

Outlook



Washington
University in St. Louis

SCHOOL OF MEDICINE

AUTUMN 2022

Inpatient experts

How hospitalists improve outcomes



Outlook

Washington University School of Medicine
OUTLOOK.WUSTL.EDU AUTUMN 2022



MATT MILLER




COVER Hospitalist Crystal Atwood, MD, dons PPE and prepares to enter an inpatient room in January 2022. The pandemic didn't define the role of hospitalists. But, for patients, families and even other health-care providers, it did highlight the key role these specialists play in inpatient care. See page 20.

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MATT MILLER

Devyani M. Hunt, MD, a professor of orthopedic surgery and medical director of the Living Well Center, talks with patient Zach Wood about pain issues. The center focuses on lifestyle factors to address musculoskeletal health. See page 8.

FEATURES

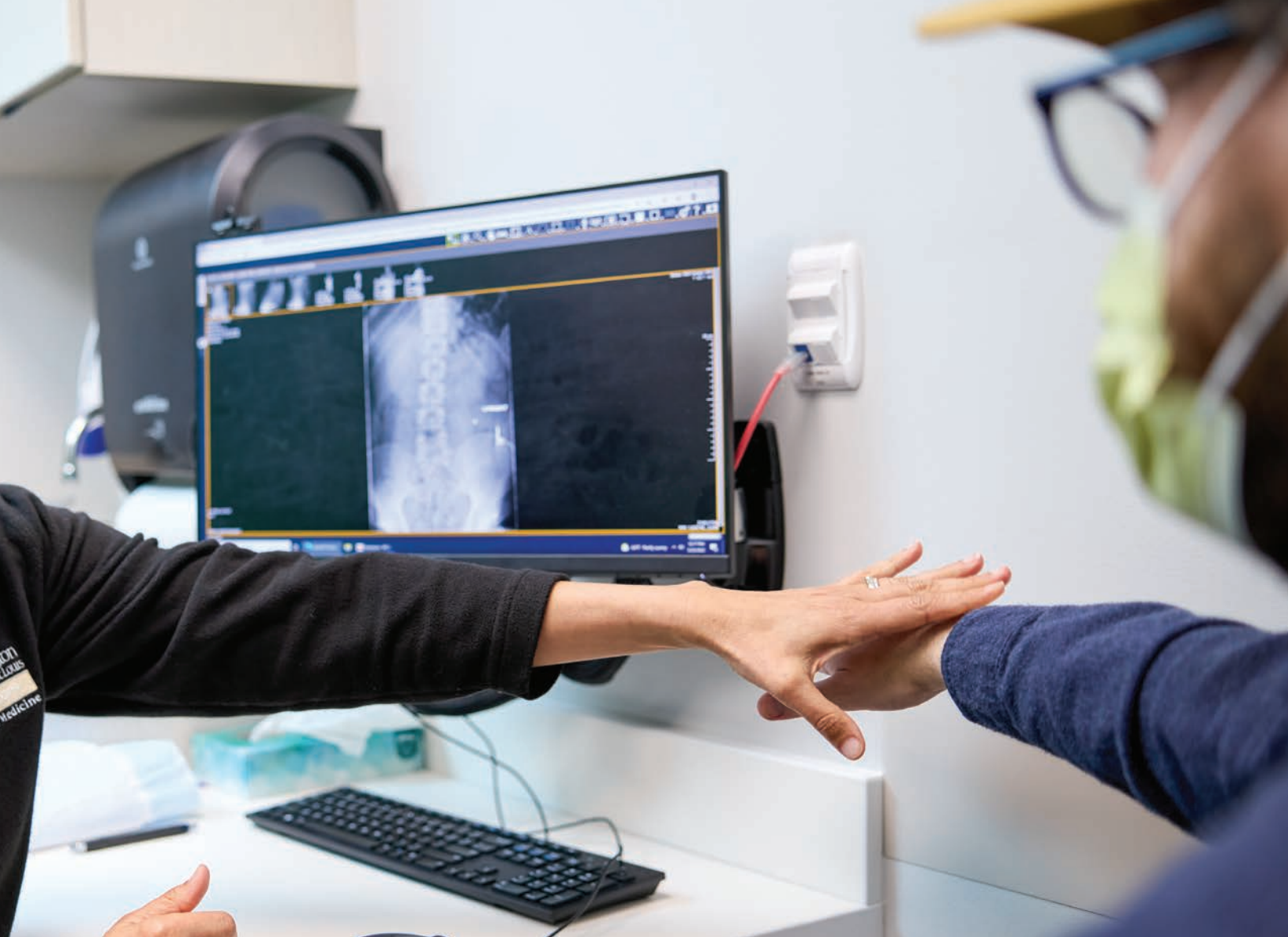
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A recent symposium celebrated the impact of the Loeb Teaching Fellows program, established in 2004 with a gift from Carol B. and Jerome T. Loeb (above). See page 27.



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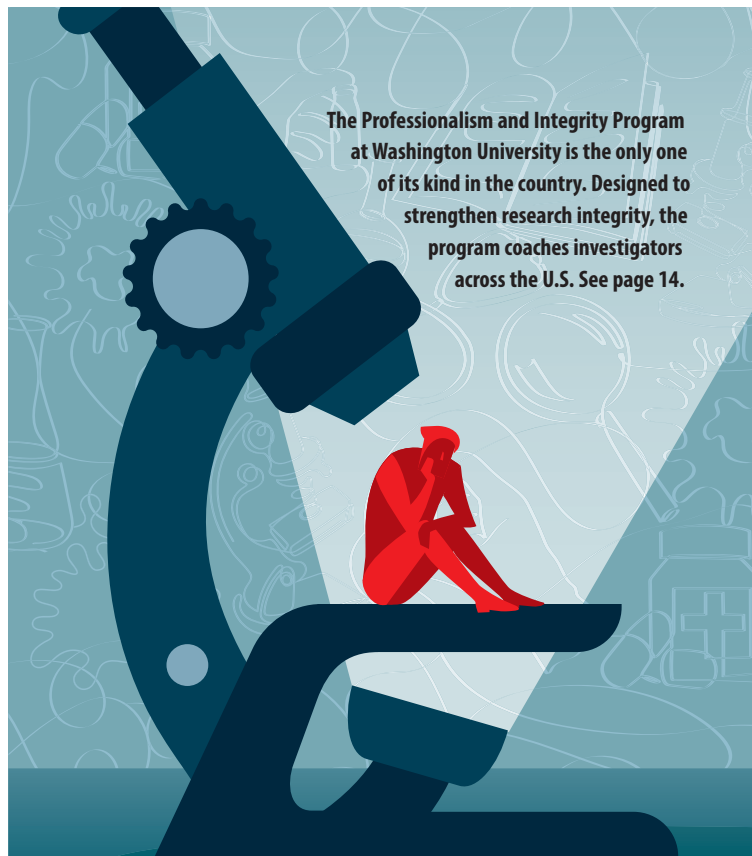
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Photos of unmasked people in this magazine were taken prior to the COVID-19 pandemic or in accordance with School of Medicine masking protocols at that time.



The Professionalism and Integrity Program at Washington University is the only one of its kind in the country. Designed to strengthen research integrity, the program coaches investigators across the U.S. See page 14.

SARA MOSER

First of its kind

Nasal COVID-19 vaccine based on WashU technology approved in India

Washington University has licensed the rights to develop, manufacture and commercialize its proprietary COVID-19 nasal vaccine in the U.S., Europe and Japan.

A nasal vaccine for COVID-19 — based on technology developed at Washington University — may soon become available in the U.S. and other countries worldwide. In September, health authorities in India approved such a vaccine for emergency use in that country, making it the world’s first approved intranasal vaccine for COVID-19. School of Medicine scientists developed the vaccine in collaboration with Bharat Biotech International Limited in India, a global leader in vaccine innovation and a developer of vaccines for infectious diseases.

Later in September, the university licensed the rights to develop, manufacture and commercialize its proprietary COVID-19 vaccine in the U.S., Europe and Japan to

Ocugen Inc., a U.S.-based biotechnology company focused on developing and commercializing novel gene and cell therapies and vaccines.

A nasal vaccine is thought to provide greater protection against the virus than current injectable vaccines, which help prevent severe illness and death but do little to prevent infections. The advantage of the nasal vaccine is that it delivers a boost to immunity in the nose and upper respiratory tract, right where the virus enters the body, thereby potentially preventing infections altogether.

The investigational vaccine was co-developed in the laboratories of David T. Curiel, MD, PhD, the Distinguished Professor of Radiation Oncology, and Michael S.

Diamond, MD, PhD, the Herbert S. Gasser Professor of Medicine, of molecular microbiology and of pathology & immunology. Curiel and Diamond started collaborating in early 2020, as the virus that causes COVID-19 first began its wildfire-like spread across the globe.

“Despite the many challenges of a global pandemic, our accomplished, dedicated faculty have continued to push the boundaries of discovery,” said Detric Carter, PhD, the vice chancellor for innovation and chief commercialization officer. “The licensing of the nasal vaccine technology highlights the culture of innovation we’re developing at Washington University.”

Protein ramps up anti-tumor activity

Advances in cellular immunotherapy that spur genetically modified T cells to attack cancer cells have revolutionized the treatment of certain blood cancers. Six such CAR-T cell therapies are approved by the Food and Drug Administration to treat certain types of leukemia, lymphoma and multiple myeloma. Still, some patients' tumors don't respond well to these therapies, and many patients who do well initially later see their cancers return.

A School of Medicine study shows that additional treatment with an immunity boosting protein called interleukin 7 (IL-7) after an infusion of these genetically modified T cells causes the cancer-fighting CAR-T cells to grow in number and become more effective at killing tumor cells.

The mouse study suggests promise for a phase 1 clinical trial at Siteman Cancer Center at Barnes-Jewish Hospital and Washington

University School of Medicine. The clinical trial is investigating a long-acting genetically modified type of IL-7 in conjunction with CAR-T cells targeting CD19, a B cell antigen in patients with relapsed or refractory diffuse large B cell lymphoma.

"We're interested in IL-7 because we know it is a major

CAR-T cells infiltrate a lymphoma tumor in a mouse. Tumor cells are shown in blue, tumor-attacking CAR-T cells in green and immune cells called macrophages in red.

driver of T cell expansion," said senior author John F. DiPersio, MD, PhD, the Virginia E. & Sam J. Golman Professor of Medicine and director of the Division of Oncology. "The body makes IL-7 naturally to ramp up the number of T cells when a person gets sick, for example. When we give a long-acting type of IL-7 to tumor-bearing immunodeficient mice soon after CAR-T cell treatment, we see a dramatic expansion of these CAR-T cells greater than ten-thousandfold compared to mice not receiving IL-7. These CAR-T cells also persist longer and show dramatically increased anti-tumor activity."

 Nature Communications | June 13, 2022

To learn more about stories in Pulse, go to medicine.wustl.edu/news



The School of Medicine is joining the National Institutes of Health (NIH)'s Bridge2AI program. One of the first projects involves building a database of diverse human voices and harnessing the tools of AI and machine learning to train computers to identify diseases based on characteristics of the human voice.

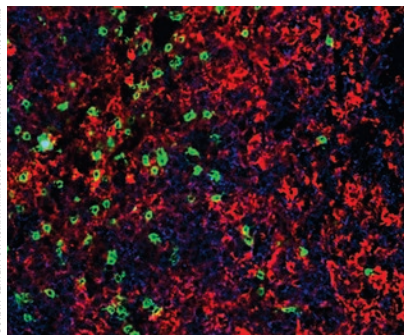
Expanding use of AI tools in biomedical research

Imagine if one day in the future, doctors could diagnose throat cancer, Alzheimer's, depression or other diseases based on the sound of a patient's voice. To help make that a reality, the School of Medicine is joining the National Institutes of Health (NIH) Bridge2AI program, an estimated \$130 million initiative intended to expand the use of artificial intelligence (AI) in biomedical and behavioral research.

One of the first projects involves building a database of diverse human voices and harnessing the tools of AI and machine learning to train computers to identify diseases based on characteristics of the human voice. This effort — called Voice as a Biomarker of Health — will bring together researchers from 12 institutions in North America, including Washington University, to build the database, which will be ethically sourced and also protect patient privacy.

"There is evidence that well-designed computer models can predict who has dementia or cancer, for example, based on voice recordings, which would then supplement additional methods of diagnosis," said Philip R.O. Payne, PhD, the Janet and Bernard Becker Professor, chief data scientist and director of the Institute for Informatics.

Washington University and Oregon Health & Science University will co-lead a skill and workforce development core for the national project. The core will focus on training investigators — including scientists from academic institutions, industry, government and even citizen scientists — from all over the country to access and use the voice data for research. Any researcher seeking to learn how to use the data set will receive an individualized education plan with much of the learning delivered in a virtual format and then supported with one-on-one mentoring.





