaptan binds to an external receptor on kidney cells to block a hormone from binding to the cell and triggering cyclic AMP production. So that diminishes the activity driving both cell proliferation and fluid secretion. Cyclic AMP is described as an Achilles' heel for PKD, and tolvaptan works on a receptor found specifically in the kidney.

"WE KNOW THAT MOST PEOPLE WHO HAVE PKD WILL SURVIVE. YOU DON'T HAVE TO ERADICATE IT... JUST SLOW IT DOWN."

James Calvet, Ph.D.



"It's not a silver bullet," Calvet said. "It slows down the rate of kidney increase, but it could be better."

The NIH funding will also allow researchers to explore other options such as using cancer drugs to treat PKD, or cancer drugs used in combination with tolvaptan and other therapies. Ultimately, the goal is for the cores to form a synergy that benefits everyone involved in the center.

A RICH HISTORY

KU's kidney research dates back to the 1960s. The institution's reputation came into its own in 1970 when the late Jared Grantham, M.D., was appointed the director of the Division of Nephrology.

Alan Yu, M.B., B.Chir

"KU MEDICAL CENTER IS ARGUABLY THE BIRTHPLACE OF MODERN PKD RESEARCH AND HAS BEEN WIDELY RECOGNIZED FOR MAJOR CONTRIBUTIONS TO THE FIELD OVER THE PAST 35 YEARS."

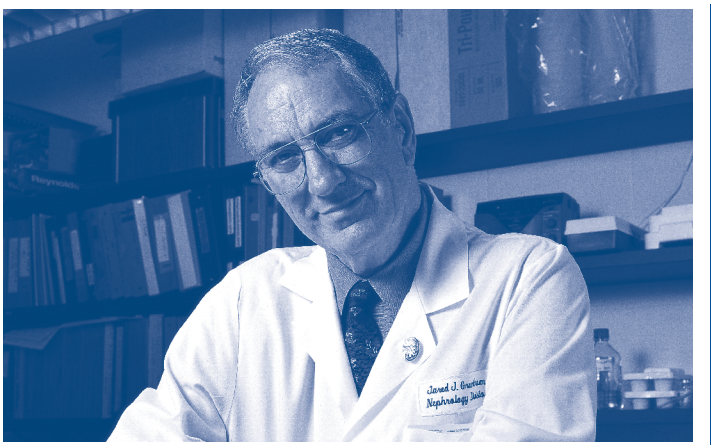
"KU Medical Center is arguably the birthplace of modern PKD research and has been widely recognized for major contributions to the field over the past 35 years under the strong leadership of Dr. Grantham, Dr. Calvet and others on this campus," Yu said.

Grantham, who passed away in January 2017, was a primary draw for attracting promising young PKD scientists to Kansas City. Grantham's passion for finding better treatments for his patients and to promote kidney research was contagious.

"There was no better place to do training," said Darren Wallace, Ph.D., an associate professor of nephrology and hypertension at KU Medical Center, and one of many researchers Grantham recruited to collaborate on PKD treatment and research.

In the early 1970s, Grantham discovered that the renal tubules of kidneys secreted as well as reabsorbed solutes and water. This finding formed the basis of a series of experiments demonstrating that in patients with polycystic kidney disease, cysts were in fact distended renal tubules that secreted fluid into an expanding cavity.

In 1982, Grantham teamed with Joseph Bruening to create the Polycystic Kidney Research Foundation (now called the PKD Foundation), headquartered in Kansas City, Missouri. The PKD Foundation has been responsible for directly funding more than $40 million in national and international grants and in influencing federal support for PKD research to the extent of an additional $35 million per year.



Jared Grantham, M.D.

From that strong beginning, KU's reputation in the field of PKD research and treatment has continued to thrive. Through recruitment and rebuilding from within, a team of both veteran and younger researchers are working together at KU Medical Center to solve the mysteries of PKD.

In 2011, Yu was hired as the director of the internationally recognized Kidney Institute and director of the Division of Nephrology. Later that summer, Pamela Tran, Ph.D., an instructor in medicine at Harvard University who specializes in kidney development, and Reena Rao, Ph.D., an assistant professor of medicine at Vanderbilt University, came on board. In 2012, Xiaogang Li came to KU from the Medical College of Wisconsin, and in 2015, Chris Ward came to KU from the Mayo Clinic.

Meanwhile, researchers among those who helped KU initially create its worldwide reputation continued to build on their accomplishments. By combining new faces with proven performers, the KU team was ready when the time came to apply again.

"We anticipated this competition would be coming, so we prepared ourselves over the long term by building the PKD group and thinking ahead," Calvet said. "We were able to do well enough to get into that top four."

Being selected as one of the four core centers brings with it a new level of prestige that will benefit the group's mission. The grant raises KU Medical Center's stock nationally and internationally as a top tier PKD research center, which in turn helps with recruiting and retaining top scientists.

