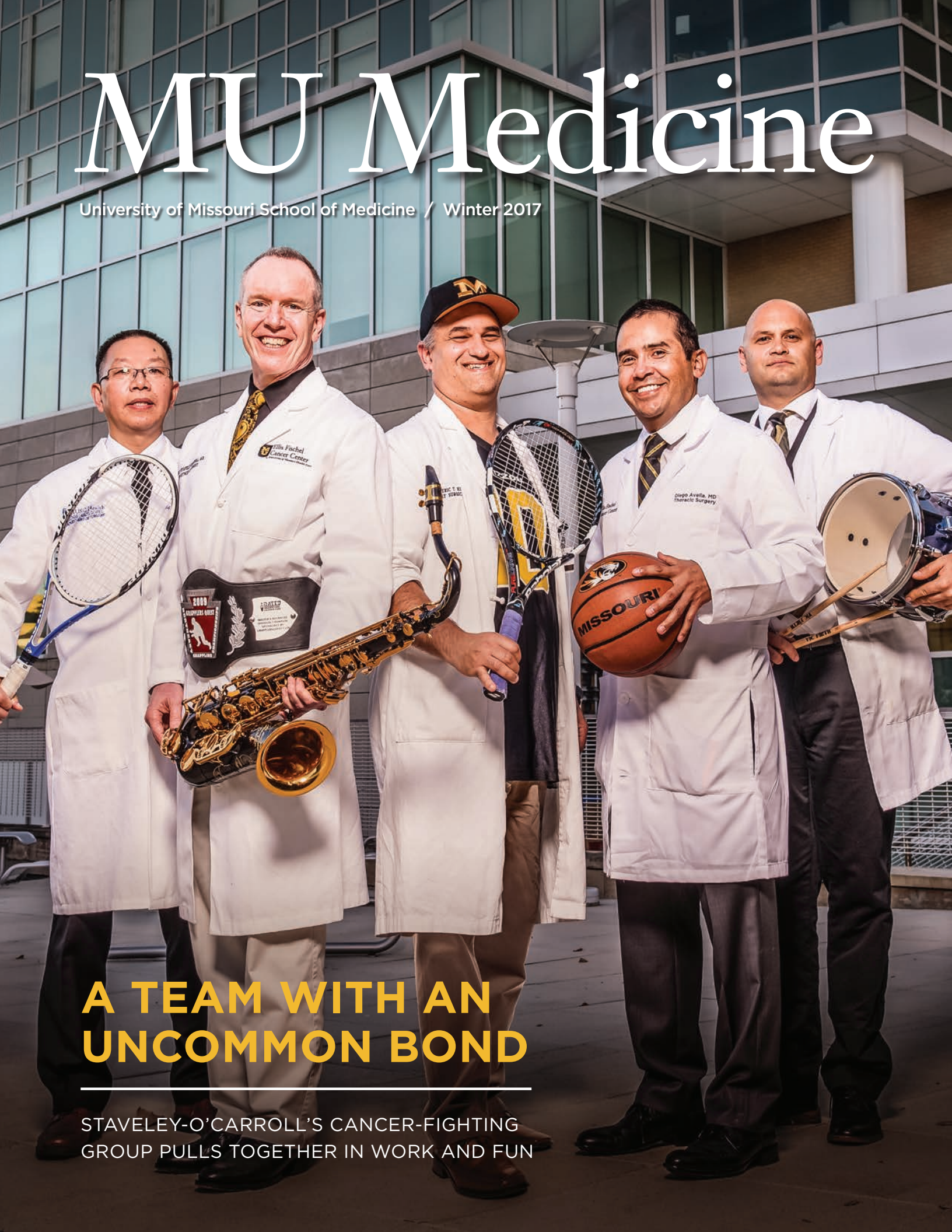
MU Medicine

University of Missouri School of Medicine / Winter 2017



A TEAM WITH AN UNCOMMON BOND

STAVELEY-O'CARROLL'S CANCER-FIGHTING GROUP PULLS TOGETHER IN WORK AND FUN

LETTER FROM THE DEAN

The theme of this issue of *MU Medicine* is collaboration and innovation. We are highlighting research at the University of Missouri that is truly a team effort.

For more than 25 years, my passion has been researching ways to reduce the arterial blockages that lead to heart attacks. In studies my team and I have conducted, we've found a peptide that appears to reduce blockages. With the help of a National Institutes of Health (NIH) R01 grant, and in collaboration with Doug Bowles, PhD, of the College of Veterinary Medicine, we are taking the next step before testing on humans. One of the things I find wonderful about Mizzou is the School of Medicine's ability to work with other schools in research. You can read about this collaboration on Page 4.

Dongsheng Duan, PhD, has devoted his energy to pursuing a cure for Duchenne muscular dystrophy. After he and his team successfully treated dogs with the disease in 2015, the gene-therapy treatment will now be tested on humans in clinical trials. Learn more about this breakthrough on Page 5.

Our cover story highlights Kevin Staveley-O'Carroll, MD, PhD, and his band of surgeons and scientists who work together and play together. These researchers are at the forefront of cancer research, particularly in the use of immunology to treat liver cancer. The recent NIH award of another R01 grant for Staveley-O'Carroll's team is proof they are a great example of physician-scientists whose strengths complement each other. Read about the team beginning on Page 12.

During the previous federal fiscal year, the School of Medicine increased NIH-funded research by 18 percent, and we're on track for continued increase this year. We have the ability to not only recruit top-level researchers but also develop our own promising junior investigators.

Finally, we are proud of our efforts to make the School of Medicine more diverse. Nine percent of this year's 128-person class of first-year medical students identify as underrepresented minorities, and 32 percent are self-identified ethnic minorities.

To learn more about what is happening at the School of Medicine, visit our website, **medicine.missouri.edu**, and monitor our Facebook page and Twitter feed.

Patrick Delafontaine, MD
Hugh E. and Sarah D. Stephenson Dean
Professor of Medicine and Medical Pharmacology and Physiology
University of Missouri School of Medicine

MU Medicine

MISSION STATEMENT
MU Medicine is published twice yearly to share updates that highlight the accomplishments of the MU School of Medicine's community of researchers, clinicians, students and alumni.

EDITOR
Joe Walljasper

DESIGNER
Ann Ellebracht

PHOTOGRAPHER
Justin Kelley

WRITERS
Jesslyn Chew, Laura Gerding and Joe Walljasper

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ON THE COVER:
From left, Guangfu Li, PhD; Kevin Staveley-O'Carroll, MD, PhD; Eric Kimchi, MD; Diego Avella, MD; and Jusuf Kaifi, MD, PhD, are research partners and close friends. They are conducting groundbreaking work on immunotherapy solutions for liver cancer.

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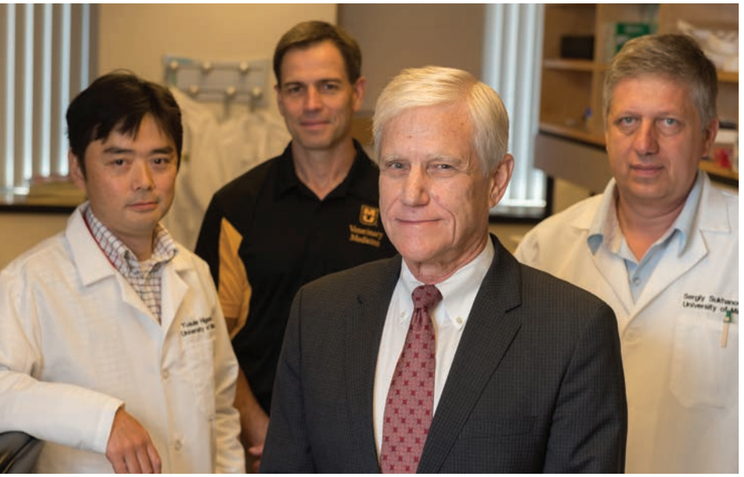
Exploring all avenues for heart health

Collaboration across campus could unclog arteries



▲ From left, Yusuke Higashi, PhD; Doug Bowles, PhD; Patrick Delafontaine, MD; and Sergiy Sukhanov, PhD, are researching the effectiveness of Insulin Growth Factor-1 in reducing plaque in arteries.

College Avenue separates Patrick Delafontaine, MD, and Doug Bowles, PhD, but a mutual interest in unclogging arteries brought the two together. The dean of the University of Missouri School of Medicine and the chair of the College of Veterinary Medicine's Department of Biomedical Sciences are collaborating on research that could help prevent heart attacks.

For the last 15 years, Delafontaine and his team have conducted National Institutes of Health-funded research on atherosclerosis — plaque buildup in arteries. Specifically, Delafontaine has studied the effectiveness of the protein Insulin Growth Factor-1 (IGF-1) in reducing plaque in the arteries of mice.

"We have had some breakthroughs recently that indicate this protein might be quite effective at reducing blockages and preventing heart attacks," Delafontaine said. "We wrote a proposal to the National Institutes of Health to take this to the next level, which is to do a large animal study before taking it to humans."

That's where Bowles came in. He, too, has researched atherosclerosis for decades. And he had access to the perfect pig models. That made the proposal more attractive to the NIH, which awarded a R01 Grant in July that is worth $2.4 million over four years.

The pigs in question are genetically disposed to high cholesterol and will be fed a high-fat diet to accelerate disease development. They will be treated with IGF-1 to determine if it limits plaque buildup.

This project also studies the role of LARP6, a mRNA-binding protein that Delafontaine and his colleagues have shown helps induce collagen synthesis and plaque stabilization in animals with atherosclerosis.