Drugs may slow kidney disease progression

Diabetes is the leading driver of kidney disease, a potentially fatal condition affecting 37 million Americans, many of whom are unaware that their kidneys are ailing. Treatments for end-stage disease primarily are limited to dialysis and kidney transplant.

A mouse study led by the School of Medicine suggests that combining SGLT2 inhibitors — a newer class of diabetes medications that lowers blood sugar — with older diabetes drugs may help to slow the progression of diabetic kidney disease.

Commonly prescribed SGLT2 inhibitors include dapagliflozin (Farxiga), empagliflozin (Jardiance) and canagliflozin (Invokana). The latter is made by Janssen Pharmaceuticals, whose scientists collaborated on this study.

“SGLT2 inhibitors have had remarkably positive effects on kidney disease in diabetes, the best effects that we have seen in decades,” said senior author Benjamin D. Humphreys, MD, PhD, director of the Division of Nephrology at Washington University. “By studying mice, we found that these drugs may work even better to protect the kidneys when combined with other diabetes drugs, and with this approach we should be able to achieve better outcomes in patients because the drugs act in a synergistic way on the kidneys, at least at the cellular level.”

The researchers analyzed how mouse kidneys respond to five diabetes treatment regimens prescribed to patients. The study found that the combination of SGLT2 inhibitors with Lisinopril had better protective effects on the kidney than any of the single therapies.

 Cell Metabolism | June 15, 2022

Rogers to lead child psychiatry division



Cynthia E. Rogers, MD

Cynthia E. Rogers, MD, has been named the Blanche F. Ittleson Professor of Psychiatry and director of the William Greenleaf Eliot Division of Child & Adolescent Psychiatry.

Rogers oversees the School of Medicine’s clinical and research efforts in child and adolescent psychiatry. She also is child-psychiatrist-in-chief at St. Louis Children’s Hospital.

Rogers directs the Perinatal Behavioral Health Service in the Department of Psychiatry. She also is director of the St. Louis Children’s Hospital Neonatal ICU Behavioral Health Clinic, where she provides care for children born prematurely who go on to develop psychiatric issues. Her research has focused on studies of the social determinants of health on brain development in infants.

Rogers is beginning a three-year term as an Emerging Leaders in Health and Medicine scholar, a program that involves 10 scholars chosen by the National Academy of Medicine to address topics shaping the future of health and medicine.

Rogers succeeds John N. Constantino, MD, who has joined the Emory School of Medicine faculty.



GIVING A HAND: Two years after his stroke, a physical therapist told Mark Forrest (above) he would not gain any more function of his right hand. “I had a good cry, and said, ‘I’m going to prove everybody wrong.’” Then, he participated in research involving the IpsiHand, a breakthrough device developed by Washington University neurosurgeon Eric Leuthardt, MD. The device helped him recover some use of his right hand — enough to build himself a fishing boat. Forrest shared his story on the school’s Show Me The Science podcast, available at medicine.wustl.edu/news/type/podcast.

COVID-19 tied to long-term brain problems

People who have been infected with the COVID-19 virus are at increased risk of developing neurological conditions in the first year after the infection, new research shows. Such complications include strokes, cognitive and memory problems, depression, anxiety and migraine headaches, according to a comprehensive

analysis of federal health data by researchers at the School of Medicine and the Veterans Affairs St. Louis Health Care system.

Additionally, the post-COVID brain is associated with movement disorders, from tremors and involuntary muscle contractions to epileptic seizures, hearing and vision abnormalities, and balance and coordination difficulties, as well as other symptoms similar to what is experienced with Parkinson's disease.


"We evaluated 44 brain and other neurologic disorders among both nonhospitalized and hospitalized patients, including those admitted to the intensive care unit," said senior author Ziyad Al-Aly, MD, a clinical epidemiologist at Washington University. "The results show the devastating long-term effects of COVID-19. These are part and parcel

of long COVID. The virus is not always as benign as some people think it is."

Overall, COVID-19 has contributed to more than 40 million new cases of neurological disorders worldwide, Al-Aly said.

"We're seeing brain problems in previously healthy individuals and those who have had mild infections," he said. "It doesn't matter if you are young or old, female or male, or what your race is. It doesn't matter if you smoked or not, or if you had other unhealthy habits or conditions."

The researchers analyzed about 14 million de-identified medical records in a database maintained by the U.S. Department of Veterans Affairs.

 Nature Medicine | Sept. 22, 2022



Finding biomarkers of neurodegeneration

A new School of Medicine center aims to accelerate research into biomarkers of neurodegenerative conditions such as Huntington's and Parkinson's diseases, amyotrophic lateral sclerosis (ALS), multiple sclerosis (MS) and the so-called tauopathies, a group that includes Alzheimer's disease along with rarer diseases such as frontotemporal dementia, corticobasal syndrome and progressive supranuclear palsy. The Tracy Family Stable Isotope Labeling Quantitation Center for Neurodegenerative Biology (Tracy Family SILQ Center) helps researchers discover, study and validate biomarkers of such diseases, with a goal of identifying drug targets and creating diagnostic and prognostic tests.

Many neurodegenerative diseases are characterized by the gradual accumulation of toxic clumps of certain proteins in the brain. The specific protein involved varies by disease. By attaching a label to key proteins in the brain, researchers can track their production and clearance, and identify the factors that influence turnover. Further, by using labeled proteins in samples from other parts of the

body such as cerebrospinal fluid or blood, researchers can also make highly precise measurements of proteins associated with disease and track how they change over time and under specific conditions.

"Many different investigators are interested in using a labeled-protein approach to studying Parkinson's, ALS, MS, frontotemporal dementia and more," said Randall J. Bateman, MD, the Charles F. and Joanne Knight Distinguished Professor of Neurology and the center's director. "But using this approach is not trivial as it requires considerable resources in terms of specialized equipment and expertise."

The Tracy Family SILQ Center contains seven mass spectrometers and several robotics units. School of Medicine researchers who join the center gain access to its resources and funding, and the option to propose research projects and collaborate



Nicolas Barthélemy, PhD, an assistant professor of neurology, loads a sample into a mass spectrometer. Barthélemy uses mass spectrometry as part of his work at the university's new Tracy Family SILQ Center for Neurodegenerative Biology.

with center faculty. The center is supported by \$10 million in gifts and grants from the Tracy Family, Richard Frimel and Gary Werths, the GHR Foundation, David Payne, the Willman Family and other donors brought together by The Foundation for Barnes-Jewish Hospital.



UP-CLOSE LOOK: With a little more than a year of construction to go, the Neuroscience Research Building on the Medical Campus is taking shape day by day. Several department heads and others with ties to the building project recently toured the site, guided by employees of McCarthy Building Companies Inc. (Above) Jin-Moo Lee, MD, PhD, head of the Department of Neurology, snaps some pictures. Located next to the Cortex Innovation Community, the 609,000-square-foot facility represents a new center of gravity for the campus.

BJC investigator appointed

Polina V. Lishko, PhD, a noted molecular biologist and entrepreneur, has been named a BJC Investigator at the School of Medicine. Lishko, whose innovative investigations of molecular mechanisms of bioactive lipid signaling have advanced scientific understanding in fields as varied as reproductive biology, vision and neurodegeneration, joins the Department of Cell Biology and Physiology.



Polina V. Lishko, PhD

Lishko is an associate professor of molecular and cellular biology at the University of California, Berkeley. Her appointment at Washington University begins Dec. 1.

Lishko is best known for basic reproductive biology research that has advanced understanding of male and female infertility and could lead to alternatives to hormonal contraceptives. In 2018, Lishko co-founded the startup company YourChoice Therapeutics. While she has since stepped away from the company, YourChoice Therapeutics continues to build on her research to develop temporary, nonhormonal contraceptives.

In the field of neurodegeneration, she is studying whether the drop in sex hormones that occurs at menopause changes fluid flow and waste removal in the brain, and contributes to older women's increased risk of Alzheimer's disease. In vision, she is developing an eyedrop to prevent age-related macular degeneration. Lishko has co-founded another startup company, BioTock, to move this translational research from bench to bedside.

Lishko's husband, Yuriy Kirichok, PhD, will join the Department of Biochemistry and Molecular Biophysics. He is a professor of physiology at the University of California, San Francisco.

Gut bacteria mine dietary fiber byproducts

A recent study demonstrates that certain human gut microbes can mine dietary fiber to extract nutrients that otherwise would remain inaccessible to the human body. The study illustrates how the fiber byproducts of food production — such as rinds, peels and seeds of fruits and vegetables — may be an untapped source of beneficial biomolecules.



Gut microbes can extract nutrients from fiber byproducts, such as the pulp discarded after orange juice production.

“These byproduct streams could represent a sustainable and scalable source of previously uncharacterized biomolecules, and of known biomolecules that are otherwise difficult to obtain in quantity,” said senior author Jeffrey I. Gordon, MD, the Dr. Robert J. Glaser Distinguished University Professor and director of the Edison Family Center for Genome Sciences and Systems Biology.

The researchers found that the fiber byproduct of orange juice manufacturing contains a molecule similar in structure to serotonin, but it is locked away in the fiber. The molecule, when liberated by specific gut bacteria, shows beneficial metabolic effects in mice.

The approach suggests a framework for identifying affordable, sustainable fiber sources and their associated nutrients that would otherwise be discarded as waste.

 Cell | June 27, 2022

Orthopedic division head named

Lindley B. Wall, MD, a professor of orthopedic surgery and a member of the Department of Orthopaedic Surgery's hand and microsurgery service, has been named director of the Division of Pediatric and Adolescent Orthopaedic Surgery. She also has been named orthopedic surgeon-in-chief at St. Louis Children's Hospital.



Lindley B. Wall, MD

Wall is a national leader in the treatment of pediatric hand and upper-extremity congenital deformities and spasticity conditions. She also treats fractures and complex nerve injuries affecting the upper limbs. Wall has advanced the understanding of and therapies for these conditions through qualitative research focused on patient and caregiver expectations in these unique populations.

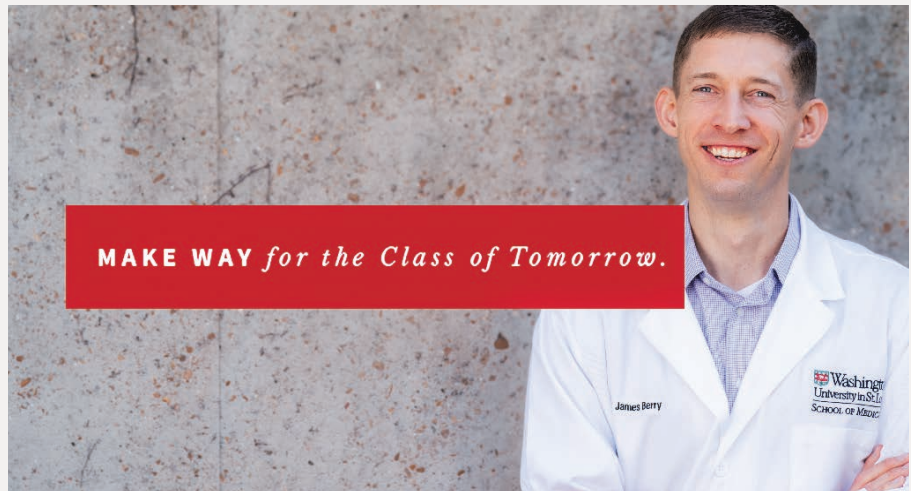
Wall succeeds Charles A. Goldfarb, MD, a professor of orthopedic surgery who now is serving as the department's executive vice chair.

Initiative will increase support for students

On Oct. 6, Washington University launched a major effort to make its world-class educational programs more accessible to all students. Called Make Way: Our Student Initiative, the endeavor aims to build financial resources for undergraduate scholarships; graduate student support, including medical school scholarships and fellowships; and a best-in-class student experience.

“With this initiative, we can ensure the world’s brightest students know that WashU is within their reach, regardless of their income level or previous opportunities,” said Chancellor Andrew D. Martin. “And not only will we help them get here, we’ll also help them thrive here, so they will leave prepared to make their unique mark on the world.”

Concerns about debt play a key role in students’ decisions about where to attend



WHITNEY CURTIS/WASHINGTON UNIVERSITY

medical school, what specialty to pursue and whether to seek additional training in research, public health and other areas. Alumni and friends who contribute to Make Way will help remove financial barriers that

prevent the most talented students and trainees from fulfilling their potential as leaders in medicine and biomedical science.

To learn more, visit makeway.wustl.edu/gradstudents.

New approach to clearing brain’s toxic waste

A recent School of Medicine study has found a new druggable pathway that potentially could be used to prevent Alzheimer’s dementia.