"The award and designation as a core center have served to further ignite our enthusiasm and drive to find a cure and innovative new treatments for PKD," Yu said. ■

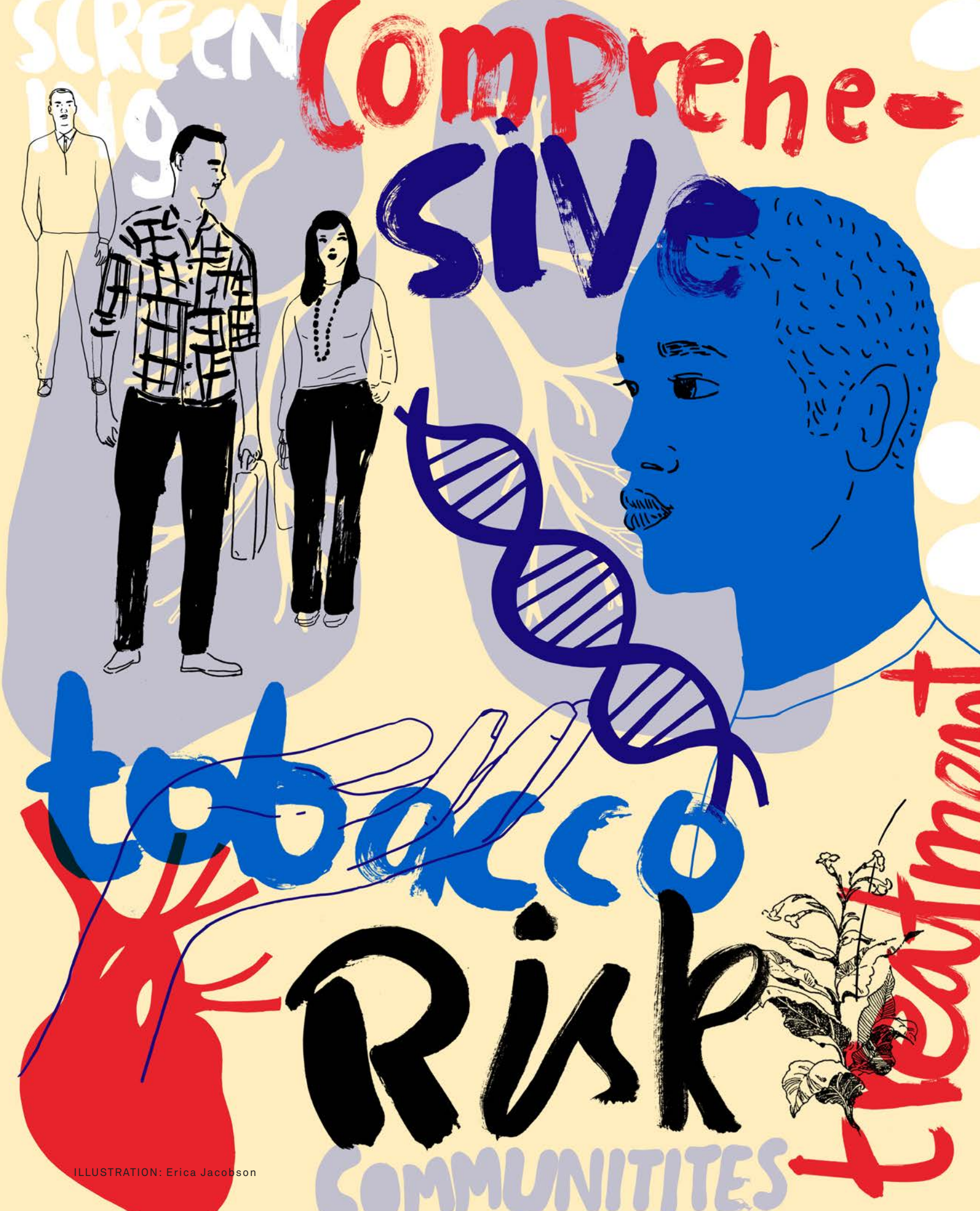


ILLUSTRATION: Erica Jacobson

CLOSING THE TOBACCO USE DISPARITY GAP

TOBACCO USE remains the top cause of preventable illness and death in the United States. However, tobacco is not an equal opportunity killer. Tobacco use disproportionately affects low-income and racial minority populations, and those groups often have a much more difficult time kicking the habit. Over the past decade, KU Medical Center has developed a national reputation for developing research-based programs to help minority populations quit smoking.

Two years ago, Won Choi, Ph.D., a professor of preventive medicine and public health, and his colleagues were awarded a $2.7 million, five-year NCI grant to create an Internet-based program to help American Indian tribal college students stop smoking.

Choi's project builds on a long history of successful research efforts in Native communities. In 2010, the medical center was awarded a $7.5 million National Institutes of Health grant to launch the Center for American Indian Community Health to address the enormous health disparities common among American Indians.