"What kills people in heart attacks are the acute myocardial infarctions that have no symptoms beforehand, no warning," Bowles said. "All of a sudden, you have a heart attack and you die. That's because you have these relatively small lesions that don't induce any symptoms, but they rupture, form a big blood clot, and that blood clot blocks the flow of blood to the heart and causes the fatal heart attack.

"This IGF that Patrick and I are looking at, we're trying to stabilize those plaques so the small plaques don't rupture. If nothing else, progress to bigger plaques that at least give you some symptoms that we can treat through medicine or through stents, but take away the sudden fatal heart attack."

IGF-1 is approved by the Food and Drug Administration to treat children with growth disorders. The supply is limited and expensive. The amount required to treat pigs whose weights approach 200 pounds would cost millions of dollars, Delafontaine said. Fortunately for the researchers, the pharmaceutical company Ipsen donated IGF-1 for the project.

"We've got to thank the NIH for their support, but we've also got to thank the company that provided us this medication," Delafontaine said.

The study was supported by the National Heart, Lung, and Blood Institute of the National Institutes of Health (R01HL070241).

FACULTY AWARDED FOR INTERDISCIPLINARY RESEARCH

The University of Missouri School of Medicine, College of Engineering and College of Veterinary Medicine recently partnered with Mizzou Advantage to award six interdisciplinary groups of faculty with $50,000 each in pilot funding for translational scientific research and biomedical innovations. The projects range from improved hepatitis B treatments to discovering a novel approach to diagnosing and reversing endothelial dysfunction in Type II diabetes.

Mizzou Advantage's "One Health, One Medicine" initiative fosters interdisciplinary collaboration among faculty, staff, students and external partners to solve real-world problems. The collaboration between the medical school, Mizzou Advantage and the veterinary and engineering colleges is based on the common goal of transforming research discoveries into health care innovations that improve patients' lives.

READ about Mark McDonald, a Jefferson City boy with Duchenne muscular dystrophy, at **muhealth.org/our-stories**.

Gene therapy for Duchenne muscular dystrophy advances toward clinical trials

Technology developed by MU School of Medicine researcher is now ready for last phase of testing

Researcher Dongsheng Duan, PhD, continues to race toward bringing an effective treatment to patients with Duchenne muscular dystrophy (DMD), a disease characterized by muscle deterioration and weakness.

Duan, a Margaret Proctor Mulligan Professor in medical research at the University of Missouri School of Medicine, has spent his entire academic career working toward a cure. He and his team successfully administered an investigational treatment, a gene therapy, to dogs with Duchenne in 2015 in preclinical studies. Now, Duan is passing the torch to clinicians who will use a version of the gene sequence he developed to test its effectiveness in humans with Duchenne.

Muscular dystrophy is caused by gene mutations. Children with Duchenne have a specific gene mutation that interrupts the production of dystrophin, a protein responsible for muscle integrity. Without dystrophin, muscle cells become weak and eventually die. Many children lose the ability to walk. Eventually, muscles responsible for breathing and muscles in the heart stop working.

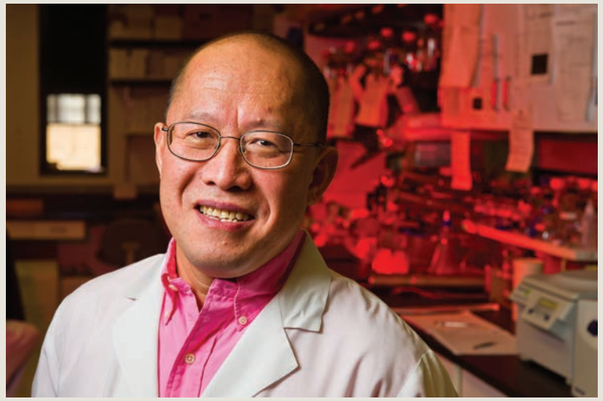
Through gene therapy, Duan believed he could replace the faulty gene with an engineered, functional gene. Dystrophin is tricky to replace, though, because of its large size. It is an incredibly long gene that encodes for a protein nearly 10 times the size of a typical human protein.

Because of the size, Duan and his team developed a smaller version of the gene called a microdystrophin. The researchers used a common virus not known to cause disease to deliver microdystrophin to muscles.

The sequence Duan used to create the microdystrophin, also known as SGT-001, was licensed by Solid Biosciences, the company that will lead clinical trial efforts.

The adaptive, Phase I/II clinical study will investigate the safety and efficacy of SGT-001 in patients with DMD, according to the Solid Biosciences' website. The study is expected to begin in late 2017 in the United States.

Although Duan isn't directly involved in the clinical trials, he continues to examine and refine other potential treatments for Duchenne muscular dystrophy.

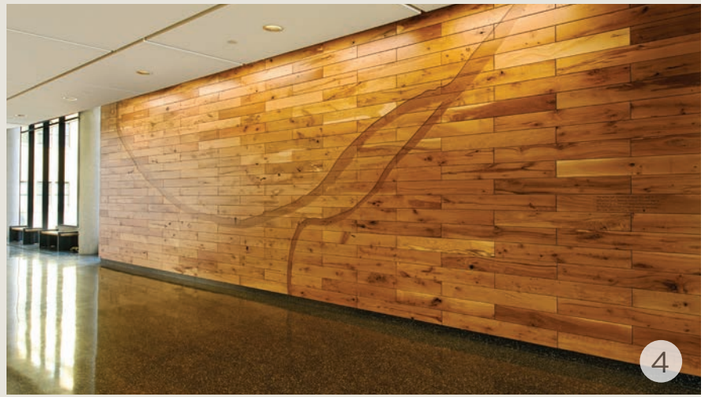


▲ Dongsheng Duan, PhD, has spent his professional career seeking a cure for Duchenne muscular dystrophy. Duan replaced the faulty gene dystrophin with an engineered smaller version called microdystrophin to successfully treat dogs with the disease in 2015. Clinical trials of the gene therapy will be conducted late this year by Solid Biosciences, of Cambridge, Mass.

▲ Mark McDonald, in green, stays active despite suffering from Duchenne muscular dystrophy, a disease characterized by muscle deterioration and weakness.

"We hope our studies will identify the most promising, most effective treatments – or combination of treatments – to meet the needs of patients at different disease stages," Duan said. "We also hope our work in the laboratory will help screen out candidate treatments that may be less ideal for patients. SGT-001 is part of the first generation of gene therapy that will go to the whole body of a patient, and we continue our work to develop the next generation of therapies to help patients with this devastating disease."

READ about leading-edge research, including Gerald Hazelbauer's molecular studies of chemoreception, which have been funded by the NIH for 34 years. Visit: **missouri.medicine.edu**.



FUTURISTIC DESIGN WITH A NOD TO THE PAST

New medical education building reflects state's history and its people

▲ 1 Weldon Webb, the recently retired associate dean for the Springfield Clinical Campus implementation, speaks at the opening of the Patient-Centered Care Learning Center in July. 2 The PCCLC includes wood reclaimed from Missouri buildings. 3 A wall on the second floor shows the confluence of the Missouri and Osage Rivers. 4 A wall on the first floor traces the path of the Current River.

At MU's new medical education building, a massive black-and-gold banner hangs in Acuff Gallery.

"To improve the health of all people, especially Missourians, through exemplary education, research and patient-centered care." the banner reads.

Those using the new building have more than the hanging reminder to keep them focused on the school's mission. The Patient-Centered Care Learning Center reflects the University of Missouri School of Medicine's mission in its design and function.

"Throughout the planning and construction of this building, we kept two important elements in mind," Weldon Webb, the newly retired associate dean for the Springfield Clinical Campus implementation, told an audience of more than 400 at the PCCLC's dedication ceremony in July. "We want to remind the students, the faculty and the staff why they're here every day: to produce patient-centered physicians for Missouri and beyond. We want this building to be reflective of Missouri, its heritage and its citizens. Those two elements are very much intertwined and not two separate issues."

Webb championed the class-expansion project that added the clinical campus in Springfield and the new building in Columbia. In his role with the medical school, he also spearheaded the PCCLC building project. A trained historian, Webb took to heart the assignment to honor Missouri's heritage.

"You will see patient-centeredness and Missouri culture again and again," Webb said.

MISSOURI CONNECTION

Webb recruited W. Arthur Mehrhoff, PhD — the academic coordinator at the University of Missouri Museum of Art and Archaeology until his retirement in October — to further incorporate the arts and Missouri history into the building.

Mehrhoff had previously organized the University of Missouri Pride of Place Campus Heritage Network and researched what makes informal learning spaces effective.

Webb said it was Mehrhoff who came up with the idea of etching Missouri watersheds into the reclaimed wood walls on each floor of the building.

"Having worked in community design throughout Missouri, I realized the state of Missouri is honeycombed with all of these watersheds," Mehrhoff said. "There are so many geographic areas, but they all run into watersheds. That's what supports life here in the heart of the country."

The "river walls" south of the elevators on each floor are made of reclaimed Missouri wood, etched with the carvings of the Missouri, Mississippi, Osage, Current and James Rivers — running through the building as they run through Missouri. The wood is salvaged from mid-Missouri barns, a wagon factory in Knox City, a shoe factory in Palmyra and a general store in Hannibal.

"I know this spot, because it's where I go fishing when I'm home," said Nick Arnold, MD, '17, as he pointed to a place near Hannibal along the Mississippi River. "Getting to see something like this, especially for the new students who may not be from Missouri, it's a cool thing for them to see. And then people from there, it's pretty awesome to see, as well."