In this study, researchers found a way to increase clearance of waste products from the brains of mice by ramping up a

genetic quirk known as readthrough. This same strategy also may be effective for other neurodegenerative diseases characterized by the buildup of toxic proteins, such as Parkinson’s disease, the researchers said.

Every once in a while, the brain protein aquaporin 4 is synthesized with an extra little tail on the end.

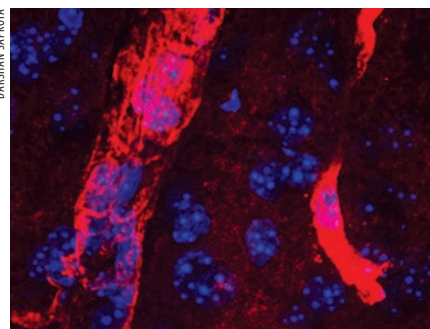
“At first, we thought it couldn’t possibly be relevant,” said senior author Joseph D. Dougherty, PhD, a professor of genetics and of psychiatry. “But then we looked at the gene sequence, and it was conserved across species. And it had this really striking pattern in the brain: It was only in structures that are important for waste clearance. So that’s when we got excited.”

Thinking that increasing the amount of readthrough might increase waste clearance, first author Darshan Sapkota, PhD — who led this study while a postdoctoral researcher

at Washington University but is now an assistant professor of biological sciences at the University of Texas, Dallas — screened 2,560 compounds for the ability to increase readthrough of the aquaporin 4 gene. He found two: apigenin, a dietary flavone found in chamomile, parsley, onions and other edible plants; and sulphaquinoxaline, a veterinary antibiotic used in the meat and poultry industries.

Further experiments showed that mice treated with either apigenin or sulphaquinoxaline cleared the Alzheimer’s protein amyloid beta significantly faster than those treated with placebos. The researchers are working on finding better drugs that increase readthrough of aquaporin 4 by testing several derivatives of sulphaquinoxaline and additional compounds.

 Brain | Aug. 24, 2022



DARSHAN SAPKOTA

An extended form of the protein aquaporin 4 (red) lines the edges of tiny blood vessels in the brain. Cell nuclei are visible in blue.

Lifestyle Medicine

Center provides *health care* rather than *sick care*

BY JIM DRYDEN

Zach Wood was in the Emergency Department with excruciating lower back pain. After imaging tests, he was sent to see a hip surgeon. Later, the hip surgeon suggested that before advancing to surgery, Wood might consider a visit to the Living Well Center at Washington University School of Medicine. Clinicians at the center could improve the likelihood that surgery would go well, the surgeon said.

Now a regular visitor to the Living Well Center, Wood receives physical therapy, medical massage, dietary counseling and other services. All of that has improved his overall health and reduced his pain. Many months after his first visit, he's beginning to think he may not need surgery after all.

The Living Well Center provides what's known as lifestyle medicine. This developing field addresses the root causes of medical problems by focusing on lifestyle choices affecting patients' health. Using evidence-based techniques, lifestyle medicine practitioners help people change their behavior in ways that might prevent, treat or even reverse cardiovascular disease, Type 2 diabetes, obesity and other chronic conditions.





Devyani M. Hunt, MD (right),
medical director of the Living Well
Center, assesses patient Zach Wood.

A good number of lifestyle-focused centers have popped up around the country, but the Living Well Center is different from most because its primary focus is in treating issues that underlie musculoskeletal health.

Wood’s case isn’t typical, in that some of his problems stem from a rare autoimmune disorder, Mixed Connective Tissue Disease. This disorder causes the body’s connective tissue, called fascia, to swell and thicken. Wood’s fascia gets extremely tight, contributing to pain in his back and hip, as well as other issues, including difficulty swallowing.

In response, Living Well Center team members developed a multipronged, targeted approach —

involving treatments and lifestyle modifications — to help alleviate inflammation and stress on his body.

“Initially, I thought I was coming to the center as a way to prepare my body for an operation,” Wood said. “Now I feel like what’s happening here is becoming more preventative. The treatments I’m receiving might mean I won’t need to have surgery.”

A lofty vision

Almost a decade ago, Heidi Prather, DO, a former orthopedics professor at the School of Medicine, began to think about creating a clinical center where patients could get their blood sugar under control, lose weight, stop smoking and take other actions to improve the odds that orthopedic treatments, such as joint-replacement surgery, would be successful.

“As clinicians, we know that if you allow patients to become active participants in their own health care, regardless of what the problem is, they do better,” Prather said.

“With the center, we have this lofty goal that patients will come to us needing, say, a knee replacement and, in addition to doing what we can to make the surgery successful, our work will result in better overall health by controlling diabetes or reducing stress, for example — just minimizing some of the problems that contribute to poor health and maximizing the behaviors that improve well-being,” she added.

It took years to develop the center’s strategy and infrastructure, but now patients flock to a suite of offices and exam rooms in one of the new medical buildings on the campus of Barnes-Jewish West County Hospital. The Living Well Center has treated more than 800 patients since it officially opened its doors in 2020, focusing primarily on four groups: candidates for musculoskeletal surgery; COVID-19 long-haulers (particularly those with fatigue and joint pain); those who want to optimize overall health; and cancer survivors. Integrated therapies can reduce the fatigue, nausea, pain, anxiety and other symptoms associated with cancer and cancer treatment.

Devyani M. Hunt, MD, a professor of orthopedic surgery, now serves as the medical director of the Living Well Center. Her subspecialty



Comprehensive model Lifestyle factors have a major impact on chronic conditions, musculoskeletal surgical and nonsurgical recovery and overall health. Living Well Center practitioners use a whole-body approach and evidence-based techniques to guide patients through behavioral changes that promote well-being.



is physical medicine and rehabilitation, also known as physiatry, which applies nonsurgical treatment to musculoskeletal conditions.

“We’re very accustomed to looking at the body and how it all works together,” Hunt said. “I’m always thinking about how the hip is affecting the spine or the knee or the foot.

“Our goal really is to treat the whole patient, and with this comprehensive model, we’re demonstrating that we can improve outcomes for surgery patients and help others avoid surgery, and we can do it all in one place,” she added. “All of us went into medicine to help people, but it can be frustrating when, as a provider, you’re unable to change some of the underlying issues that are barriers to your patient’s success. Lifestyle medicine can give you the tools.”

The health professionals at the Living Well Center come from a variety of specialties. Some, like Hunt, trained in physiatry. Other specialists include a dietitian, psychologist, rehabilitation counselor, massage therapist, acupuncturist, physical therapists and a physician assistant.

Hunt said the specialists at the center work together to apply the “pillars” of lifestyle medicine. These include using food as medicine by teaching a diet consisting mainly of plant-based foods; encouraging physical activity and exercise; addressing sleep issues; managing stress and addressing anxiety and depression — problems often encountered by people who are in pain;

avoiding risky substances, such as tobacco; and encouraging positive social connections.

“One goal is to provide our patients with health care, rather than sick care,” Hunt explained.

Walking into the Living Well Center is like walking into any other clinical office in some ways, but if visitors are paying attention, they’ll notice the waiting room lights aren’t quite as bright or intense as in many doctors’ offices. Plus, along with soft music, it’s also possible to hear the chirping of songbirds coming through the speakers in the waiting area. “Part of our focus is on managing stress,” Hunt said. “That’s why we’ve tried to make a beautiful respite for patients.”

Just down the hallway is a teaching kitchen and gathering area where patients learn to cook healthier foods. Registered dietitian Nartana N. Mehta helps people improve their diets using one-on-one counseling, cooking classes and demonstrations.

“Every person is unique, and their eating plans should reflect that,” Mehta said. “We know that certain foods can contribute to inflammation while other foods can reduce it. Still other foods can help keep blood glucose levels under control. Our goal is to help people get healthier by increasing their consumption of plant foods like fruits and vegetables, whole grains and legumes to try to reduce levels of inflammation because we know that less inflammation can mean less pain.”

The gathering area doubles as a community space for patients to have shared medical appointments,

Dietician Nartana N. Mehta shows patients how to prepare three-ingredient bean burgers during a cooking demonstration at the Living Well Center at Barnes-Jewish West County Hospital.



Patient Zach Wood has found nonsurgical back pain relief through the Living Well Center. Here, medical massage therapist Amy Whitelaw treats Wood's myofascial tightness.

take group yoga or Tai chi classes. “We want patients to experience these things together because the literature tells us that if we don’t do certain activities as a community, it doesn’t really sink in, and people can’t move forward as successfully,” Hunt said.

Obesity and aging

The Living Well Center is stepping into a rapidly expanding area, as the medical community today contends with a global obesity epidemic. Obesity has a significant impact on the musculoskeletal system and is associated with both degenerative and inflammatory conditions. It is the leading preventable cause of wear-and-tear arthritis, known as osteoarthritis.

More than 800,000 people have their knees replaced each year in the U.S., with another 450,000 hip-replacement surgeries annually. In addition, some 65 million Americans report a recent episode of back pain, with about 16 million — 8% of all adults — reporting that they suffer persistent or chronic back pain. As the population ages, these numbers are continuing to trend upward.

Being overweight increases the need for joint replacement and worsens surgical complications, resulting in higher rates of infection, blood clots, component failure and dislocation. In addition,

overweight people are more likely to have diabetes, a condition that complicates wound healing, another concern when considering surgery.

People who smoke or whose blood sugar isn’t well-controlled also are at risk for health issues following joint-replacement surgery. In fact, many in need of new hips or knees are told that they first must lose weight, better control their blood sugar or quit smoking.

That’s frustrating for patients who are in pain, but it’s also frustrating for doctors when patients’ lifestyles make surgical outcomes less predictable. Hunt explained that with so many different types of health professionals under one roof, the center is able to personalize treatments and offer evidence-based therapies to improve surgical outcomes.

“If a patient comes in with a goal of getting their body ready for a hip replacement, but isn’t able to do that because their blood sugars are not well-controlled or their BMI is too high, they’ll find that we have some tools we can use to change that,” Hunt said. “We can prepare them in ways that lower their chance for infection after surgery and reduce the odds that they’ll need to come back to the hospital with a complication.”

Genny Watkins had hoped to lose a little weight before having a complicated surgery on her lower leg that involved stabilizing her ankle and lengthening her Achilles tendon. Her surgeon, Jonathon D.

Backus, MD, an assistant professor of orthopedic surgery, recommended she visit the Living Well Center in the months before her operation.

In addition to excess weight, Watkins had other underlying conditions, including an incomplete spinal cord injury. She knew that being immobilized and unable to walk for several months following surgery likely would cause her stress, so during visits to the Living Well Center, she focused on changing her diet and getting behavioral health support.

“My body mass index went down and I lost 12 pounds,” Watkins said. “I also took a Zoom class on behavior modification, and Mollie Semmer (physician assistant) helped me find a good physical therapist and psychologist. The Living Well Center team really got me prepared for a very challenging surgery.”

The center also offers massage therapy, physical therapy and acupuncture to treat pain.

“Acupuncture is less invasive and has fewer side effects than many other pain treatments,” said Chi-Tsai Tang, MD, an associate professor of orthopedic surgery, who trained as a physiatrist and later studied acupuncture with physicians in China. “It’s a perfect complement to my physical medicine and rehabilitation training.”

“Acupuncture works through various means, the main one being to release myofascial tension. It can also work through the endogenous opioid system, causing the body to release its own pain-inhibiting substances, like endorphins,” he added. “It also has been shown to cause changes in parts of the brain that are involved in the processing of pain.”

Tang explained that acupuncture often works because the various parts of the body are linked and operate together. Those types of connections underlie many of the treatments offered at the center. Diet, for example, not only affects the gastrointestinal tract, but through gut-brain connections, it also can affect mood and pain perception. Stress can increase tension and contribute to pain.

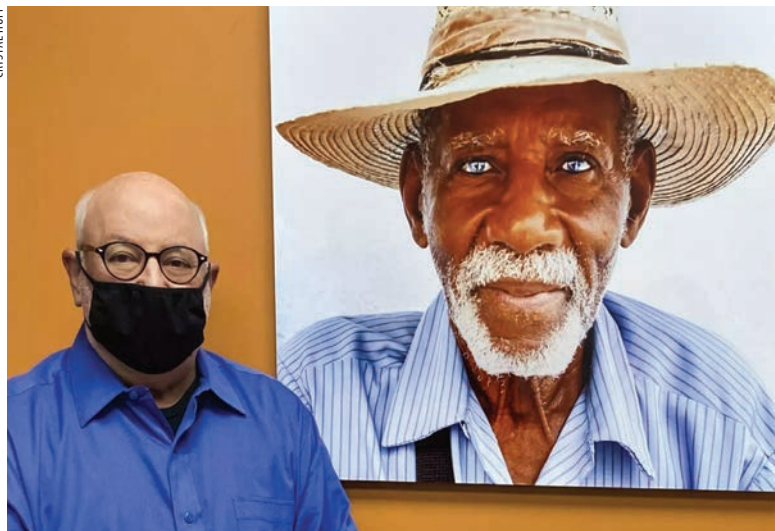
In centers that treat people with diabetes and cardiovascular disease, it’s relatively common to offer stress management, smoking cessation and diet modification. Although it’s well-established that those same issues can exacerbate musculoskeletal pain, very few centers have embraced lifestyle medicine in the treatment of musculoskeletal problems. Part of the reason is that although the links between diet and problems such as heart disease and diabetes are widely accepted, there’s not as much attention paid to the links between diet and pain in the knee or the hip.