"American Indians suffer from the greatest health disparities," Choi noted. "You name the disease, they have the worst prevalence compared to other racial or ethnic groups. They have the highest rates of obesity and diabetes, and the highest rates of smoking, which is my particular area of interest."

KU researchers in the Center for American Indian Community Health enjoy a strong relationship with the tribes in Kansas as well as Haskell Indian Nations University, whose students represent more than 250 tribes throughout the country. Initially, Choi said, collaborations with Haskell led to All Nations Breath of Life, a culturally tailored program designed to help American Indians stop smoking while respecting their traditions involving tobacco — a program that's showing remarkable success.

"Our intent was to develop a program for adult to middle-aged and older American Indian smokers not just from our region but throughout the country," Choi says. The work at Haskell led to other projects to gather information on tribal college students' health behaviors, such as fruit, vegetable and alcohol consumption and tobacco use. With the NCI funding, Choi said, they will begin developing the culturally tailored smoking-cessation program specifically for tribal college students and their online environments.

"We start out with fine-tuning the intervention, conducting focus groups and qualitative studies and integrate ideas recommended by the potential participants," he said.

Also in the area of smoking cessation, a research team led by Nikki Nollen, Ph.D., associate professor of preventive medicine and public health, is targeting another minority population. The team was awarded a $2 million funding award in 2014 by the Patient-Centered Outcomes Research Institute (PCORI) to address tobacco use among African Americans who do not smoke on a daily basis.

One out of four African Americans is a non-daily smoker. Research has shown that African Americans have higher rates of disease and death at lower levels of smoking than other groups.

Nollen said that African American non-daily smokers have "surprisingly high" levels of nicotine and cancer-causing agents in their bodies, making them a priority group for study.

"The program will be the first to examine treatment options for non-daily smokers and could directly contribute to the first evidence-based guidelines for treating the 9.7 million U.S. adult non-daily smokers for whom no guidelines currently exist," Nollen said.

Edward Ellerbeck, M.D., co-leader of the Cancer Control and Population Health Program at The University of Kansas Cancer Center and chair of the Department of Preventive Medicine at KU Medical Center, said over the past decade, the NIH has prioritized efforts to reduce health disparities among minority populations.

"I think all of us, including the NIH, have come to the conclusion that one kind of treatment isn't effective for every population group," Ellerbeck said. "That is why we are providing a community-based component that reaches out to populations at risk and helps them deal with issues related to cancer prevention, cancer control, and early detection and screening." •••

JEAN GIDDENS

PROFESSOR & DEAN,
VIRGINIA COMMONWEALTH
UNIVERSITY SCHOOL
OF NURSING


Jean Giddens

Jean Giddens, a 1981 graduate of the University of Kansas School of Nursing, has forged a stellar career as a nurse and a nurse educator. She is a nationally-recognized leader in using innovative technology and conceptual approaches for nursing education.

Giddens grew up in Westwood, Kansas, the daughter of a surgeon and a nurse, both of whom worked at The University of Kansas Hospital. A star athlete at the University of Kansas, Giddens thought she might pursue a career in sports or interior design. But after graduating from KU, she enrolled at the KU School of Nursing and has never looked back.

"The KU School of Nursing was an excellent place to learn to be a nurse. The education I received gave me a great foundation for my career," Giddens said.

Giddens first professional job was as an emergency room nurse, but she was soon drawn to teaching. She went on to work as a nurse educator at the University of New Mexico, the University of Texas in El Paso and Mesa State College in Grand Junction, Colorado, before returning to the University of New Mexico in 2002, earning her MSN and doctorate along the way.

"I didn't really have a career plan or a solid idea of where I thought I would end up," Giddens said. "I just took advantage of the opportunities that came my way."

Giddens rose through the ranks at the University of New Mexico, eventually becoming executive dean at the university's school of nursing. While there, she created an online learning platform called The Neighborhood, which allows students to easily connect the concepts they learn to the clinical setting. The platform is used by nursing schools across the country.

Among Giddens' many admirers is Nelda Godfrey, Ph.D., ACNS-BC, FAAN, associate dean for innovative partnerships and practice at the KU School of Nursing. Godfrey praised Giddens work on the New Mexico Nursing Education Collaborative and her leadership in helping nursing faculty determine common course objectives, requirements and prerequisites for pre-licensure nursing.

"Jean is an outstanding colleague, with a strong sense of the need for caring and quality care for patients and their families," Godfrey said. "She leads the discipline of nursing in so many ways, through her publications, editorials, presentations and mentoring of others."

In 2013, Giddens moved 1,800 miles to become the dean of Virginia Commonwealth University's School of Nursing. As she has everywhere she has served, Giddens remains committed to the idea of life-long learning for nurses.

"I know I will always have a passion for helping nurses advance in their careers and being an integral part of successful health care teams," said Giddens.

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