> "There are so many implicit themes in the building's design and purpose. The open floor plans support the qualities that make up patient-centered care: communication, collaboration, partnership and openness."
>
> — **Lauren Gillespie**, second-year medical student

STUDENT-DRIVEN DESIGN

Students' needs also drove the building's design. The $42.5 million education building offers six floors and 97,088 square feet of space focused on MU's patient-based learning curriculum.

A concept emerged after design architects from BNIM of Kansas City and planning architects from Christner Inc. of St. Louis gathered input from students, faculty and staff. The architects shadowed students to observe their daily activities.

"I was on one of the committees that helped to design it," said Misty Todd, MD, '17. "To keep the theme of Missouri running through it — so being able to walk through the halls and point out places that are close to my hometown or see wood that I know was used in wagons that went through trails near my home — it's very meaningful. It makes you feel like you belong."

It's the student-focused design, features and technology that will enhance learning and prepare students to become better physicians. You won't find a traditional lecture hall in the building. Instead, flexible classrooms and study areas have movable tables and chairs that students can reconfigure to accommodate discussion groups. In the anatomy labs, instructors can magnify and display what they are doing so all students can see clearly. Previously, students crowded around the dissection tables to observe.

"There are so many implicit themes in the building's design and purpose," said Lauren Gillespie, a second-year medical student. "The open floor plans support the qualities that make up patient-centered care: communication, collaboration, partnership and openness."

In patient-based learning, students work through clinical cases in small discussion groups. Later, students practice their interviewing and diagnostic skills with role-playing patients. The new building provides additional room for these activities — from more discussion rooms to technologically equipped exam rooms so instructors can observe students' conversations with the patient actors.

"Patient-based learning is a very memorable way to learn — learning things in the context of real patients," Gillespie said. "It fosters qualities and communication skills throughout the process that are going to be instrumental to how we practice as physicians in the future."

PATIENT-CENTEREDNESS

On the fifth and sixth floors, artistic overlays on glass doors to the patient-based learning labs feature real Missourians. Resembling etched glass, the 32 images and their individual stories are the works of professional photojournalists of the Missouri Photo Workshop, an MU School of Journalism endeavor spanning six decades.

The images represent the diversity of patients cared for by Missouri-trained physicians and serve as constant reminders to put patients first.

"You can feel yourself involved in the lives of people," Mehrhoff said. "When you see a picture of someone who could be from your hometown, … you can fill in the rest of the person's story. There's enough to pull you in — making it personal and creating empathy — which seems to be pretty important for healers and physicians."

The consensus among students is they appreciate the new building and its thoughtful design, Gillespie said.

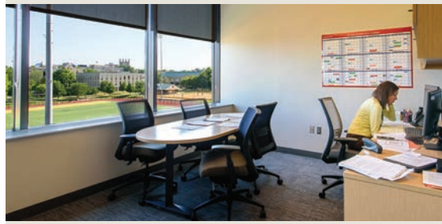
"We are so grateful to continue our medical education in this space," she said. "A lot of people provided input along the way. We're grateful we get to enjoy their hard work."

A TOUR, FLOOR BY FLOOR

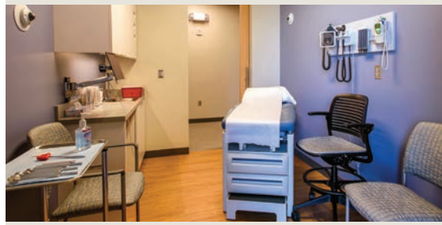
1ST FLOOR

2ND FLOOR

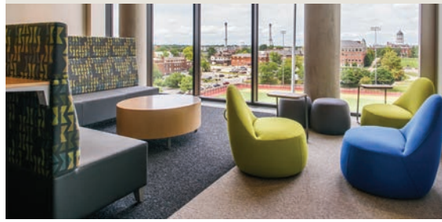
3RD FLOOR



4TH FLOOR



5TH - 6TH FLOORS



TO SEE MORE, visit the MU School of Medicine Facebook photo gallery of images from the dedication ceremony at **facebook.com/MissouriMedicine**

Coulter program helps researchers

More than $400,000 awarded to five collaborative teams

▲ From left, Yunxin Zhao, PhD; Mili Kuruvilla-Dugdale, PhD; Filiz Bunyak, PhD; and Teresa Lever, PhD, won a Coulter Award for the Tongue Twister mobile health app.

▲ Jimi Cook, DVM, PhD; and Trent Guess, PhD; received two Coulter Awards from MU Vice Chancellor for Research, Graduate Studies and Economic Development Mark McIntosh, left, and MU Chancellor Alexander Cartwright, right.

WATCH the video highlights of the 2017 Coulter Awards at **coulter.missouri.edu**.

The idea struck Teresa Lever, PhD, in the laboratory when she noticed that young mice afflicted with amyotrophic lateral sclerosis struggled to lick from a spout before other signs of their disease surfaced.

Maybe those mice could tell us something about diagnosing and treating human tongue dysfunction caused by ALS and other neurological diseases that result in devastating speech and swallowing disorders.

Since humans don't normally drink from spouts like mice, Lever, an assistant professor of otolaryngology at the University of Missouri, figured out a novel way to detect tongue impairment in people based on sound. Then she partnered with Mili Kuruvilla-Dugdale, PhD, an assistant professor of communication science and disorders in the School of Health Professions, and Filiz Bunyak and Yunxin Zhao, both PhDs in the Department of Computer Science, to translate her research into a mobile health app called Tongue Twister.

"This app will allow clinicians to easily detect and monitor tongue dysfunction in their patients over time, sort of like taking blood pressure or standing on a scale, where you get a number to reinforce whether your treatment plan is actually effective or not," Lever said.

On Oct. 18, MU's Coulter Translational Partnership Program awarded grants worth a total of $409,000 to five teams of physicians and engineers — including Lever's group — as a reward for their successful cross-campus collaboration. The money will help get those inventions to market.

The team of Jimi Cook, DVM, PhD, director of the Thompson Laboratory for Regenerative Orthopaedics, and Trent Guess, PhD, associate professor of orthopaedic surgery, won two Coulter Awards. The first was for BioJoint Flex, a non-invasive device that helps patients regain range of motion in their knees after injuries. The second was for the Mizzou Knee Arthrometer Testing System, a screening tool for diagnosing and monitoring the treatment of knee ligament injuries.

Sonny Bal, MD, JD, MBA, professor of orthopaedic surgery, and Mohamed Rahaman, PhD, professor emeritus in the Department of Materials Science and Engineering at Missouri S&T, were awarded for Natur-O-Lock, an artificial hip socket that reduces the risk of dislocation. Mark Hunter, MD, director of the Division of Gynecologic Oncology, and Gary Yao, PhD, professor of bioengineering, partnered on OPT-Enhanced Colposcopy, an imaging system that detects precancerous lesions on the cervix.

This marked the sixth year of MU's Coulter Translational Partnership Program. Since its inception, the Coulter program has helped MU research projects generate more than $13.5 million in new government grants.

MedPrep helps former Tiger pursue dream

Tipton credits program for getting him ready to face his next big challenge in medical school

Chris Tipton took the scenic route to a football scholarship at the University of Missouri. He was overlooked as an offensive lineman at Bowling Green High School, tucked away in the northeast part of the state, and began his college career at tiny Culver-Stockton before transferring to MU in 2004.

A decade after his playing days, Tipton followed a winding path back to MU, this time as a student in the School of Medicine.

"That's kind of been my M.O.," said Tipton, a 32-year-old first-year medical student. "I'm from rural America. In football, it was harder to get seen. I had to work my way up to Mizzou. I did walk on, but I was fortunate enough to earn a scholarship soon after I walked on. I had to work for that.

"I had to work my way up through being a paramedic, work my way toward medicine. I didn't get to be the 22-year-old kid going to med school, like normal. But I think it's going to make me a better physician in the long run."

Tipton first applied to medical school in 2015 but wasn't accepted. He credited the Mizzou MedPrep program as a difference-maker in his successful application last year. He improved his MCAT score by 12 points and learned what admissions coordinators valued in an applicant.

"That MedPrep program was monumental in helping me," he said. "I was in the working world, so it was nice to have some guidance in the whole application process."

The program is in its seventh year at MU. MedPrep is divided into workshops that target people at different stages on the path to medical school. The first workshop, Medical Explorations, is for high school students considering the idea of medical and health care careers. MedPrep I and II are for college juniors and seniors and nontraditional students, and the focus is on helping the students present themselves effectively in the application process. The most advanced workshop, MedPrep III, is for newly admitted MU School of Medicine students preparing to tackle biochemistry, cell physiology, pharmacology and anatomy in their M1 year. It also includes a diversity and inclusion primer.

MedPrep is open to all, with a special focus on value-added groups. That category includes underrepresented-in-medicine students from socioeconomically disadvantaged backgrounds, students from rural areas and nontraditional students, such as Tipton, who are taking a circuitous route to medical school.

After graduating from MU with a degree in general agriculture, Tipton wanted to be a firefighter. To that end, he got certified as an emergency medical technician and paramedic. That sparked an interest in medicine, which grew as he worked as a flight paramedic in Hannibal and a paramedic in St. Louis. He earned a master's degree in biochemistry and biotechnology at the University of Missouri-St. Louis, where he researched treatments for sepsis.

"I developed carbohydrate molecules to block inflammatory cascades — nerdy stuff," he said.

▲ Chris Tipton was an offensive lineman for the Missouri football team a decade ago. After graduating from MU, Tipton worked as a paramedic and earned his master's degree. With help from the Mizzou MedPrep program, he was accepted into the MU School of Medicine.