As the center employs lifestyle medicine strategies not normally seen in an orthopedics practice, doctors there are rigorously testing its strategies.

Abby L. Cheng, MD, an assistant professor of orthopedic surgery, studies patients who come through the center’s doors and compares their results to those of patients treated using standard care models. Living Well Center patients are more likely to have diabetes or obesity than those who receive standard care, she has found. They’re also more likely to have exhausted other treatment options available to them.

But the Living Well Center now has empowered many such patients, like Zach Wood and Genny Watkins, to navigate through these complex issues and achieve significantly improved health.

“Everything in my daily life has changed for the better,” Wood said. □



Showcasing success: Patient overhauls health

David Capes is a local attorney, avid travel photographer and golfer. He also has suffered chronic back pain from arthritis, disc degeneration and diabetic neuropathy. “I had previously always been upbeat about life, but the pain was seriously affecting my attitude and well-being,” he said. Capes connected with the Living Well Center’s Devyani Hunt, MD. She customized a treatment plan involving acupuncture, physical therapy, medical massage, education about pain-diminishing techniques and stress management, and nutrition counseling. Today, Capes walks up to 20 miles a week. Hunt said she knew immediately she wanted to display his work throughout the center: “He captures moments and people in a way that draws you in and takes you to a special place of possibilities. It’s perfect for the Living Well Center.”

David Capes — Blue Eyed Man, Havana, Cuba, 2015



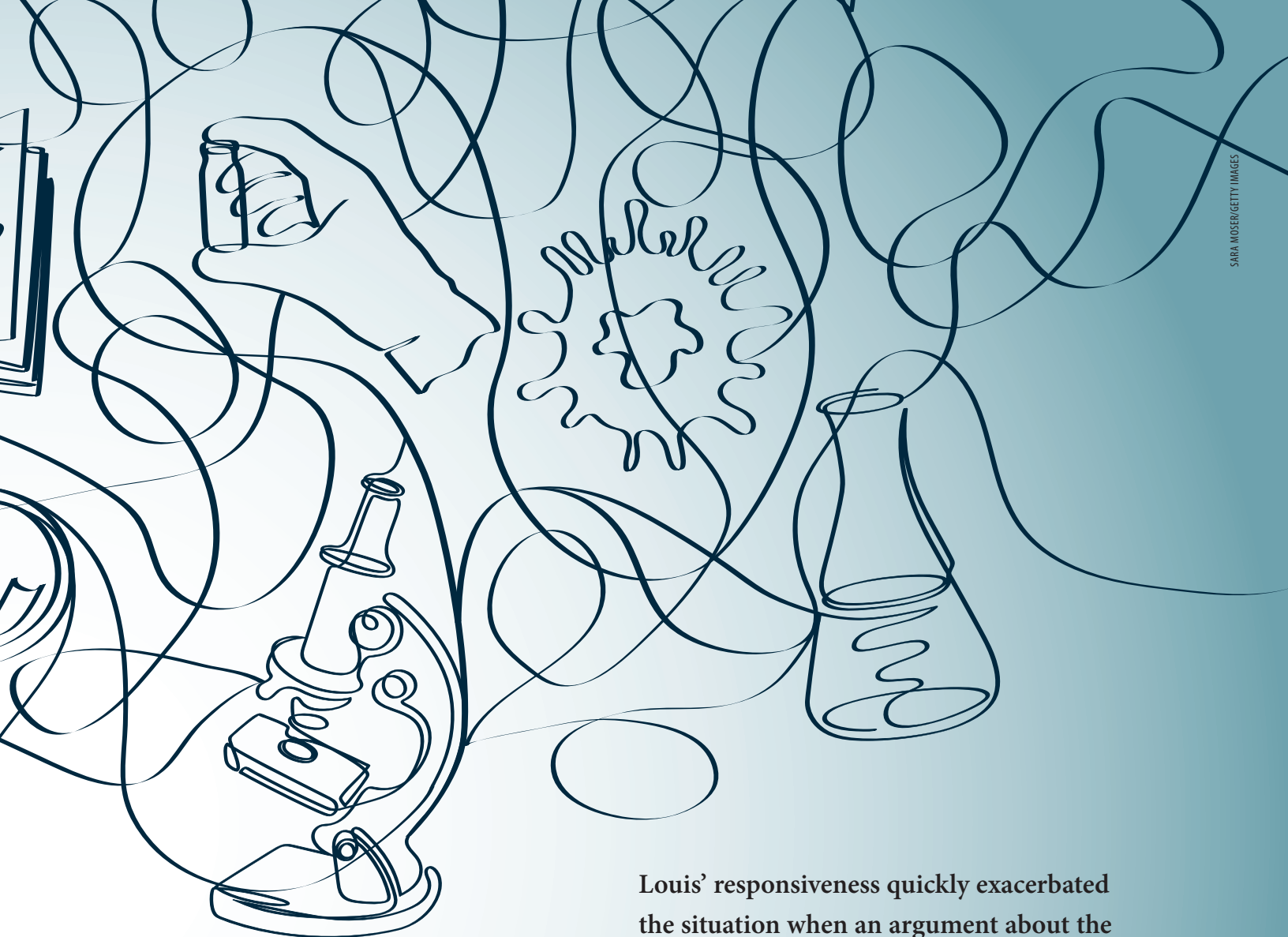
Staying in the

L I N E S

WashU coaching program strengthens research integrity on a national scale

BY ADAM LIEBENDORFER





SARA MOSER/GETTY IMAGES

Louis always made a habit of being responsive. Faculty in his department at another prominent university had lauded the up-and-coming professor for juggling prompt emails to members of his research team while fulfilling an overloaded slate of academic responsibilities. He even was invited to prepare a lecture on work-life balance.

Then came the accusation of research misconduct. A grad student working under Louis accused him of fabricating data for a conference proposal. Once an asset,

Louis' responsiveness quickly exacerbated the situation when an argument about the accusations broke out on Twitter. Soon, his employer opened a formal inquiry into the allegations. The proceedings found that Louis' actions did not include research misconduct, but did show gaps in knowledge around research ethics.

Then came the repercussions. Seemingly overnight, he had become a pariah in his department, his career at a top-tier research university was in peril, and pressure mounted to discipline him. The university enumerated a list of actions Louis needed to complete to stay in good standing. Among them was participating in the Professionalism and Integrity Program at Washington University.

Since 2013, the program, known as the P.I. Program, has been rehabilitating the careers of researchers nationwide who have found themselves the subjects of research compliance investigations. It is the only program of its kind in the country. Using a combination of root cause analysis, one-on-one coaching and career development planning, the group provides researchers with a framework, training and a path forward to prevent future violations.

The P.I. Program fills a void in the world of academia, where few options exist for researchers who run afoul of ethics and integrity guidelines. To date, more than 120 researchers, from social scientists to wet-lab researchers, have participated. Several program alumni have gone on to become ethics and integrity point people in their respective departments.

The program is led by founder and Executive Director James M. DuBois, PhD, ScD, the Steven J. Bander Professor of Medical Ethics and Professionalism, professor of psychology and executive director of the Bioethics Research Center in the Division of General Medical Sciences, and Co-director Alison L. Antes, PhD, associate professor of medicine in the Division of General Medical Sciences and director of education for the Bioethics Research Center.

“When I was putting together my proposal to launch the program, a mentor told me, ‘This is a good thing you’re doing.’”

DuBois said. “‘You’re going to save careers.’ And I said, ‘That’s good, but are these careers really worth saving?’ That answer is yes — we’re getting people who are really good researchers to fundamentally change how they do things for the better and continue doing research.”

In 2012, DuBois noticed the dearth of options institutions had for employees who violated guidelines and regulations. Institutions could either fire employees or reprimand them and require them to undergo generic training on rules.

Rather than devising impersonal training modules, DuBois used his dual doctorate degrees in psychology and philosophy to craft an approach

that specifically accounts for a client’s circumstances and measures whether the approach is effective. “I always imagined this as a behavior-change program,” he said.

Since its inception as a three-day workshop, the P.I. Program has expanded to six or more sessions spaced over several months with a one-on-one coach.

Helping researchers who have violated data integrity or compliance rules can be a hard sell to academic institutions. Because of its price and time commitment, DuBois spent the program’s early years struggling to recruit clients at various conferences for animal welfare and research integrity officers. He even changed the name from the stigmatizing Restoring Professionalism and Integrity in Research (RePAIR) to the P.I. Program.

“Early on, we published an article in *Nature*, which got picked up by other media,” DuBois said. “The story got so many hateful comments: ‘Funding is so competitive right now. Really good researchers are having a hard time making it. Why are we spending extra money on cheats, on people who cut corners and can’t do good science?’”

Using an involved intake process, the P.I. Program team identifies candidates who show promise, but perhaps were unprepared to stay on top of a demanding research career. Reasons for enrollment have included violations of human subjects protection and animal care protocols, conflict of interest policies, data integrity expectations, plagiarism and failures to provide oversight of others. Often these violations occur because the researchers are overextended, were unfamiliar with the rules, or simply did not prioritize compliance. In short, researchers who pass through the P.I. Program are those who, with additional investment, still have a chance at producing quality work if they can improve specific aspects of how they approach research.

One-on-one coaching

Sometimes, however, those who need to be most convinced of the program’s utility are the clients themselves.

The accusations against Louis’ academic integrity had taken a toll on his mental health. By the time of his first meeting in the P.I. Program, he was experiencing a complicated mix of anger, incredulity and embarrassment. Antes and DuBois said this is how they commonly receive



clients at the beginning of the curriculum. Most have never had disciplinary action before.

The program starts with a debrief led by one of its four trained coaches, each with research experience themselves, to gauge how the client feels about the situation and which interventions are most likely to work.

“Steve was almost like a therapist for me,” Louis said of meeting his coach Steven J. Mennerick, PhD, a Washington University neuroscience professor. “I was unenthusiastic because I thought it was ridiculous I was there, but I also felt that I should give it a fair shot. He let me vent.”

Such willingness to listen builds the trust needed early in the process to confront integrity issues.

“They’ve already been told by their institution that there’s been a problem and they’re already in trouble. We don’t need to retell them that,” Antes said. “Sometimes participants have said, ‘I thought I was just going to come to this and you were just going to tell me what I did wrong and how I’m bad.’”

Coaches work through a series of learning goals over six or more sessions interspersed with homework, worksheets and exercises. Coaches focus heavily on building trust with clients, and fostering critical self-reflection on how they manage time, people, projects and stress. The program involves elements such as role-playing, tests that assess workplace strengths and tasks that advance the client’s individual goals. For example, clients have written manuals to welcome lab members and set expectations, adopted data management protocols and established training procedures for team newcomers.

A central focus is identifying strengths and weaknesses while honing a professional development plan, or PDP. Items on the plan must follow a SMART approach to solving problems: Seeking help, Managing emotions, Anticipating consequences, Recognizing rules and Testing assumptions. The PDP also focuses on developing relationships — for example, with compliance offices or mentors — and leadership and management skills. It serves both as a roadmap for a researcher’s next steps and a concrete document showing a client’s home institution how much progress has been made, fostering further discussion.

Louis realized that, because research had come relatively easy to him, he rarely considered long-term goals. Without solidified, strategic career goals, parts of his management training atrophied. He developed a plan incorporating key actions,

Strategies for professional decision-making

The Professionalism and Integrity in Research Program developed a SMART approach to solving problems. Reflection questions guide researchers in making ethical decisions that are effective in achieving their research goals.



Seek help

- Where might I seek additional information or an unbiased, objective opinion?
- Would it help to involve a mediator or consultant?
- Do I welcome correction or input from others, including subordinates?



Manage your emotions

- What are my emotional reactions to this situation? Am I anxious, frustrated or depressed?
- How might my emotions influence my decision-making?
- Would taking a “time out” or deep breath help?



Anticipate consequences

- What are the likely short-term and long-term outcomes of various choices?
- Who will be affected by my decisions and how?
- How might this decision impact my career and me?



Recognize rules and context

- What are the causes of the problems in this situation? Which causes can I change?
- What ethical principles, laws or regulations apply in this situation?
- Does anyone have the power to control outcomes? If so, who and how?



Test your assumptions and motives

- Am I making faulty assumptions about the causes of the situation, alternatives or others’ intentions? How can I find out?
- What are my motives? Are they the same as the people I serve?
- How will others view my choices?

NOTE: The strategies often overlap, e.g., testing assumptions is often a good way to manage emotions, and it can lead to seeking help. Want to be SMARTER? Add “Evaluate” outcomes of your actions and “Revise” your approach based on outcomes.

Professionalism and Integrity in Research Program team members (left to right): James M. DuBois, PhD, ScD, executive director and coach; Alison L. Antes, PhD, co-director and coach; Steven J. Mennerick, PhD, coach; and Emily Schenk, program manager overseeing educational programming in the Bioethics Research Center.



TIM PARKER

such as participating in ongoing management seminars at his institution and mending the fissures that the disciplinary action caused between him and others in his department.

The pressures of research

Often, however, interventions for high-powered, leading researchers can involve subtracting responsibilities just as much as adding new ones. “One client was juggling many grants to fund his research,” Antes said. “A big part of his PDP was to reduce how many projects he was leading at one time.”



Mounting workloads and daily pressures often are a focal point of discussions. Investigators must keep a research lab running and manage a web of professional responsibilities, often with little compensation for their time spent after hours.

Despite — and, in many cases, because of — the long hours, many junior researchers find themselves ill-prepared to take on more senior-level responsibilities. Young researchers often learn lab leadership skills in a very informal, serendipitous way.

“It’s a time of uncertainty, and it’s also a time of excitement and idealism,” Antes said. “It’s sort of like there’s a secret rulebook or something, and some people get to know what’s in the secret rulebook and other people don’t. Some people are lucky to have other young people starting up at, say, the lab next door at the same time as them, and they support each other.”

Louis found that many of the topics he covered with his coach, such as handling personnel issues, setting professional growth goals and establishing good lab practices, aren’t traditionally taught in graduate training.

“There’s this assumption that because people received advanced degrees, they in fact know how to run a lab and to manage people to take on additional responsibilities like managing grants, and that tends not to be true,” said Reginald W. Miller, DVM, dean of research operations and infrastructure and senior research integrity officer at Icahn School of Medicine at Mount Sinai. His institution has sent two professors to the P.I. Program in the last five years.

“The type of counseling these individuals get in this program should really be a part of faculty orientation for any junior faculty coming to the institution,” he said.

WashU is particularly fortunate to be the home base for the P.I. Program. It has given School of Medicine researchers a platform to more closely examine many of these issues. Several WashU research training offerings now include lectures by program leaders and the program serves as an expert source to help investigators as they progress in their responsibilities.

“From PIs, we want the creativity of an artist and the detail orientation of an accountant.”

— James M. DuBois, PhD, ScD

DuBois said regulatory oversight systems coupled with the demand for innovation and creative productivity generate unique issues for researchers seldom seen in other professions.

“From PIs, we want the creativity of an artist and the detail orientation of an accountant,” he said. “They have to be able to pose novel questions, exciting questions, innovative approaches, or they won’t get funded. They have to have this creativity and this vision, but we also want them to have the detail orientation, and not just regarding their own scientific data, but regarding budgets, regarding compliance and documentation, and often these aren’t things they’re interested in at all.”

Identifying best practices

To better understand the best practices that exemplary researchers employ, the program also launched the Exemplars Project. The program solicited nominations for top U.S. investigators and conducted interviews with selectees. In 2018, Antes published the project results and identified behaviors that distinguish standout researchers. One finding that stuck out: Successful research leaders keep personal frustrations or negativity from pervading the culture of the lab.

“Treating logistics like regulatory compliance as a burden can send a signal to the rest of the team that these parts of research are unimportant,” she said. “Typically, data problems like fabrication and falsification are often from other lab members, like grad students or post-docs, but the investigator is responsible for that.”

Successful researchers also are more intentional about how they interact with their teams, Antes said, celebrating members’ achievements and mindfully keeping tabs on their progress. Failure to do so might lead to lab environments where team members are afraid to make mistakes or provide ample conditions for lapses in compliance.

Looking ahead, the two hope to delve further into other underlying factors. The first is understanding the role culture plays

in the lab environment. The P.I. Program works with institutions in the U.S., and approximately half of the clients were born outside the country.

In one study, Antes, DuBois and others developed a measure that assessed how researchers regard rules in science. They administered it to 101 U.S.-born researchers and 102 researchers born outside the country. U.S.-born researchers were significantly better at distinguishing between the seriousness of violating U.S. research regulations and violating ideals of science. The U.S.-born researchers also had a better sense of how university research integrity officers would view different types of infractions. The researchers are investigating what might drive these differences.

The researchers also identified time periods when stressors make it more likely for a scientist to cut corners, such as pivoting to a new kind of research or transitioning from junior researcher to principal investigator.

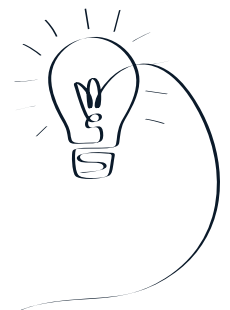
The group’s work has spawned dozens of research articles examining what exactly makes a good researcher and last year was awarded a \$2 million grant from the National Institute of General Medical Sciences to develop a training program for early-career investigators.

This program, Compass, is remotely delivered and launches this fall. It includes modules for leading other scientists, as well as mentoring for six months. The goal is to democratize research leadership training and make such career guidance more widely accessible, particularly to underrepresented groups in research.

Louis’ time with the P.I. Program has renewed his attention to seek out further training. “When you think about academics, we get the training we get from our mentor, often very little other professionalization, and after that no one ever supervises you again. With all of the pressures we have, there’s close to zero incentive to work on these issues ourselves,” Louis said.

“Over the course of the six meetings and the work in between, I came to realize that not only was it not a waste of my time, but many of my colleagues, perhaps most professors, would benefit from something like this,” he added. □

▶ To learn more, visit:
integrityprogram.org



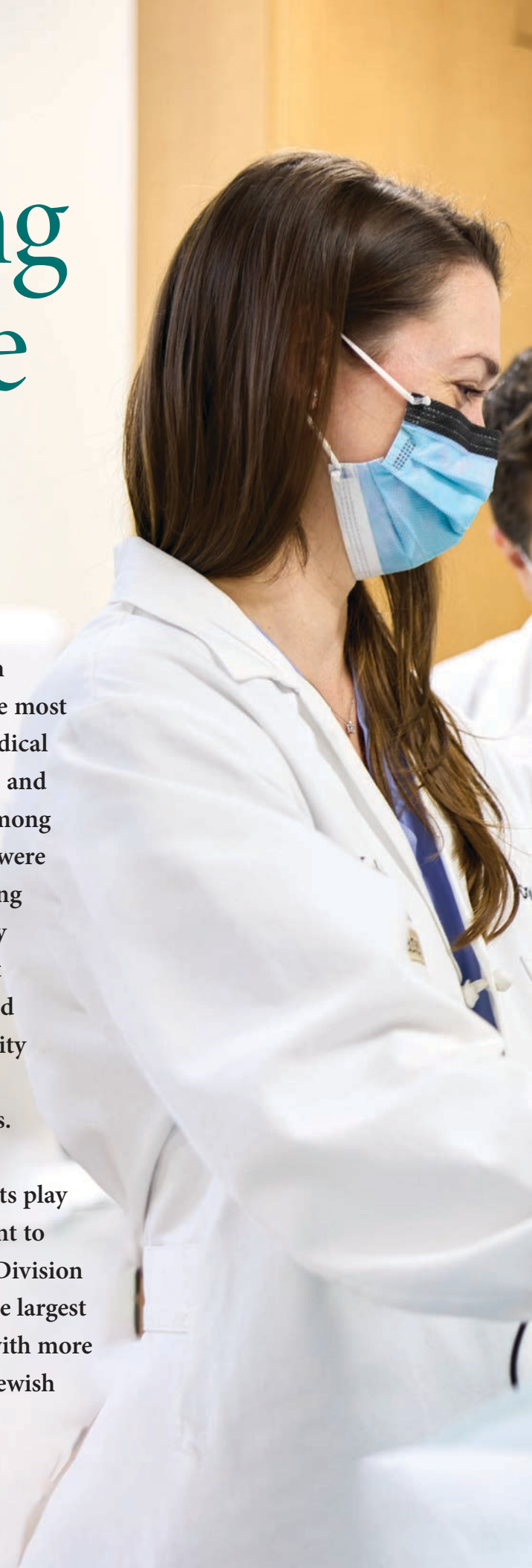
Orchestrating bedside care

Hospitalists ensure better outcomes both in and beyond the hospital

BY CONNIE MITCHELL

Barnes-Jewish Hospital, like hundreds of other urban hospitals across the nation, was at capacity during the most intense days of the COVID-19 pandemic. On the Medical Campus, health-care workers at all levels of expertise and in every specialty were pushed to their limits. And among those serving almost beyond their own expectations were the hospitalists — physicians who specialize in treating hospitalized patients. Working around the clock, they ensured excellent care for every medical floor patient with COVID-19 at the beginning of the pandemic and subsequently coordinated care delivery for the majority of them throughout the pandemic.

The pandemic didn't define the role of hospitalists. But, for patients, families and even other health-care providers, it did highlight the key role these specialists play in inpatient care. Yet, hospitalists have been important to inpatient care for decades. The School of Medicine's Division of Hospital Medicine, established in 2000, is one of the largest academic divisions of hospital medicine in the U.S., with more than 100 hospitalists caring for inpatients at Barnes-Jewish Hospital and Barnes-Jewish West County Hospital.



Hospitalists Crystal Atwood, MD (left), and Stephanie Conner, MD, use POCUS (point-of-care ultrasound). POCUS is better at diagnosing pneumonia and heart failure than traditional bedside exam modalities.



Mark V. Williams, MD, took the helm of this still-expanding division in the midst of the pandemic, as chief and a tenured professor of medicine in October 2021. One of the most respected leaders in the field, he established in 1998 the first hospitalist program at a public hospital, Grady Memorial Hospital in Atlanta. Having built large hospitalist programs at three other academic medical centers, authored or co-authored 200-plus publications and received more than \$34 million in grants and contracts, he is enthused about leading the Washington University program forward as a national model.

“Hospitalists play an integral role in quality improvement and patient experience and are an important part of our medical education mission,” Williams said. He noted that hospital medicine is the fastest growing specialty in the history of American medicine — now larger than emergency medicine or cardiology. Nonetheless, many people are still unaware of hospitalists’ scope of care.

Consider the hospitalist like a symphony conductor. Each hospitalized patient requires care from a team. The specialists, nurses, therapists and social workers assigned to a patient’s case are like individual musicians, each expertly playing a part. The hospitalist conducts this medical orchestra, ensuring that all parts are working harmoniously to produce optimal patient outcomes. The hospitalist also communicates with the patient’s primary care physician and family caregivers, keeping the entire care team on the same page regarding diagnostic history and follow-up care.

(Left to right) Case manager Julia Clodius, RN, hospitalists Margo R. Girardi, MD, and Caroline H. Kahle, MD, and physical therapist Whitney Tesar, DPT, discuss patient care at Barnes-Jewish Hospital.



MATT MILLER

Hospitalist history

Before the term “hospitalist” was coined, Barnes-Jewish Hospital offered a precursor known as the private medicine service. “We were the hospital’s house physicians, helping private-practice primary care doctors provide care for inpatients,” said Mark S. Thoenke, MD, professor of medicine. “The model, even in the mid-’90s, allowed us to be hospital employees with a strong teaching role.”

In 1996, Robert M. Wachter, MD, now professor and chair of the Department of Medicine at the University of California, San Francisco, first used the term “hospitalist” in an article published in *The New England Journal of Medicine*. Considered the “father of hospital medicine,” Wachter is a longtime friend of Williams’ and, earlier this spring, visited Washington University to discuss the future of medicine with hospitalists here.

“It dawned on me that the way we organized medical care just wasn’t working,” he said of his original publication. “Hospitals are very complicated, and things happen very quickly. We needed a new model, and there just wasn’t a specialty focused on the care of hospitalized patients. We needed physicians who were generalists comfortable dealing with many problems, but whose specialty was dealing with patients in this complicated hospital structure.”

Under the leadership of John P. Lynch, MD, now president of Barnes-Jewish Hospital, Thoenke served as the first clinical director of the Division of Hospital Medicine from 2000 through 2009, then took over as division chief for the next 11 years. “In 2020, I decided it was time to return to the activity I love most — teaching,” he said.