Meanwhile, Tipton and his wife, Jordyn, were raising a family, which includes two young sons — Kye and Xander — with another child due in March 2018. That's a busy enough life without adding med school to the mix, but Tipton was determined, even after the first rejection.

"It's never too late," MedPrep program director Andrea Simmons said. "Even with a family, you can still go back and be in school and still reach your dreams. And even if you apply and don't get in, don't be discouraged and apply again. MedPrep may help enhance some of the things that might have been missing from that first application."

Over Labor Day weekend, the Missouri athletic department held a reunion for the 2007 football team. Tipton was a backup offensive lineman on that team, which went 12-2 and is remembered as one of the best in school history. The reunion was a chance to reconnect with old buddies and relive the glory days.

Tipton didn't go.

"Honestly, I studied," said Tipton, who spent the weekend engrossed in histology and hematopoiesis. "I was really torn, but I just decided that this is my focus right now."

FOR MORE INFORMATION: Read about MU's MedPrep program at **medicine.missouri.edu/education/pre-med-outreach-programs**.

STETHOSCOPES AND WHITE COATS USHER IN FIRST-YEAR STUDENTS

▲ 1 First-year medical students receive their white coats at a ceremony in July at Jesse Hall. 2 The class of 2021 includes 128 students, the largest in school history. 3 A member of the class of 2021 receives her stethoscope from Dean Patrick Delafontaine, MD, in a ceremony in July at the Patient-Centered Care Learning Center. 4 First-year medical students test their stethoscopes.

Students from the School of Medicine class of 2021 took their first steps toward becoming physicians by receiving stethoscopes and white coats in July.

"Now, more than ever, is an exciting time to be part of the MU School of Medicine," said Patrick Delafontaine, MD, the Hugh E. and Sarah D. Stephenson Dean of the School of Medicine, in the White Coat Ceremony on July 28 at Jesse Hall. "With 32 percent of our new students representing various minority groups, diversity is perhaps one of the greatest strengths of the class. These are differences to celebrate, because — like their future patients — our students come from a variety of backgrounds and experiences."

Two days before the White Coat Ceremony, the first-year students received new stethoscopes branded with the MU Medicine logo during a welcome breakfast in the University of Missouri's new Patient-Centered Care Learning Center. More than 90 alumni and supporters funded stethoscopes for the class of 2021.

Meet the CLASS OF 2021

128 Students
CURRENTLY ENROLLED in the Class of 2021

2,266* TOTAL APPLICATIONS
*highest number of applications ever received by the school

386 *Interviews scheduled*

203 *Applicants accepted*

Students from socioeconomically disadvantaged backgrounds: **30%**

Students from rural areas: **15%**

Students from Missouri: **81%**

32%* **Students who self-identify as an ethnic minority**
This includes students who are Asian, black, Latino, American Indian or Pacific Islander.

9% **Students who self-identify as underrepresented minorities**

Average Science GPA: **3.68**
Average Total GPA: **3.73**
Average MCAT Score: **78th** percentile

AGE RANGE: **20 – 38**

47% **53%**

GEOGRAPHIC REPRESENTATION

ARIZONA - 1
CALIFORNIA - 5
CONNECTICUT - 2
DELAWARE - 1
FLORIDA - 1
GEORGIA - 1
ILLINOIS - 2
KANSAS - 1
KENTUCKY - 1
LOUISIANA - 2
MARYLAND - 1
MASSACHUSETTS - 1
MISSOURI - 104
NEW HAMPSHIRE - 1
TENNESSEE - 1
UTAH - 1
WISCONSIN - 2

LEARN MORE about applying to medical school at **medicine.missouri.edu/prospective-students/**.

FAST FACTS ABOUT THE SCHOOL OF MEDICINE CLASS-EXPANSION PROJECT

- The expansion allowed class sizes to increase from **96 TO 128 STUDENTS**.
- The MU School of Medicine incoming class is the largest in school history with **128 STUDENTS**.
- More students mean the school can train more doctors to help alleviate Missouri's critical physician shortage.
- It was made possible by a partnership with **MU SCHOOL OF MEDICINE**, **COXHEALTH** and **MERCY** in Springfield.
- **The PCCLC** is home base for first- and second-year students. Third- and fourth-year students can complete their clinical training in Springfield or Columbia.

FACULTY RECEIVE HUMANITARIAN AWARDS

Two MU School of Medicine faculty members were honored Oct. 14 at the University of Missouri International Center for Psychosocial Trauma's awards banquet.

Patrick Delafontaine, MD, Hugh E. and Sarah Stephenson Dean of the MU School of Medicine, received the Humanitarian Award. It has been given annually since 1994 for lifetime work that has significantly improved the lives of children, adults and their families who live in unusually difficult circumstances.

When Hurricane Katrina hit New Orleans, Delafontaine, then the director of the Tulane University Heart and Vascular Institute, coordinated efforts to evacuate patients by helicopter after the university's hospital flooded and lost electricity. In the weeks and months that followed, he ensured those in need received medical care in a devastated city. He helped establish outpatient clinics in the storm-ravaged New Orleans East area and played a key role in starting cardiology and nephrology clinics in the town of Algiers.

Laine Young-Walker, MD, associate dean for student programs, earned the Lifetime Achievement Award in Child Psychiatry. It is given annually by UMC Child Psychiatry Alumni in partnership with UMICPT.

Young-Walker has worked in the field of child and adolescent psychiatry since earning her doctorate from the University of Missouri in 1997. She joined the MU School of Medicine's Department of Psychiatry in 2009.

Her work and research has focused on early childhood mental health and increasing access to child and adolescent psychiatry.

Kevin Staveley-O'Carroll, far left, is a man of many talents, and he has attracted a loyal team of colleagues who have stuck together over the past dozen years. The team includes, from left, Jussuf Kaifi, Guangfu Li, Eric Kimchi and Diego Avella.

A TEAM WITH AN UNCOMMON BOND

Staveley-O'Carroll's cancer-fighting group pulls together in work and fun

"We were drawn here by the level of engagement at Ellis Fischel, the strong faculty and training programs in the Department of Surgery and the college campus with co-location of the medical school, veterinary school and engineering school."

— **Kevin Staveley-O'Carroll, MD, PhD,** Hugh E. Stephenson Jr., MD, Department of Surgery, Director of Ellis Fischel Cancer Center

ON THE WEB: Guangfu Li's enthusiasm for research is infectious. Read more about Li at **medicine.missouri.edu**.

Kevin Staveley-O'Carroll, MD, PhD, had just accepted the job as surgery chair at the University of Missouri School of Medicine and director of Ellis Fischel Cancer Center, and he needed a house in Columbia.

Fortunately, one had just come on the market in a neighborhood close to campus. Unfortunately, Staveley-O'Carroll was 1,000 miles away.

No problem. His long-time partner in cancer immunotherapy research, Eric Kimchi, MD, was in town on his own house hunt after being named Ellis Fischel's medical director. Kimchi took a look at the new listing and recommended it.

Staveley-O'Carroll bought it, sight unseen.

"No pressure there. That couldn't have gone wrong at all," Kimchi said with a laugh. "I don't know if I'd do that with my brother, but with Kevin, with our group, that's kind of how we work. We know that what the other person is telling us is the truth to the best of our knowledge. That's an amazing thing."

It would be tempting to say Staveley-O'Carroll's five-man cancer-fighting band is like a family. But the team members might be closer than that, as most families disperse for the day and convene at night. This group works together, plays together and even moved to MU as a medical package deal.

Staveley-O'Carroll, Kimchi, Diego Avella, MD, and Jussuf Kaifi, MD, PhD, are physician-scientists. Guangfu Li, PhD, is a full-time scientist who runs the laboratory.

On the weekends, if you see one, you probably will see them all, along with their significant others. Three of the doctors — Staveley-O'Carroll, Avella and Kaifi — are neighbors, lending credence to the notion that great minds think alike, especially as it pertains to real estate.

"We play tennis, watch sports and have cookouts," Kaifi said of the group's activities. "We even go on vacation together."

The list goes beyond that, including pool parties, ping-pong tournaments, movie nights and jam sessions — Kaifi is a drummer, and Staveley-O'Carroll dabbles on the saxophone.

When Li, formerly a high-ranking officer in the Chinese military, and Staveley-O'Carroll, a wrestling and martial arts enthusiast, meet for a chat at work, impromptu feats of strength can ensue.

"Guangfu and I actually do pull-ups together when we're talking science," said Staveley-O'Carroll, who has a pull-up bar in his office right next to the belt he won as the 2009 submission-fighting champion of the nation's northeast region.

BUILDING A BOND

While doing his surgery residency at the Johns Hopkins Hospital in 1992, Staveley-O'Carroll learned about the emerging field of tumor immunology. The idea of treating cancer with immunotherapy was not widely accepted at the time, but it made sense to Staveley-O'Carroll.

Cancer cells are different from normal cells and should be attacked by the body's immune system as it would other foreign invaders. Somehow, the immune system is tricked into tolerating the cancer cells, which allows tumors to grow without resistance. So if someone could find a way to alert the immune system to the danger of the cancer — to essentially flip its switch from off to on — then the body would start fighting back, halting the tumor's growth or possibly even destroying it.

Figuring out how to flip that switch became a quest for Staveley-O'Carroll and his team, which began to form a dozen years ago at Penn State.

Kimchi was the first to join, followed soon by immunotherapy enthusiasts from far and wide: Avella from Colombia, Li from China and Kaifi from Germany. They started working with a specific focus on hepatocellular cancer — cancer that starts in the liver.