During his tenure, the division launched some of its most significant areas of contribution. Notably, it collaborated with Siteman Cancer Center to provide clinical inpatient services for oncology. About two-thirds of all patients with cancer admitted to Barnes-Jewish now receive care from hospitalists. And it also began teaching house staff to perform bedside procedures. Division hospitalists are leaders in medical education for both students and residents, winning awards every year.

Both the cancer care and the teaching initiatives mark evolutions in the specialty that other programs are emulating. “It’s been satisfying to develop our educational mission alongside our clinical efforts,” said Robert J. Mahoney, MD, associate professor of medicine. He and Thoenke are two of the five original physicians who formed the nascent division in 2000.



An attractive specialty

Given the weight on hospitalists' shoulders in the last few years, it might be surprising that the specialty continues its rapid expansion. But medical students tend to base residency decisions on their clinical rotation experiences and also note the satisfaction levels of attending physicians and faculty working in those specialties, Williams said. Hospitalists, he said, often express positive feelings about their work and demonstrate work-life balance. Though schedules vary, a hospitalist on service may work long hours for seven consecutive days and then be off service for the next seven days, as an example.

"When we have great role models who are educating and guiding our medical students through their first exposures to inpatient care, the hospital medicine specialty is very attractive," Williams said. The path to becoming a hospitalist typically involves residency training in general internal medicine, general pediatrics or family medicine.

Stephanie Conner, MD, assistant professor of medicine, is among the younger generation of hospitalists at Barnes-Jewish Hospital joining the service this year. "I chose hospital medicine because I love the acuity and breadth of medicine that you see in our role; every day is interesting and no two days are the same," she said. "I've also begun to appreciate the diverse career that you can have in hospital medicine through opportunities in medical education, quality improvement,

clinical operations, hospital leadership, patient advocacy and research.

"The value of hospitalists is not just in our ability to care for patients in the acute care setting, but our ability to contribute to how the hospital functions in all of those areas," she added.

Increasing care efficiency

Williams has spent his career researching and documenting hospitalists' contributions to patient throughput and care transitions. This interest began when he observed discharged patients being readmitted, often due to failure to fill prescriptions and obtain follow-up care.

"I realized that we did a poor job of educating patients who were being discharged from the hospital," he said. "That lack of health literacy correlated with readmission and even increased mortality. I became interested in optimizing the transition from emergency department to inpatient service to outpatient care."

A key component to improving care transitions is strengthening the connection between hospitalists and primary care physicians. Many patients expect to see their family doctor or internist while in the hospital, but this expectation adds increased pressure to a field that is experiencing national shortages. Primary care physicians are ever busier with more complicated patients in their ambulatory practices. These forces

Division Chief Mark V. Williams, MD, uses a tablet so primary care physician Jennifer M. Schmidt, MD, can talk with a patient.



MATT MILLER

(Left to right) hospitalists Michael Y. Lin, MD, Mark S. Thaelke, MD, and Robert J. Mahoney, MD, talk while working in Barnes-Jewish Hospital. Thaelke led the division for many years and Mahoney is one of the five physicians who formed the division in 2000.

have led primary care doctors to stop rounding on their hospitalized patients.

To improve care efficiency and alleviate stress, it is imperative that patients understand how hospitalists fit into their care team and develop trust that their doctors are working together. Williams recalled that while working at Northwestern Memorial Hospital in Chicago, he learned from a geriatrician who interviewed patients about their understanding of hospitalists. The takeaway: “Patients trusted their primary care physicians and needed to check with them before filling new prescriptions I had ordered,” Williams said. “They did not trust me initially. That makes sense, and I took that to heart in showing how critical it is for the hospitalist and the primary care physician to communicate during patient hospitalizations.”

Williams subsequently strived to ensure that hospitalized patients received at least a brief phone call from their primary care physician to clarify that everyone was working toward their benefit. This team approach also applies to other community care providers, such as home health nurses, Williams added, describing the stepwise progression of his research to understand and address care transitions between clinical settings.

“One of the first grants I received was to develop a patient safety toolkit,” he said. “That work led to the development of Project BOOST (Better Outcomes for Optimizing Safe Transitions), which

was funded in 2008 and eventually implemented at more than 200 hospitals. At the same time, I worked with colleagues to publish data about care transitions, which showed that one in five Medicare patients were readmitted after discharge. That influenced the hospital readmission reduction program written into the Affordable Care Act.”

One of Williams’ goals for the Washington University hospital medicine program is to further reduce readmissions and optimize throughput — the movement of the patient from an inpatient care setting to the next appropriate location, whether a rehabilitation center, long-term care facility or home. To achieve this, Williams is initiating teams to work on improving care transitions, reduce readmissions, enhance patient throughput and to reduce patient delirium.

“We’re both improving care delivery and training hospitalists in quality improvement measures; we want to build an army of physicians who are skilled and dedicated to improving patient care,” Williams said.

During the pandemic, hospitalists more than proved their worth as team players, said Victoria J. Fraser, MD, the Adolphus Busch Professor of Medicine and head of the Department of Medicine. “They stepped up and provided the vast majority of care for COVID-19 patients who were admitted to the medical service, even creating a handbook and guidelines for managing non-ICU COVID-19 patients and educating other specialists,” she said.

Top: Hospitalist Nathan R. Martin, MD, prepares to enter the room of a patient with COVID-19. Middle: Martin dons PPE with medical students Amy Zhang (center) and Emma Payne. Bottom: A whiteboard reflects that there are no available beds in one section of the hospital in January 2022.

MATT MILLER PHOTOS



Fraser referred to hospitalists as the “unsung heroes” of the pandemic, relieving the burden on other specialists who needed to continue care for their non-COVID-19 patient populations, as well as consult on COVID-19 cases.

Both Williams and Fraser recognize Michael Y. Lin, MD, as one of the hospitalists going above and beyond during the pandemic’s early days. Lin, who served as interim division chief prior to Williams’ arrival, purchased as much protective equipment as he could at local hardware stores when the first surge was straining hospital supplies. “He did just an extraordinary job of shoring up and encouraging his colleagues,” Fraser said.

Han Li, MD, assistant professor in medicine, was another hospitalist leader during the pandemic, Fraser said. “Dr. Li jumped onto the front lines when we didn’t really know how to treat COVID-19 or what caused it. She was brave and dedicated as she started to figure out how the hospitalists could step up and manage these patients.”



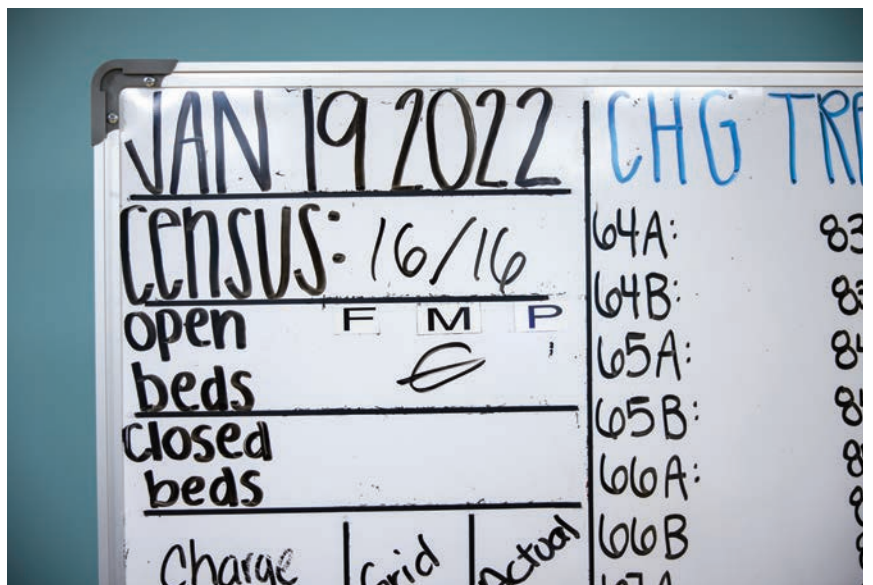
An ongoing need

Hospital medicine continues to expand for reasons other than physician satisfaction and interest. “Hospitalized patients are increasingly sicker and more complex, requiring a higher level of care on the floor,” Williams said. “And there are also sicker outpatients demanding more of their primary care physicians. With the more complicated inpatient population, there needs to be a physician available on site at all times, and we’re there, partnering with nurses, pharmacists and therapists to make sure care is coordinated and complete.”

Adding to a more efficient inpatient care structure, many Washington University hospitalists provide bedside tests and procedures, reducing the need to transport patients from their rooms to another part of the hospital. Patients prefer to undergo procedures in their rooms when possible.

“A lot of places struggle to maintain a procedure service in their hospitalist division, but we’ve been doing it and sustaining it successfully for years,” Mahoney said.

Point-of-care ultrasound (POCUS) is becoming more common and better at diagnosing pneumonia



and heart failure than traditional bedside exam modalities. POCUS may soon even replace stethoscopes. Other procedures performed by hospitalists at the bedside include placing central lines; removing fluid from joints, around the lungs and the abdomen; and lumbar punctures.

“Even before the pandemic, our hospitalists were recognized as outstanding clinicians,” Fraser said. “Still, people don’t have the best understanding of how hard it is to be a hospitalist and what exactly they do. They care for the sickest of the sick, they work long shifts with lots of patients, and they make sure things run as efficiently as possible.”

Williams agrees about the quality of his hospitalist colleagues at Washington University. “We have a huge opportunity here, and we’re already one of the best hospitalist programs in the nation. We can be one of the country’s top five programs within the next five years through pursuit of scholarship and grant funding,” he said.

Williams plans to continue developing relationships with primary care physicians throughout the region and with the patients they serve. He noted the growth of the home hospital movement, in which patients receive hospital-level care in the home. In these hybrid care models,

hospitalists and nurses make home visits and monitor vital signs through devices that deliver remote patient data.

“A review of international studies in 2012 showed that delivering hospital-level care in patients’ homes resulted in reduced cost, mortality and rehospitalizations. A randomized controlled trial performed in the U.S. and published in 2019 showed much higher patient satisfaction and reduced costs and rehospitalizations from a hospital-at-home program,” Williams said. He looks forward to hospitalists helping to build such a program here.

Looking further down the road, Williams sees hospitalists focusing their care on specific patient populations. For instance, one of the hospitalists’ largest services is oncology. About a third of all the hospitalists at Barnes-Jewish focus on this care. Other potential areas of specialization include co-management of patients on surgery, psychiatry, critical care, cardiology and palliative care services.

“The fact is, hospitalists have become crucial to the function of hospitals and to the best results for hospitalized patients,” Williams said. “We’re here, we’re staying, we’re ready to step up as needed, and that serves everyone.” □

Hospitalist Jaspur J. Min, MD (left), and nurse practitioner Kelsey E. Ortmann prepare a patient for discharge.





A fellowship of purpose

BY EMMA DENT

Carol B. Loeb, a St. Louis teacher, philanthropist and member of the School of Medicine National Council, has been an integral part of Washington University for decades. Here, she and university leaders and guests sign the final steel beam of the Neuroscience Research Building before it was placed on top of the structure. The state-of-the-art building will be completed in July 2023.

In 2004, Carol B. Loeb and her late husband, Jerome T. Loeb, made a gift establishing a unique fellowship program that would provide School of Medicine faculty with protected time and funding to pilot innovative approaches to training future physicians. Eighteen years later, 29 faculty members have been named Carol B. and Jerome T. Loeb Teaching Fellows, and the program has become an idea generator and incubator, professional springboard, vibrant community and much more.



Former and current Loeb Teaching Fellows (shown above) recently gathered at a symposium celebrating the program's successful legacy. The fellows also presented Carol Loeb with a book containing messages of gratitude.

Education is a longstanding passion for the Loeb family. Carol has devoted nearly 60 years to secondary education in St. Louis. For decades, she taught middle school and high school mathematics and now prepares students for college entrance exams. After retiring as board chairman of the May Department Stores Co. in 2001, Jerome Loeb served as an adjunct professor of marketing at Olin Business School until his death several years later.

Rooted in their shared values, the gift was a way to “honor the incredible clinicians who played such important roles throughout our lives,” Carol Loeb said.

Awards such as the two-year Loeb Teaching Fellowships remain all too rare in American academic medicine, according to Eva Aagaard, MD, senior associate dean for medical education. “This program sets the

medical school apart as an institution that truly supports educator career development,” said Aagaard, who also is the Carol B. and Jerome T. Loeb Professor of Medical Education.

Fellowship recipients come from a diverse range of specialties and professional experiences, but they share a deep commitment to teaching and a desire to push medical education — and the next generation of clinicians — forward.

The wide-ranging impact of their work was on full display in April at a symposium celebrating the program. Former fellows gathered to share their stories and gratitude.

Loeb, who was in attendance, was moved by their words. “I hoped the fellowships would make a difference to the medical school and its students and residents,” she said. “But to see the program’s evolution and how it has changed lives is much more than I ever dreamed possible.”

Impact of the fellowship recipients

Simulated learning builds real expertise

Observation is key to medical education, yet watching a doctor or a nurse intubate someone is different than performing the procedure yourself. Today, medical students and trainees routinely practice these and other foundational skills in simulated environments, with uncannily realistic mannequins standing in for flesh-and-blood patients. Medical simulation, however, was still a relatively nascent pedagogical tool in the early years of the millennium.

In 2003, Mary E. Klingensmith, MD, then an assistant professor of surgery, was asked to co-lead a task force examining the state of immersive learning at the medical school. “It was clear there was a tremendous opportunity to integrate simulation and immersive education into teaching at the undergraduate and graduate levels, across multiple disciplines and departments,” said Klingensmith, now the Mary Culver Distinguished Professor Emeritus.

Klingensmith seized the opportunity to apply for a Loeb Teaching Fellowship. As one of the program’s inaugural fellows, she conducted a formal needs assessment of simulation-aided learning at the school. She also participated in an immersive education course at Harvard Medical School and met with medical educators from around the country.

“I spent two years really understanding the landscape, both outside WashU and, chiefly, inside WashU,” she said. With her fellowship concluding in 2007, Klingensmith applied for a second round of funding. Her goal was to develop and implement a simulation curriculum for School of Medicine students, residents and fellows.

The Howard and Joyce Wood Simulation Center, which opened on the fifth floor of the Farrell Learning and Teaching Center in December 2008, is one result of this work.



Mary E. Klingensmith, MD

Nearly 15 years since its launch, the thriving center facilitates 300-plus teaching sessions with more than 500 learners annually.

Beyond the medical students and trainees who have benefited from her project, Klingensmith sees her own professional path as a testament to the fellowship program’s impact. While a fellow, she honed valuable communication, collaboration and leadership skills. Klingensmith recalls justifying budgetary requests to the dean and coordinating with advancement staff and potential donors on funding issues. “Those experiences were really important to my growth in academic medicine,” she said.

Klingensmith credits the fellowship with ably preparing her for her post as senior vice president for accreditation at the Accreditation Council for Graduate Medical Education. “It’s phenomenal to be able to take the gifts I cultivated at WashU to an even bigger platform,” she said. “The fellowship truly transformed my career.”

Self-reflection as strategy

When he was the director of medical student education for the Division of Pediatric and Developmental Neurology, Douglas P. Larsen, MD, began to think critically about how students learn to become doctors. For Larsen, patient interactions rank among the “greatest powers in medical education,” and he sought to develop a system that would optimize experiential learning.

In 2010, Larsen designed a yearlong pilot program for students in the pediatric neurology portion of the neurology clerkship. The students set personal goals and wrote journal entries about what they learned via patient interactions each day. At the end of every week, they submitted their entries to Larsen for feedback.

In a post-pilot survey, 85% of student respondents indicated that the daily reflections improved their learning. Encouraged by this positive response, Larsen applied for a Loeb Teaching Fellowship to expand the program to the entire neurology clerkship, which numbers about 120 third-year medical students annually. The



Douglas P. Larsen, MD

“To see the program’s evolution and how it has changed lives is much more than I ever dreamed possible.”

— Carol B. Loeb

larger rollout brought additional student feedback. And with fellowship support, Larsen refined the protocols even further, diving into intensive research on experiential learning.

“We found that students gained the most value in prospective planning versus retrospective journaling,” said Larsen, now a professor of neurology and of pediatrics. “We hadn’t fully teased that out in the pilot. So, we shifted from reflection and journaling to goals and collaboration. Learning truly took place when faculty members and residents collaborated with students to accomplish their goals.”

Fostering these interactions became a curriculum priority. Medical students shared their specific learning goals each week and partnered with mentors to devise action plans. Today, active coaching and feedback between program leadership and students remain key components in the neurology clerkship.

Larsen’s experience as a Loeb Teaching Fellow laid the groundwork for additional support from the Josiah Macy Jr. Foundation, which helped broaden the program to other medical school departments. The fellowship also equipped him to participate in the development of the school’s Gateway Curriculum — a process that involved more than a few former Loeb Teaching Fellows.

“The fellowship was the beginning of a transformative journey for me,” Larsen said. “I moved from focusing on learning as cognition to recognizing that learning occurs in our interactions and in our systems.”

Training physicians as educators

In 2016, Patricia F. Kao, MD, associate professor of medicine, began developing a program to help residents gain the knowledge and skills necessary to succeed as clinician-educators. Kao’s work led to the formation of the Washington University Teaching Physician Pathway (WUTPP), a one- to two-year certificate program that she now directs.

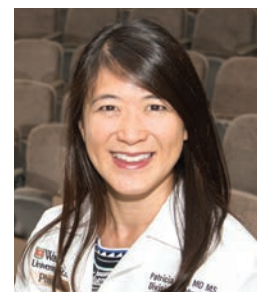
WUTPP features a series of intensive two-week didactic blocks that includes lectures and workshops on topics such as educational theory and curriculum development. WUTPP also provides participants with dedicated opportunities to teach medical students and engage in mentored education scholarship.

The program welcomed an inaugural class of seven internal medicine residents in 2017. That same year, Kao commenced a two-year Loeb Teaching Fellowship that would take WUTPP to new heights. With the fellowship funding, Kao was able to extend the program’s reach beyond internal medicine. In 2019, WUTPP opened up to residents in dermatology, general surgery, pediatrics and obstetrics and gynecology. A separate track for pediatric and medicine fellows launched in 2021.

One of the most significant developments to come from Kao’s Loeb fellowship is the addition of a mentoring component in 2018. The program pairs residents with faculty mentors to create and teach didactic sessions to third-year medical students. “I was looking for opportunities for residents to gain workplace-based experience with curriculum design and presentation skills, while also contributing to the school’s mission,” Kao explained. “It seemed like the perfect way to combine faculty goals to modernize their curricula and mentor teaching residents, and for residents to develop their skills as clinician-educators.”

WUTPP enrollees have presented their education scholarship nationally for organizations such as the Association of American Medical Colleges and the Alliance for Academic Internal Medicine. Over the past five years, 52 residents and 11 fellows have completed or are currently in the program. To date, WUTPP participants have taught four graduating medical student classes.

For Kao, being a Loeb Teaching Fellow was a career-defining experience. The fellowship gave her critical time and resources to expand WUTPP and connected her to an invaluable support network of former Loeb Teaching Fellows. “I have been able to contribute to the medical school community in an innovative and sustainable way, far in excess of what I could have accomplished alone,” she said. “The fellowship unequivocally changed my career and my life.”



Patricia F. Kao, MD



MARK BEVEN

Long-awaited reunion

BY PAIGE CHANT

Celebration Weekend 2022 truly lived up to its new name, drawing alumni from near and far for a much-anticipated, long-overdue reunion. This year's reunion, held April 29 and 30, was especially momentous, as alumni gathered in person for the first time since the start of the COVID-19 pandemic. Nearly 300 alumni and guests reconnected with friends, mentors and colleagues.

The two-day format featured a mix of structured events and downtime, giving participants, many of whom traveled long distances, the opportunity to explore St. Louis and visit old friends.

The weekend kicked off with presentations and behind-the-scenes walking tours of the Medical Campus led by current students. Eva Agaard, MD, senior associate dean for medical education, highlighted the school's Gateway

Curriculum, and Jonathan Kipnis, PhD, a BJC Investigator and the Alan A. and Edith L. Wolff Distinguished Professor of Pathology and Immunology, gave a lecture titled "Can We Rejuvenate the Brain?"

A dinner was held honoring 50th anniversary celebrants — the classes of 1970, 1971 and 1972 — at the Ritz Carlton St. Louis, while alumni in other classes attended Decade Parties.

Susan Yang, MD, Class of 1997, president of the Washington University Medical Center Alumni Association, hosted the Dean's Breakfast and Awards Recognition Ceremony. There, David H. Perlmutter, MD, the George and Carol Bauer Endowed Dean of the school, provided progress updates, and alumni celebrated colleagues' achievements and contributions to the field since graduating.

Current students led alumni on walking tours of the Medical Campus during Celebration Weekend 2022.

Save the date

Join us for next year's Celebration Weekend

April 21-22, 2023



MARK BEAVEN PHOTOS

Over 30 members of our Class of 1997 took time away from their busy lives to meet in St. Louis for our amazing 25th reunion. A lot of laughter, love, hugs and tears were exchanged, and we all left our bonding reunion (complete with a karaoke party!) with warm, fuzzy feelings, so proud of what we've accomplished in our careers and families. This reunion further deepened our pride in WashU, and we loved seeing how it has evolved over the years."

— Susan Yang, Class of 1997, president, Washington University Medical Center Alumni Association



The highlight was the Class of 1970 (50+2) Reunion dinner. Twenty classmates were able to attend, and this provided an opportunity to reconnect and share memories of our Washington University School of Medicine experiences from 1966-1970 and to update everyone on practice/research and other personal health-care contributions since matriculation. There was also the chance to discuss important family developments, such as children, grandchildren (always a highlight), and other important non-medical contributions.

"Reunion is a special event, and it demonstrates clearly the allegiance and personal satisfaction we all have to Washington University School of Medicine. The Medical Campus tour was incredible and illustrated why we are so proud to be alumni."

— David W. Ortals, Class of 1970



I enjoyed seeing and talking to my medical school colleagues and learning what they are currently doing and where they live. Some were totally retired, and others were working part time. Those that had gone into surgery, for the most part, no longer operated on patients, but some chose part-time work in the medical arena just to keep busy.

"I brought along pictures of our class in 1970 and enjoyed comparing how we all have changed. A reunion brings back memories! Memories made to last!"

— Joann Data, Class of 1970



Find your friends.

Classnotes are organized first by year of degree/training completion and then in alphabetical order.

How about you?

Share your news via the online form at med.wustl.edu/classnotes. Submissions will be printed in a subsequent issue of Outlook magazine as space allows. Photos are welcome.

1950s

Kay E. Mazur, NU '59, retired after 35 years in real estate in April 2021 and plans to relocate to an independent living community in Decatur, Ga. Three of her six children and two of her adult grandsons live in the area. She reports that she is "generally doing well," but has decided to give up keeping house and cooking for one.

1960s

Steven Fredman, LA '58, MD '62, is retired and married, with four children and nine grandchildren, all living in California. Fredman was a practicing internist and gastroenterologist at Kaiser Permanente Walnut Creek Medical Center for 40 years. For the time and place, he was a "journeyman" doc, and spent many nights and weekends dealing with sick people. In the era of racially segregated hospitals, Fredman was one of the medical students who spent three weeks delivering babies at an all-Black hospital called Homer G. Phillips. The first Black doctor to graduate from the med school was in his class. After graduating and serving in the military, Fredman spent time as a WashU intern and resident. He has written three books, including "Understanding Modern Health Care: The Wonders We Created and the Potholes We Dug," which tells the history of medicine in his lifetime. Among other things, he

wrote about Evarts Graham; Robert Crane, the WashU researcher who studied the biochemistry of oral rehydration; Michael Riordan, the WashU graduate who started Gilead Sciences Inc., the biopharmaceutical company that produced drugs to treat HIV and hepatitis C and B; the racial integration of medicine; the high cost of drugs; and much more.

Josh Grossman, MD '65, recently attended a local EMT/paramedic conference, where he assisted as a volunteer with cardiac arrhythmia recognition. He has volunteered to provide arrhythmia recognition instruction to his oral surgeon's office team.

Jim B. Hales, DE '65, is entering his 57th year of dental practice, working full time at age 86, and loves WashU.



James P. McCulley, MD '68, transitioned to emeritus professor July 1, 2022, after serving 40 years as chair of the Department of Ophthalmology at UT Southwestern Medical Center in Dallas.

George R. Randall, MD '69, retired in 2013. He recently enjoyed a Paul Gauguin cruise to the French Polynesian Islands.

1970s

Toby L. Simon, MD '70, is the senior editor of "Rossi's Principles of Transfusion Medicine," a comprehensive medical text. The sixth edition is being published this year. He continues to work as senior medical director of CSL Plasma, a subsidiary of the global biopharmaceutical company CSL Behring. He works remotely from Albuquerque, N.M.

Paul Golden, MD '74, expects Austin Macauley Publishers Ltd. in London to release his newest book, "An Anthology of America's Marginalized, Volume 1," by December 2022. Golden, who has written a number of books on mental health, personally has been affected by bipolar disorder for 50 years. Read more about his life at mdgolden.com. He reports that his wife, Sue, and their poodles are doing well.