The only FDA-approved chemotherapy drug for the disease extends life expectancy by just a few months. Surgery is rarely an option, because the cancer usually surfaces in livers too damaged by cirrhosis to recover from the removal of a tumor.

The first research priority was to develop a mouse model. Avella provided a key breakthrough when he found a way to induce liver cancer in mice with normal immune systems, rather than immunosuppressed mice. That was important because most humans who get liver cancer have normal immune systems. Then Li made the model even more realistic by figuring out how to induce cirrhosis in conjunction with liver cancer.

"I say this very humbly, but this is probably the best animal model for liver cancer in the world right now," Avella said.

With the perfect platform, the research took off in multiple directions, including immunotherapy testing in conjunction with chemotherapy drugs and radio-frequency ablation. The researchers took off, too, but in the same direction.

MISSOURI BOUND

All of the core team except Avella, who was in the midst of a three-year fellowship at the University of Chicago, decided to move together to the University of Missouri two years ago. Avella rejoined the team in September 2017 after finishing his fellowship, saying he never even considered applying anywhere else.

"We were drawn here by the level of engagement at Ellis Fischel, the strong faculty and training programs in the Department of Surgery and the college campus with co-location of the medical school, veterinary school and engineering school," Staveley-O'Carroll said.

As chair of the Department of Surgery as well as the director of Ellis Fischel, Staveley-O'Carroll's focus extends far beyond his tight-knit research group.

"My experiences in team-building and our collaborative successes have given me a model that I believe is scalable," said Staveley-O'Carroll, who wants to develop a world-class department and cancer center. "We have a passion for building and working within effective teams. We have built such a team in tumor-immunology research, and Mizzou is the perfect place to expand this team-building effort in both the department of surgery and the cancer center."

Mark Wakefield, MD, FACS, the chief of the Division of Urology, was in the process of recruiting a rising star in his field when Staveley-O'Carroll arrived at MU. Wakefield had spent eight years in pursuit of Katie Murray, MD, who was serving a fellowship at Memorial Sloan Kettering Cancer Center.

"He put together a recruitment package that was thoughtful and effective and set Dr. Murray up for success," Wakefield said. "Those weren't tools that I had at that time. Now, I have a good model. So I can see why the people who follow him do so. He creates an environment where there's the potential for success, and I saw it right away with the help he gave me."

For Staveley-O'Carroll's research team, the loyalty to each other and their cause outweighs opportunities for individual advancement.

"Our research, our clinical interest, our social interests are so tied in together." Kimchi said. "Each one of us has had a chance to go do something on our own, but that would mean breaking up the team and breaking up all the accomplishments we've already had."

The team has the equivalent of three prestigious R01 grants from the National Institutes of Health. The most recent — worth more than $2.7 million — is a multiple-principal-investigator team science award with Staveley-O'Carroll as the lead. It funds a study with a dual purpose. The group will try to determine how a compound developed by bioengineer Mark Kester of the University of Virginia called nanoliposome-loaded C6-ceramide (LipC6) breaks tumor-induced immune tolerance and to develop LipC6-integrated immunotherapy for liver cancer.

"I don't want to downplay this," Staveley-O'Carroll said. "It's a pretty big and interesting discovery, and this is a strategy that will translate seamlessly to the clinic."

The grant is a testament to the power of a team whose members have helped each other find a home at MU and who have led the University of Missouri to the front lines of cancer research.

"We support each other, we help each other, we benefit from each other," Li said. "This is a high-performance, high-production team. I really like this environment."

FACULTY SPOTLIGHT

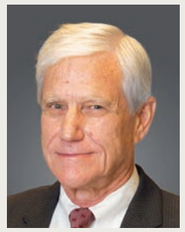
NEW APPOINTMENTS

VICTOR ARNOLD was appointed as the associate dean for practice plan management and executive director of University Physicians at the MU School of Medicine. Arnold will oversee the day-to-day operations of University Physicians Administration, collaborate with the clinical departments on UP matters and coordinate with MU Health operations and strategic developments.

MICHAEL HOSOKAWA, EdD, was named the senior associate dean of education and faculty development. He previously held the position on an interim basis. Hosokawa is a professor of family and community medicine and has served the School of Medicine since 1974. He helped establish the patient-based learning curriculum at the School of Medicine.

MATTHEW ROBINSON, MD, was named chair of the Department of Emergency Medicine after holding the position on an interim basis since 2015. In 2003-04, Robinson served as officer-in-charge of medical shock/trauma/surgical units in Iraq. Robinson received his doctorate from MU and completed his internship and residency at Naval Regional Medical Center.

ACCOLADES



PATRICK DELAFONTAINE, MD, Hugh E. and Sarah D. Stephenson Dean of the MU School of Medicine, attended the annual meeting of the American Clinical and Climatological Association in October in San Antonio, Texas. Twenty lectures were presented on topics ranging from health care for the homeless to cancer genomes and strategies for allergic disorders.

Delafontaine was inducted into the ACCA in 2016, becoming one of only 250 members nationwide and the first ever from the University of Missouri system.

The ACCA was organized in 1884 by a group of physicians and scientists who wanted to improve medical education, research and practice in the United States. Its initial concern was with tuberculosis and its treatment by residence in a suitable climate. It has expanded its interests to all scientific and clinical aspects of medicine, while retaining an interest in the influence of climate change on health.

TALISSA ALTES, MD, chair of the Department of Radiology, received a 2017 fellowship award from the International Society for Magnetic Resonance in Medicine. Altes got the award at the ISMRM meeting held in April. "I am very honored to have been selected as a Fellow of the ISMRM in recognition of my contributions toward improving lung imaging," Altes said.

RICHELLE KOOPMAN, MD, professor and director of research in the Department of Family and Community Medicine, has been named a member of the 2017-18 class of Fellows in the Hedwig van Ameringen Executive Leadership in Academic Medicine program. ELAM is based at the Institute for Women's Health and Leadership at Drexel University in Philadelphia.

MELISSA LEWIS, PHD, assistant professor of family and community medicine, became the first person not from Australia or New Zealand to receive the LIMElight Award for Excellence in Indigenous Health Education Research for her work on the process of implementing indigenous health content into a medical school curriculum. The Leaders in Indigenous Medical Education Network, sponsors the award.

ELIZABETH PARKS, PHD, professor of nutrition and exercise physiology, and **STEVEN SEGAL, PHD**, professor of medical pharmacology and physiology, were named biomedical research exemplars by the Professionalism and Integrity in Research Program through the Center for Clinical and Research Ethics at Washington University in St. Louis. They were chosen based on their high-quality, high-impact research and professionalism and integrity in research.

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A CHAIR WITH A PERSONAL TOUCH

Stannard is recipient of $2 million Wyss gift

▲ James Stannard, MD, now serves as the Hansjörg Wyss Distinguished Chair in Orthopaedic Surgery after receiving a $2 million gift from Wyss, an entrepreneur and philanthropist.

When James Stannard, MD, took over as the director of the Missouri Orthopaedic Institute (MOI) in 2010, the department had two partially funded chair positions. One of his goals was to build the roster of endowed chairs, which would make it easier to recruit the best doctors and elevate MOI's performance and national standing.

Endowing a chair normally means funding a position in perpetuity. Last year, Stannard received a different kind of gift, one that funds him personally and not the position.

The Hansjörg Wyss Distinguished Chair in Orthopaedic Surgery represents a $2 million donation to Stannard, given in increments of $200,000 for 10 years.

"It was established and written to help me pursue, on a national scale, research and leadership activities that are above and beyond running the local department," Stannard said. "I was already doing some of that, but it just has freed me up a little bit more."

Wyss is an 82-year-old entrepreneur and philanthropist who made his fortune as the owner of the medical device company Synthes USA. He sold the company to Johnson & Johnson for more than $21 billion in 2012. He has donated to many environmental, social justice and science causes.

Stannard said he doesn't know Wyss well but had a connection with him through the AO Foundation, a prestigious orthopaedic surgery research and education organization. One of the AO Foundation's board members informed Stannard that Wyss might be interested in making a significant gift to him.

Wyss had grown leery of endowing chairs. He began supporting specific doctors but often wound up supporting random universities after those doctors left. While MOI now has eight traditional chairs that are at least partially funded — including one Stannard contributes to — and he would like to add to that number, he understood Wyss' perspective.

"His goal was to allow me to free up time to do other things beyond clinical care, like research," Stannard said.

Because of the gift, Stannard has reduced his time spent on clinical duties from 65 to 40 percent while more than doubling his time spent on research and leadership. In 2016, he was elected president of AO North America. The position gives him the opportunity to raise the profile of MOI nationally and internationally.

GRATEFUL TIGER CONVERSATION

Dr. Sri Gavini Memorial Scholarship recipient Alex Heck, fourth-year medical student

What are your career goals?

My plan in medicine is quite simple: to serve the overlooked. There are so many things that excite me about a career in medicine — from caring for individual patients, to transforming systems. I believe that Robert Virchow was correct when he said "the physician is the natural attorney for the poor" and that sometimes the best way to improve health for an individual is to improve the systems around them.

Have your career goals changed since beginning medical school?

I shadowed a pediatrician as an undergraduate student and thought pediatricians only gave vaccines. But my pediatrics rotation has been my favorite rotation so far. I can't imagine choosing a specialty that doesn't involve kids to some degree.

What was the most influential factor in your decision to attend medical school?

Input from loved ones I respect very much and reading the book "Mountains Beyond Mountains."

What has receiving this scholarship meant for you?

Most of the specialties I'm considering are some of the lowest-paying specialties. Unfortunately, the amount of debt after medical school is a factor for many people when deciding specialties. This scholarship gives me additional freedom to choose a specialty that I desire — one that I believe will have greater benefit to the underserved.

What has been a memorable experience from medical school?

My favorite interaction has been with a young patient of mine when I was on the general pediatrics ward. He suffers from a chronic disease, and most physicians and nurses know him from his frequent appointments. As a medical student, my afternoons were more open than a typical resident, so every afternoon I would go in and spend time with him. A few weeks later, I heard from a mutual friend that knows him that he had been asking about me, and she even FaceTimed me when she was with him so he could say "hi." It made my day to know that he appreciated the time I spent.

READ ABOUT Gerard Fischer, who is giving back to MU's Department of Health Management and Informatics, which prepared him for a career in health-care administration at **medicine.missouri.edu**.

More than 250 Physicians and Friends Return for the 60th Annual Physicians Alumni Weekend

The 60th edition of Physicians Alumni Weekend drew attendees from more than 25 states to Columbia on Nov. 3-4. They toured the new patient-based learning labs, simulation space and other areas of the new Patient-Centered Care Learning Center. The weekend featured the Milton D. Overholser Lecture presented by David Barbe, MD '80; and scientific program lectures from Randy Sherman, MD '77; Lisa Jacobs, MD '92; A. Brent Carter, MD '92; Karen Gehrs, MD '87; and Karen Edison, MD '89, chair of the Department of Dermatology and Philip C. Anderson Professor and Medical Director, Missouri Telehealth Network at the University of Missouri School of Medicine.

Friday's events also featured an address from Dean Patrick Delafontaine on the state of the School of Medicine. Attendees participated in a mock patient-based learning session led by Michael Hosokawa, EdD, senior associate dean for education, and Ted Groshong, MD '67, senior associate dean emeritus of alumni affairs.

Alumni from the classes of 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997 and 2007 celebrated their reunions at the annual alumni banquet on Friday and enjoyed a reunion brunch on Saturday before the Missouri football team's 45-16 victory over Florida.

1 Class agent for the Class of 1977 Jerald Chaffin, MD, catches up with Steve Cohle, MD '77, and his wife, Mary Cohle, during the scientific program at the 60th Annual Physicians Alumni Weekend. Behind them, from left, is Shari Thompson, MD '95; Harold Kennedy, MD '64; Gary Mueller, MD '72, and his wife, Carolyn Mueller, PhD, RN; and MU medical students. 2 From left, members of the Class of 1967 Ted Groshong, Donald Blitz, Ned Glenn, Larry Marti, Ron Bopp, Judy Tharp, Michael Rosenthal, Sylvan Bartlett, Jim Meador, Alan Callaway, Robert Berkowitz and Charlie Leutje attended the Physicians Alumni Weekend dinner. 3 From left, Jonas Benson, MD '07, and wife Kelly Benson, of Wheaton, Ill.; and Brent Benscoter, MD '07, and his husband, Brady Devereaux, of Indianapolis gathered at the Physicians Alumni Weekend dinner. 4 Ric White, MD '97, and his wife, Brooke White, of Rock Hill, S.C., attended the Physicians Alumni Weekend dinner at the Country Club of Missouri. 5 David Barbe, MD '80, talks with students during the annual Student National Medical Association Alumni and Friends Reception held in conjunction with Physicians Alumni Weekend. 6 From left, Stephen Nagy, MD '92, and Heather Nagy of Poplar Bluff, Mo.; Randall Latorre, MD '92, and Cheryl Latorre of Tampa, Fla.; Girish Misrha, MD '92, and Shubha Mishra of Winston-Salem, N.C., attended the Physicians Alumni Weekend dinner.

Ted Groshong, MD '67, senior associate dean emeritus of alumni affairs, accepts an award from Dean Patrick Delafontaine commemorating the Ted Groshong M.D. Alumni Lectureship during the annual alumni dinner on Nov. 3.

ALUMNI HONOR TED GROSHONG WITH LECTURESHIP

Physicians Alumni Weekend included the announcement of the Ted Groshong M.D. Alumni Lectureship. George Hubbell, MD '87, MU Medical Alumni Organization president, and Dean Patrick Delafontaine surprised Groshong with the news on Nov. 3 during the annual alumni banquet at the Country Club of Missouri. They shared with him that the lecture will be presented annually at the event in which he has played such an integral role.

"When I think of service to this medical school, Ted Groshong's name comes to mind immediately," said Hubbell, who led the effort to begin the lecture campaign. "I feel we would be remiss if we did not recognize a man that has had an immeasurable impact on the School of Medicine."

After more than four decades of service to the MU School of Medicine, Groshong, MD '67, recently stepped down from his position as senior associate dean for alumni affairs. Groshong has served in many roles, including associate dean for student affairs and medical education and chair of the Department of Child Health. He is now associate professor emeritus of child health and senior associate dean emeritus of alumni affairs at the MU School of Medicine.

If you would like to donate to this cause for Dr. Groshong, you can visit: **tinyurl.com/groshonglectureship**

Delvise Fogwe and his younger brother Leslie Fogwe grew up in the African nation of Cameroon and have reunited in Missouri at the MU School of Medicine.

REUNITED ON THE OTHER SIDE OF THE WORLD

Cameroon natives Delvise and Leslie Fogwe make medical school a family affair

As children in the African country of Cameroon, Delvise and Leslie Fogwe were separated from their mom and each other for about five years. Their father had died, and their mother, Grace, didn't have the means to support five sons. The kids were dispersed to aunts and uncles, who helped raise them.

As a teenager, Delvise often stopped by the health center where his mother worked as a janitor.

"That's how I got exposed to the doctor that was in charge of the health center," Delvise said. "I would go there on days when he had down time, and he would show me around. That's how I got interested in medicine."

That interest in medicine ultimately led to a family reunion in Missouri. Delvise, a second-year student in the MU School of Medicine, and Leslie, a first-year medical student, now live together in Columbia with their mom and a younger brother, Desmond.

The journey to the United States began in Delaware. Before their father's death, the older sister of Delvise and Leslie immigrated to Delaware. Other family members, including Grace, eventually followed. Delvise, 30, and Leslie, 24, got their undergraduate degrees at Delaware State.

Delvise was the first to graduate. After applying for medical school, he was invited to six interviews. He initially knew nothing about Missouri. After his interview at MU, he was sold on the small class sizes, the patient-based learning curriculum and the city of Columbia, which he said was small enough to be comfortable for someone who grew up in the town of Mbengwi, which has a population of about 10,000.

When Leslie was ready to apply last year, his older brother, who was having a good experience at MU, helped recruit him.

"He gave me a good word about Mizzou and how classes were going and how the PBL process worked," Leslie said. "That was enticing. But I also wanted to explore options. I put a couple of applications in. I had interviews with UAB in Alabama and Penn State. I went to Wayne State in Michigan. At the end of the day, I was accepted by UAB, Penn State, Wayne State and Mizzou.

"I was very impressed by Mizzou's process. It was really fast and responsive. They accepted me the same day as my interview. I was really encouraged by that. To me, it was a sign they wanted me here and valued my presence."

The brothers are keeping their options open regarding specialities. Delvise is interested in interventional radiology and Leslie is considering oncology, among others. Both want to practice in the United States but also do a partnership or medical expeditions in Cameroon.

For now, Missouri is home. Although reunited, the brothers have busy schedules that don't allow much fraternizing.

"When I get up at 6, he's gone," Leslie said. "When I come back, he's sleeping."

Still, it's nice to be reunited with family, including their mom, who moved here in June.

"She cooks, she cleans and she doesn't understand that we are trying to lose weight," Delvise said with a laugh. "When there's food, she's like, 'You have to eat. You have to eat.' "

Class Notes and Memories at MU

'50s

JOHN OAKLEY, MD '57, lives in Prescott, Ariz. He and his wife, Helen, celebrated 65 years of marriage in April. They have six children, 15 grandchildren and two great-grandchildren. He still enjoys playing table tennis after taking the city championship in singles and doubles in 1964, and he retired from practice in 2001.

BEST MEMORY @ MU

Socialization with the other poverty-stricken married students. It was a great experience for those of us who stayed four years to graduate in 1957 — just a few residents, no intern and one-on-one time with our professors as clinical instructors.

- John Oakley, MD '57

'60s

FERDINAND DEL PIZZO JR., MD '62, lives in Chesterfield, Mo., with his wife, Linda. He has been retired from practicing medicine for 19 years.

JOEL HAFFNER, MD '62, lives in Henderson, Ky. He still practices psychiatry.

WARREN HEFFRON, MD '62, lives in Albuquerque, N.M., with his wife, Rosalee. They have been happily married for 56 years and have four children and four grandchildren. He partially retired from the practice of family medicine in 2016. He has visited 89 countries.

BEST MEMORY @ MU

Eight great and glorious years in Columbia. I'm thankful for the experience.

- Warren Heffron, MD '62

JACK MANTELL, MD '62, lives in Layton, Utah, with his wife, Rita. They have three children, six grandchildren and one great-grandchild. He retired from the practice of internal medicine in 2001 and has completed his bucket list.

BEST MEMORY @ MU

Shaving cream fights in the dorm; ball sessions; "Green Door of Shack" song

- Jack Mantell, MD '62

ROBERT BERKOWITZ, MD '67, lives in Toms River, N.J., with his wife, Arlene. They have two children and two grandchildren. He is still practicing psychiatry and is a lifetime fellow of the American Psychiatric Association.