Stephen L. Piercy, MD '79, retired in December 2019 after working in a private urology practice in Fort Dodge, Iowa, since 1985. He and his wife, Jan, have been married 44 years and have four children and nine grandchildren.

1980s

James V. Park, MD '82, is retiring to Lake Wisconsin in June 2023.



Edward T. A. Fry, MD '83, is serving as president of the American College of Cardiology and chair of the Ascension Health National Cardiovascular Service Line.



Delia M. Garcia, HS '83, left mainstream medicine in 2011, after 30 years of practice in radiation oncology, and reinvented herself as a health and lifestyle coach. Garcia

said helping people achieve a healthy weight, eliminate medications and reverse diabetes, hypertension and countless other ailments has been life-changing. She works with individuals and families and also mentors those who would like to join her mission. The practice, Creating Health LLC, is based in St. Louis.

Gary R. Collin, MD '85, retired in 2020 after 15 years as the chief of surgery and director of surgical critical care at the Salem Veterans Affairs Medical Center in Virginia, and has started to build a retirement home in Babcock Ranch, Fla. He recently contributed to the seventh edition of the "Fundamental Critical Care Support" (FCCS) book. FCCS is an international course from the Society of Critical Care Medicine, teaching critical care to multidisciplinary groups of critical care providers. He has been a national consultant for the course for over 20 years and has directed and taught courses all over the U.S. and as far away as Japan. He continues to teach.

Elizabeth Maynard Jones, PT '85, released her debut album of original music called "Summer Storm" (elizabethmjonesmusic.com) in 2020. It features vocals and keyboard and expresses themes of healing, recovery and faith. She began posting music videos last year and is now working on a second album.

1990s

Stephen Lloyd Brown, HS '90, a child and adolescent psychiatrist, was named the Wyoming Physician of the Year by the Wyoming Medical Society. The Natrona County Medical Society also honored him with the Physician Service Award.

Misti L. Timpson, PT '92, was awarded a doctorate in 2019 from Rocky Mountain University of Health Professions (RMU). She teaches full time as an associate faculty member at RMU and serves as a Utah delegate in the American Physical Therapy Association House of Delegates.

Daniel Joseph McGraw, MD '93, retired in 2019 from vascular surgery practice and, with his wife, **D'Ann Duesterhoeft, HS '91** (WashU anesthesiology house staff), relocated to her native Texas. They are greatly enjoying life in the Texas Hill Country!



Erin S. Gardner, HS '97, was elected 2022 president of the St. Louis Metropolitan Medical Society. The society, which represents physicians in

in St. Louis and St. Louis County, works to advance strong patient-physician relationships and quality health care through advocacy, communication and education. Gardner, a St. Louis-based, private-practice dermatologist, is board-certified in dermatology and micrographic dermatologic surgery. Gardner served as the society's president-elect in 2021, as vice president in 2020, and as councilor in 2019. He is a past president of the Missouri Dermatological Society.



Rebecca Lynn Neiduski, MSOT '97, began her role as the 18th president of Wartburg College in Waverly, Iowa, July 1, 2022.

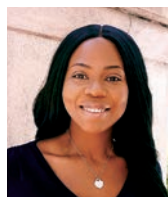
Sean D. Pierce, HS '99, has stepped down after nine years as chair of the Department of Radiology at Hackensack University Medical Center in New Jersey, and looks forward to assisting in the further development of the private practice.

2000s

Audra Popp, MSPT '00, moved back to Texas and works at Baylor Scott & White All Saints Medical Center in Fort Worth, specializing in oncology. Popp, now a certified clinical instructor, also is married with five children. Popp said she is "so thankful God showed her this profession 24 years ago. Where has the time gone?" She would love to hear from any of her classmates.

Erik Wallace, MD '00, left his position as the associate dean for the Colorado Springs Branch at the University of Colorado School of Medicine this summer and became the senior medical director for Oak Street Health in Colorado. He also will be pursuing an MPH at the Johns Hopkins Bloomberg School of Public Health and will continue serving as a trustee for the Colorado Springs Health Foundation. Wallace recently was elected to the Board of Trustees for the University of Puget Sound.

Omoniye Omotoso, MD '04, is approaching 10 years at a local federally qualified health center — LifeLong Medical Care. There, he serves as the associate medical director of pediatrics, collaborates on translational clinical research on trauma/toxic stress prevention and mitigation, and practices pediatric primary care. He is happily living in the Alameda, East Bay area with his daughter, Soley, who is excited for middle school this fall. They have been enjoying the outdoors — hiking and beach time.



Keydra Latisha Oladapo, GM '06, is the data management lead for the Centers for Disease Control and Prevention Epidemiology & Surveillance Branch in the Division of Viral Hepatitis. Oladapo will support expansion of the national

surveillance program through oversight of data management and informatics activities in the branch, lead data management activities, including coordinating technical aspects of the National Notifiable Diseases Surveillance System, serve as liaison to the Center for Surveillance, Epidemiology and Laboratory Services, provide oversight of several data modernization initiatives and collaborate with statistical, data science, artificial intelligence (e.g., machine learning), and public health professionals in the collection, linkage, processing, coding, classification and analysis of public health surveillance, research and administrative health data.

Moriah Rene Beck, GM '07, was promoted to full professor in the Department of Chemistry and Biochemistry at Wichita State University in Kansas.

Jaclyn A. Stephens, MSOT '09, was awarded a prestigious biomedical research grant, called the Boettcher Foundation Webb-Waring Biomedical Research Award for Early Career Investigators. This grant allows her to investigate, for the first time, if yoga can improve brain function in adults with chronic brain injuries. She will be integrating her skills as an occupational therapist and a cognitive neuroscientist to complete this project.

2010s

Jaclyn Brewer, MSOT '12, was promoted to supervisor of the Occupational Therapy department at Christian Hospital. She also got married this year.

Jennifer Reeves, BA '09, MD '13, started as an assistant professor in the WUSM Department of Obstetrics and Gynecology. She also serves as the Ryan Residency Director and assistant fellowship director in complex family planning.

Justin David Krogue, MD '15, has taken positions splitting time as an orthopedic surgeon at the University of California-San Francisco and as a clinical scientist at Google. His work at Google involves research into artificial intelligence applications for health care.



Kinjal Majumder, GM '15, started as an assistant professor of oncology and molecular virology at the University of Wisconsin-Madison.



Stephanie Weyrauch, DPT '15, MSCI '15, was elected to the American Physical Therapy Association Nominating Committee. She also was awarded the Washington University in St. Louis Program in Physical Therapy Outstanding Alumni Award at the American Physical Therapy Association Combined Sections Meeting.

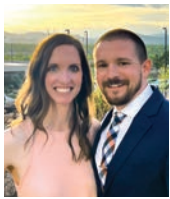


Christy Ranae Chadwick, MSDE '16, completed a master's degree in marriage and family therapy. She founded a private practice that provides hearing parents of children who are deaf or hard of hearing a safe place for community, connection and clarity.

Hilary Gallin, MD '17, is completing an obstetric anesthesia fellowship at Massachusetts General Hospital and will be staying on staff in the fall. She also recently won a \$100,000 Mass General Brigham Innovation Discovery Grant to support development of FastLine, her patent-pending medical device to improve vascular access.



Emily Moseley, MD '17, and **Daniel Weisel, MD '17**, were married at the Third Degree Glass Factory April 23, 2022.



Nicholas (Nick) Chandler, DPT '18, switched jobs to a high-level sports physical therapy facility, Team Rehab at Pro X Athlete Development in Westfield, Ind. He and his wife, Amy, are expecting their first child, a girl, in October.



Laura Jo Flanigan, MSOT '18, and Winston Anthony, doctoral candidate, Division of Biological and Biomedical Sciences, were married in June 2022 in St. Louis. The couple's

paths first crossed during the Med School Musical production "The Addams Family" in 2017. Through mutual friends, they reconnected and began dating in 2019. Since graduating from the Program in Occupational Therapy, Flanigan has been practicing occupational/hand therapy at Athletico Physical Therapy in St. Louis, specializing in the treatment of upper-extremity injuries and conditions. Anthony is studying microbiology in the laboratory of Gautam Dantas, PhD, professor of pathology and immunology.



Lucas Ashoke De, LA '03, GM '19, has developed a teaching system to produce researchers at the high school level capable of doing publication-quality research, based

on his WashU undergraduate and graduate education. The system is self-propagating and involves student-to-student teaching and can be achieved with any budget. The system was recently highlighted in EXPLO Elevate, an education innovation magazine.

2020s

Matthew Roy Copher, GM '21, is the senior clinical research coordinator at Rivus Wellness and Research Institute in Oklahoma City, Okla. The institute specializes in pharmaceutical clinical trials in psychiatric and behavioral health.



Marissa Christine Locke, GM '21, is a managing editor in the editorial department at The American Association of Immunologists. She serves both The Journal of Immunology and ImmunoHorizons.

1940s

Joyce Osborne Reeves, BSN '48; Nov. '21

1950s

Wayne O. Buck, MD '55; Feb. '22

Victor M. Carnes, MD '55; Feb. '22

Richard W. Collins, DE '57; Feb. '22

James G. Creveling Jr., MD '59, HS; March '22

Arthur J. Ecker, DE '57; Feb. '22

Joan M. Edgemon, NU '54; Jan. '22

Phillip B. Foreman, MD '55; Jan. '22

Gilbert P. Gradinger, MD '56; Jan. '22

Robert S. Mendelsohn, MD '54; April '22

George E. Murphy, MD '52; Jan. '22

Jean Reed, NU '55; May '22

Francis J. Riley, HS '56; Jan. '22

Kenneth D. Serkes, MD '51; Feb. '22

Paul B. Webb Jr., HS; April '22

1960s

Jon D. Cooksey, HS; Jan. '22

Joseph M. Davie, MD '68; Feb. '22

Georgia D. Henshall, OT '63; March '22

Donald R. Kirks, MD '68; April '22

Alan M. Londe, MD '61; March '22

Marvin H. Marx, HS; Feb. '22

Linda B. Shannon, PT '61; April '22

Robert M. Swenson, MD '63; March '22

1970s

Loren A. Crown, MD '72; May '22

Bruce F. Hertel, MD '72; Feb. '22

Michelle Kayhoe Hauspurg, PT '78; Feb. '22

Frederick R. Zivnuska, HS '77; Feb. '22

1980s

Richard L. Carpenter, HS '84; Feb. '22

1990s

John E. Rooney, HS '91; Jan. '22

Orthopedics teams up with soccer club

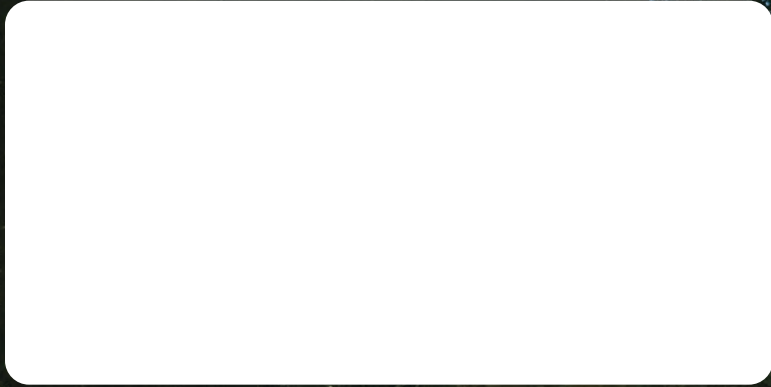
Major League Soccer expansion club St. Louis CITY Soccer Club (SC) has chosen physicians with Washington University Orthopedics as the club's official team doctors and BJC HealthCare as the team's medical services provider. As part of the relationship, CITY's newly built, state-of-the-art training facility will be named the Washington University Orthopedics High Performance Center. The training facility is just south of the team's soon-to-open Centene Stadium on Market Street, west of downtown St. Louis.



(Left to right) Robert Brophy, MD, the soccer team's medical director and head orthopedic surgeon, who is also chief of sports medicine and a professor of orthopedic surgery at the School of Medicine, Joan Magruder, group president for BJC HealthCare, and Lutz Pfannenstiel, St. Louis CITY SC sporting director, talk to the news media.

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Therapeutic horticulture (Left to right) First-year students Nnediri Ugochukwu, Danielle Wilder, Alice Jiang and Karan Joseph take time to feel the velvety lamb's-ear plant in the Missouri Botanical Garden's Zimmerman Sensory Garden on a recent fall day. "All of us really enjoyed the smells and, even the tastes, of the plants," Jiang said. "One plant smells like butter popcorn and another smells like maple syrup." This introduction to therapeutic horticulture was part of orientation activities, which emphasized mindfulness, connection to nature and well-being.



TIM PARKER