DONALD BLITZ, MD '67, lives in Bloomfield, Mich., with his wife, Bobbie. They have two children and three grandchildren. He recently enjoyed a trip to Antarctica and has become a private pilot.

RON BOPP, MD '67, and his wife, Mary Jo, live in Bradenton, Fla. They have six children and three grandchildren.

DAVID BRILL, MD '67, lives in Chambersburg, Pa., with his wife, Elizabeth. He retired from radiology and nuclear medicine in 2011. He ran more than 20 marathons between the ages of 40 and 50 and enjoys working out, reading and preparing for numerous weekly Bible study sessions.

LAWRENCE ALAN CALLAWAY, MD '67, lives in Hanover, N.H., with his wife, Barbara. They have two children and one grandchild. He is a retired pathologist.

RICHARD FIESTER, MD '67, lives in Cedar Rapids, Iowa, with his wife, Janice. He is retired.

MARSHALL FITZ, MD '67, lives in New Orleans with his wife, Pat. They have three children and seven grandchildren. He is semi-retired and enjoys volunteering as a psychiatrist two days per week. He has traveled to China, Turkey, Israel, Italy, Spain and Algeria.

EDWARD GLENN III, MD '67, lives in Louisiana, Mo., with his wife, Patricia. They have five children and six grandchildren. He is retired and enjoyed serving as a Boy Scout leader for 20 years in his community.

CHARLES HARDY, MD '67, lives in Rocheport, Mo., and is retired.

CHARLES LUETJE, MD '67, lives in Olathe, Kan., with his wife of 53 years, Sandra. He retired from neurotology in 2014 with more than 50 authored publications to his name. They have three children and 12 grandchildren.

BEST MEMORY @ MU

I married just before starting my second year of medical school. I would not trade anything in my life for a different situation.

- Charles Luetje, MD '67

LARRY MARTI, MD '67, lives in Rolla, Mo., with his wife of 58 years, Patsy. They have five children, 23 grandchildren and 13 great-grandchildren. He retired in 2017 after serving 40 years as an orthopaedic surgeon in Rolla. He looks forward to the annual harvest of his family's blueberry patch with multiple generations of children and grandchildren. In his retirement, he plans to travel more and fly his plane around the Ozarks.

NANCY PURCELL, MD '67, lives in Renton, Wash., with her husband, Dr. Clyde Medlock, a retired pediatrician. They have two children and four grandchildren. She retired from internal medicine practice in 2013. She enjoys gardening, hiking, biking, piano and travel. She helps lead a public gardening project that serves to donate its crop to the local food bank.

SUE SHERROD, MD '67, lives in Dallas with her wife, Judith Hammett.

JUDITH THARP, MD '67, lives in Farley, Mo. She has enjoyed the practice of emergency medicine, prison medicine, occupational medicine and family medicine during her career. She remains in practice and has five children, 13 grandchildren and one great-grandchild.

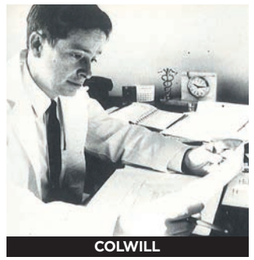
'70s

MARJORIE SLANKARD, MD '71, has retired from Columbia University as a professor emeritus of medicine.

WILLIAM BASKIN, MD '72, lives in Rockford, Ill., with his wife, Leah. He retired in 2010 after 33 years of gastroenterology practice. He was one of the founders of Rockford Gastroenterology Associates. He is a Level III handbell ringer, has enjoyed leading several bass sections in a concert choir and also serves as a literary tutor.

KENNETH ELLINGWOOD, MD '72, is a radiation oncologist and lives in Mobile, Ala., with his wife, Mary Lea. They have two children and one grandchild. He was the director of the University of South Alabama Cancer Center from 1985 to 2005 and contributed to the design, construction and staffing of multiple cancer treatment centers from 1978 to today. He enjoys practicing medicine and serving as a regional expert on head and neck cancers.

BEST MEMORY @ MU



COLWILL

Austin Tinsley, a great friend, and Jack Colwill, assistant dean and a great mentor and friend

- Kenneth Ellingwood, MD '72

PHIL FREEDMAN, MD '72, lives in Edwards, Colo., with his wife, Beverly. He is retired from family and emergency medicine.

ROBERT LOGEL, MD '72, lives in Chapel Hill, N.C., with his wife, Gene. They have three children, one of whom is also an orthopaedic surgeon, and five grandchildren. He retired from orthopaedic surgery in 2014 and has enjoyed many hobbies since then, including volunteering, traveling and spending more time with family.

GARY MUELLER, MD '72, and his wife, Dr. Carolyn Mueller, continue to split their time between homes in Brentwood, Tenn., and Austin, Texas. Carolyn has retired from her position as professor of nursing at the University of Texas at Austin, and they now have more time for travel and volunteer activities such as providing medical staffing for the Boy Scouts of America and attending alumni events in Columbia. They especially enjoy meeting MU medical students who receive scholarship support from the Gary L. Mueller, MD, and Carolyn R. Mueller, PhD, RN, Honors College-Medical School Scholarship Endowment that the couple established in 2009.

JACK O'HANDLEY, MD '72, lives in Hilliard, Ohio, with his wife, Hannah, who is a pediatric nurse and assistant professor at the Mount Carmel College of Nursing. They have four children and eight grandchildren. He serves as medical director of Mount Carmel Community Outreach and has received numerous honors for his contributions to medical education. This year, he received the Ohio Family Medicine Educator of the Year Award from the Ohio Academy of Family Practice. He enjoys running, and in 2012 he placed first in his age group (70-74) at the Columbus Half Marathon with a time of 2:01:54.

BEST MEMORY @ MU

I remember life in the dorm during the first year with John Webb, Bruce Rau, Jim Seymour and Ed Ailor.

- Jack O'Handley, MD '72

J. REGAN THOMAS, MD '72, lives in Chicago with his wife, Rhonda. They have three children and one grandchild. He is the Mario D. Mansueto Professor & Head of the Department of Otolaryngology — Head and Neck Surgery at the University of Illinois. He has led three organizations in his field — the American Academy of Facial Plastic and Reconstructive Surgery, the American Board of Facial Plastic and Reconstructive Surgery, and the American Academy of Otolaryngology — Head and Neck Surgery and has authored more than 200 scientific papers and publications, including six textbooks. He enjoys collecting art, power boating on Lake Michigan and the Lake of the Ozarks and snow skiing. Best memory of MU: The friendships that developed with classmates, which have persisted for 45 years.

FRANK TITTERINGTON, MD '72, lives in Fairway, Kan., with his wife, Barbara. They have four children and seven grandchildren. He enjoys practicing internal medicine.

BEST MEMORY @ MU

Raising money for a goat for a lactose-intolerant patient in Human Ecology

- Frank Titterington, MD '72

JOHN BEST, MD '77, is a cardiologist and lives in Columbia, Mo., with his wife, Tracy. They have three children and two grandchildren. He served as the mayor of Bolivar, Mo., from 2011-17 and enjoyed returning to Mizzou to play trombone in the Alumni Band during Homecoming 2016.

STEPHEN COHLE, MD '77, is a forensic pathologist and chief medical examiner for Kent County, Mich., and has served on the board of directors for the Society for Cardiovascular Pathology. He lives in Byron Center, Mich., with his wife, Mary. They have three children and five grandchildren. He enjoys traveling and has been to Cuba. He plays chess and likes bicycling.

R. JACK GILLISPIE, MD '77, lives in Kimberling City, Mo., with his wife, Donna. He practices family medicine part time. They have three children and three grandchildren.

R. STEPHEN GRIFFITH, MD '77, lives in Kansas City with his wife of 43 years, Nora. They have four children and one grandchild. He has served as a family medicine physician at Truman Medical Center Lakewood for more than 30 years and during that time has served as associate chief medical officer, program director of the Family Medicine Residency Program and chair of the Department of Community & Family Medicine at the University of Missouri-Kansas City.

LADONNA IMMKEN, MD '77, is a physician specializing in medical genetics. She lives in Austin, Texas, with her husband, Charles Cole. They have one child.

DAVID LIONBERGER, MD '77, is an orthopaedic surgeon and lives in Houston with his wife, Janet. They have two children and four grandchildren.

JOHN MARSHALL, MD '77, is a gastroenterologist and professor of medicine at the University of Missouri School of Medicine. He lives in Columbia, Mo., with his wife, Carolyn.

RODNEY MCFARLAND, MD '77, lives in Grove, Okla., with his wife, Kathy. They have four children and six grandchildren. He accomplished 35 years of family medicine practice in one location with one medical group and retired in 2015. He established an addiction/recovery center in Neosho, Mo., and has served as a board member of Freeman Health System in Joplin for more than 20 years. He enjoys practicing medicine in a volunteer setting, water skiing and travel.

BEST MEMORY @ MU

MCFARLAND

GILLISPIE

The first day when a "Hillbilly" (Jack Gillispie) met a "Berkeley Hippie" (me)

- Rodney McFarland, MD '77

FRANK PURVIS, MD '77, lives in Warsaw, Mo.

GARY THOMAS TASH, MD '77, lives in St. Louis with his wife, Sharon. Best memory of MU: The stories Leo Kramer told and stories about him, his unexplained absences, floating down the Missouri River to run a carnival for a sick friend. Living in the river bluff caves and learning to make arrowheads.

PAUL VANDIVORT, MD '77, is a psychiatrist and lives in Des Peres, Mo., with his wife, Linda. They have two children and two grandchildren.

DOUGLAS WOOD, MD '77, lives in Rochester, Minn., with his wife, Julia. He is medical director of the Center for Innovation at Mayo Clinic and is a practicing cardiologist at Mayo Clinic. He previously served as vice chair of the Department of Internal Medicine and chair of the Division of Health Care Policy and Research at Mayo. He has also served on the Governor's Health Care Reform Task Force and has led multiple health-reform efforts in Minnesota.

'80s

ARTHUR FREELAND, MD '82, is a family medicine physician and lives in Independence, Mo., with his wife, Kelly. They have three children. He served as president of the Missouri Academy of Family Physicians from 2009-10 and is the recipient of the Boy Scouts of America Silver Beaver Award.

RAYMOND HU, MD '82, is an internal medicine physician and lives in St. Charles, Mo., with his wife, Tina. They have four children, all Mizzou graduates, and five grandchildren with two more on the way.

BEST MEMORY @ MU

Football Saturdays; Déjà Vu; four years of laughing and crying with the nicest 100 people; but most of all, meeting my wife at Mizzou

- Raymond Hu, MD '82

HARVEY MOSKOVITZ, MD '82, lives in Sebastopol, Calif., with his wife, Pam. They have two children and one grandchild. He retired from orthopaedics in 2014 and enjoys camping, traveling and gardening.

NANCY SEIBOLT, MD '82, lives in Kansas City and is studying at Creighton University to earn a master's in Christian spirituality. She retired in April 2016 from the practice of family medicine and hospice and palliative care and is now an Ignatian spiritual director. She has two West Highland White Terriers named Idgie and Rhetta, nine nephews and nieces and 19 great-nieces and nephews. She enjoys cooking, mixed media art and staying out of rush-hour traffic.

MARK STACY, MD '86, was named dean of the Brody School of Medicine at East Carolina University and assumed his duties Sept. 1. He also serves as senior associate vice chancellor for medical affairs for the Division of Health Sciences and will hold a tenured professorship in Brody's Department of Internal Medicine. He previously served as vice dean for clinical research at Duke University School of Medicine.

ALAN FLEISCHER, MD '87, lives with his wife of 28 years, Anne, a professor of occupational therapy, in Lexington, Ky. They have three children. He spent 25 years as a dermatologist working in academic medicine at Wake Forest University and the University of Kentucky. He is now the medical director at AbbVie Inc.

RALPH SCHMITZ, MD '87, is a family medicine physician and lives in Monett, Mo., with his wife, Geri.

'90s

MARK BRIESACHER, MD '92, is chief physician executive of Intermountain Healthcare and president of Intermountain Medical Group. He lives in Salt Lake City with his wife, Lori. They have three children.

ANN MURPHY, MD '97, is a family medicine physician and lives in Independence, Mo., with her husband, Robert. They have three children.

'00s

AARON ELLISON, MD '02, is a family medicine and sports medicine physician and lives in Concord, N.C., with his wife, Raycinia Ellison, a family medicine physician. They have two children.

KURRE LUBER, MD '02, practices orthopaedic surgery and sports medicine and serves as a team physician for the University of Mississippi. He lives in Oxford, Miss., with his wife, Tara. They have four children.

SUBMIT A CLASS NOTE! Share your achievements with classmates by visiting **medicine.missouri.edu/alumni** and clicking the "Share News" link, or contact Laura Gerding, director of alumni affairs, at **573-882-6949** or **gerdingla@msissouri.edu**.

JAMIE MCGINNESS, MD '02, lives in Shiloh, Ill., with his wife, Jackie. Together, they opened a private practice dermatology and Mohs surgery clinic in September 2017. They have four children.

KARI MARTIN, MD '07, is a pediatric dermatologist and lives in Columbia, Mo., with her husband, Jeff. They have five children. She has served as the program director for MU's Dermatology Residency Program and was selected for the American Academy of Dermatology's Academic Dermatology Leadership Program.

BEST MEMORY @ MU

Small group study time; studying for STEP 1. It seems the hardest times stand out as the fondest because we were all going through it together.

- Kari Martin, MD '07

KRISTEN SANFILIPPO, MD '07, lives in St. Louis with her husband, Paul Reynolds. They have three children. She completed a residency in internal medicine at University of Pittsburg Medical Center in 2010 and a hematology oncology fellowship at Washington University in St. Louis in 2013, where she also earned a Master of Population Health Science degree. She holds a K01 Mentored Research Scientist Career Development Award from the NIH and has a research interest in multiple myeloma and venous thromboembolism.

JONATHAN SEIGEL, MD '07, lives in Raleigh, N.C., and is a neonatologist. He completed a residency in pediatrics at the University of North Carolina Chapel Hill in 2010 and a neonatal-perinatal fellowship at Duke University in 2013. He received a master of management and clinical informatics degree in 2012 from Duke.

RACHEL SHAKOFSKY, MD '07, completed a residency in pediatrics at St. Louis Children's Hospital in 2010. She lives in St. Louis with her husband, Ryan, and they have three children.

'10s

JENA SWINGLE, MD '13, completed her OB-GYN intern year at the Naval Medical Center in San Diego. Then she was assigned a three-year tour of duty as a flight surgeon for a helicopter squadron at Marine Corps Air Station Miramar. She traveled with her squadron to Okinawa and the Philipines. In July, she returned to her OB/GYN residency at the Naval Medical Center in San Diego.

IN MEMORIAM

CHRISTOPHER BOSCHE, MD '99, died Sept. 12, 2017, in St. Louis. Dr. Bosche, who led a life of service, died from an illness he contracted as a first responder on Sept. 11, 2001.

DAVID BYRNE, MD RES '74, a dermatologist and dermatopathologist, died on June 15, 2017, in Bloomington, Ind.

GRETCHEN COLLINS, MD BS MED '53, family medicine physician, longtime Red Cross and Girl Scouts supporter and past president of the Samaritan Hospital Staff and chairman of MU's Jefferson Club, died July 19, 2017, in Macon, Mo.

THEODORE CARL DEFEO, JR., MD '64, a pathologist, world traveler and underwater photography enthusiast, died June 26, 2017, in Overland Park, Kan.

JEROLD FADEM, MD '58, who served Orlando Regional Medical Center for 55 years in the practice of neurology and internal medicine, died May 4, 2017, in Orlando, Fla.

CLARENCE "SKIP" FENNEWALD, MD '76, died May 2, 2016, in Hixson, Tenn., where he had a dermatology practice for more than 30 years.

KENNETH KAYS, MD '62, a radiologist, died July 3, 2017, in Columbia, Mo.

JANE KIFF, MD '92, a pediatrician, died May 25, 2017, in Sandwich, Mass.

OTIS MOSELEY, MD '55, a physician who played an integral role in bringing Lake Regional Hospital to the Lake of the Ozarks, died May 25, 2017, in Osage Beach, Mo.

FRED NELSON, MD BS MED '49, a radiologist who was instrumental in establishing Tipton General Hospital in Tipton, Mo., and a Purple Heart recipient for his service in the U.S. Army in the Battle of the Bulge, died June 22, 2017, in Nashville, Ga.

SEMON SANDVEN, MD BS MED '49, a longtime internist in Santa Monica, Calif., died July 9, 2017.

ELEANOR SHAHEEN BRADDOCK, MD, professor emeritus of child health and former associate chairman of child health at the MU School of Medicine, died in October 2017 in Columbia. After retiring from pediatrics in 1991, Dr. Shaheen Braddock embarked on a second career as a chaplain for MU Health Care.

EARL "JACK" WIPFLER, MD BS MED '53, died Aug. 9, 2017, in Gulf Shores, Ala. Dr. Wipfler and his wife established the Jack and Shirley Wipfler Auditorium in the School of Nursing. Earl Wipfler practiced as a vascular and general surgeon in St. Charles, Mo., for 25 years and for another 10 years as an emergency department physician. Upon retirement, he helped found the St. Charles Volunteers in Medicine free clinic, which provides care for the uninsured.

MICHAEL WULFERS, MD '79, a longtime family medicine physician in his community, died June 1, 2017, in Cape Girardeau, Mo

MICHAEL SHERMAN, MD, PhD, professor emeritus of child health, died Sept. 22 following complications from a stroke.

A well-respected scientist and neonatologist, Sherman had expertise in microbiology, immunology, genetics and critical care of sick newborns. He had numerous peer-reviewed publications, book chapters and invited presentations nationally and internationally. He also devoted his career to the development of young students, resident physicians, fellows and faculty members.

Sherman graduated from California State Polytechnic University, San Louis Obispo, and the Medical College of Wisconsin. He completed his pediatric internship and residency at the University of Michigan Medical System and University of California-San Diego, as well as a neonatal-perinatal fellowship at University of California-Davis School of Medicine.

Sherman was strongly committed to improving the health of Eastern European infants and children and was a member of the Board of Directors of the Children's Medical Care Foundation (CMCF). In conjuction with CMCF, he helped train Polish pediatricians and neonatologists to help reduce the infant mortality rate in Poland. In 2015, he was awarded an honorary honoris causa doctorate degree by Poznan University of Medical Sciences. He was a member of Alpha Omega Alpha National Medical Honor Society and received numerous faculty teaching awards.

Sherman was born June 8, 1942, and is survived by his wife, Jan Sherman, PhD, RN, teaching professor in the Sinclair School of Nursing; three sons; two brothers; one sister; grandchildren; numerous neonatal colleagues and close friends; and five cats he called his daughters.

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61st Annual

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FRIDAY, APRIL 20, 2018
Reynolds Alumni Center, Columbia, Missouri

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