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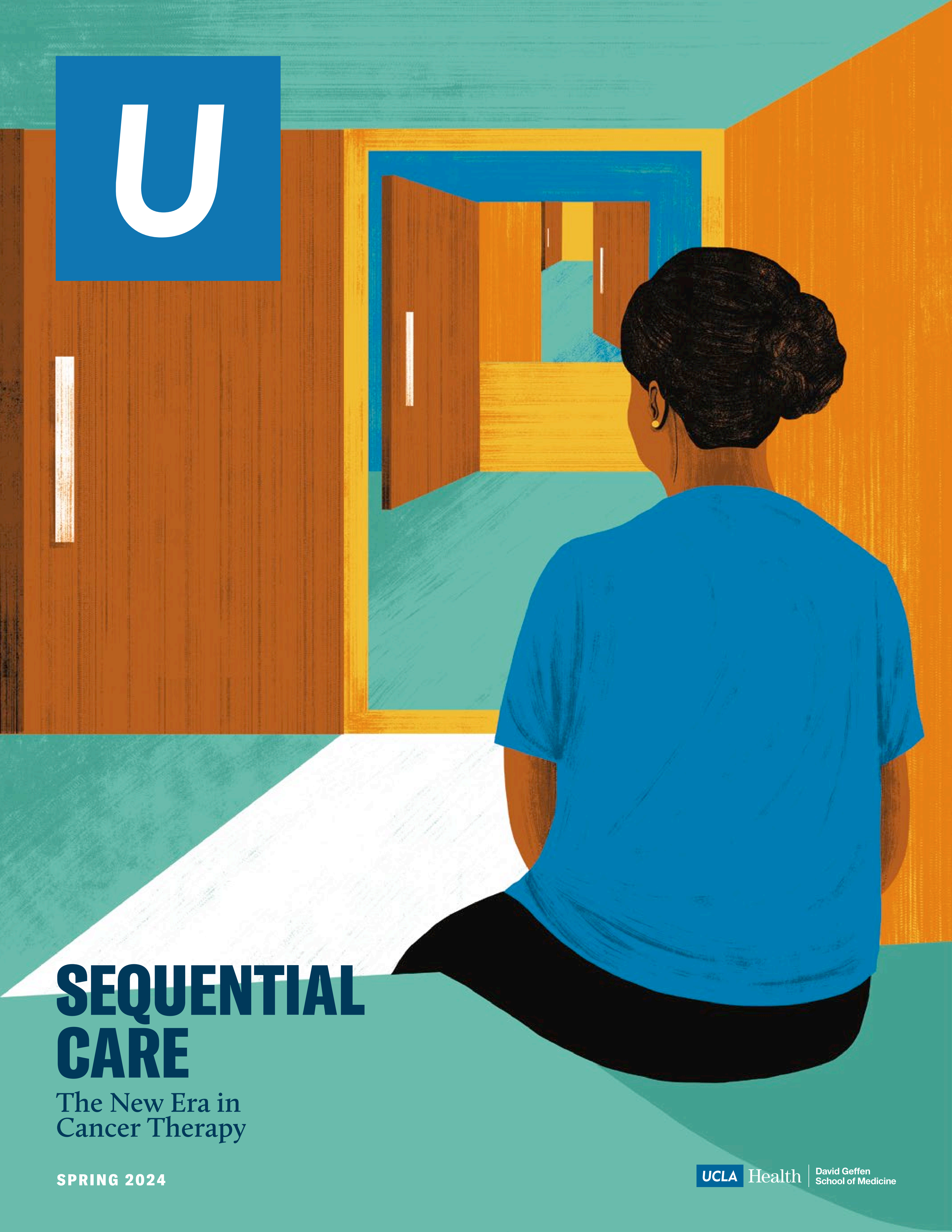

SEQUENTIAL CARE

The New Era in Cancer Therapy

SPRING 2024

UCLA Health | David Geffen School of Medicine

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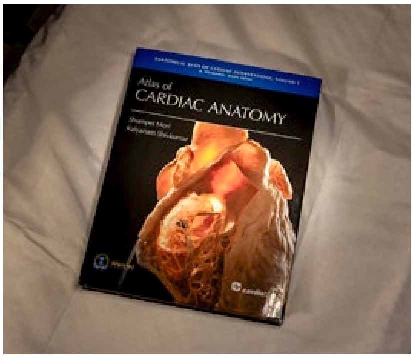

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>
> *Melissa Watkins*

BREAKTHROUGHS AND NEWS FROM UCLA HEALTH.

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Patients, or the families of patients, quoted and/or photographed or pictured in this publication have given their consent to have their names and/or images used and their stories told.

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The Cornerstone of Our Mission

"Not everything that is faced can be changed. But nothing can be changed until it is faced." When the civil rights activist James Baldwin wrote those words in 1962, he was referring to racial and ethnic discrimination. More than 60 years later, the David Geffen School of Medicine at UCLA is facing these challenges and addressing them by bringing change to medical education and health care.

Health care inequities and the social determinants of health are among the major problems to be addressed. Health inequities, as noted in the journal *Health Affairs*, are predominantly due to inequitable access to health care for racial and ethnic minorities. In order to address health inequity, the school of medicine has prioritized the pursuit of justice, equity, diversity and inclusion (JEDI) as core values in clinical service, research and education. JEDI is a foundation for clinical excellence and is at the heart of the David Geffen School of Medicine's approach to recruiting and educating its trainees. Our commitment to these values is central to maintaining the high standards of excellence we adhere to in educating the next generation of physicians, and it is a reflection of our social responsibility to the community.


COURTESY OF UCLA DGSOM

JEDI and medical excellence intersect in medical education and training. Research consistently confirms that diverse groups of both students and professionals achieve higher levels of productive and innovative problem-solving. Our goal is to promote an environment in which students from diverse backgrounds feel valued and included. This creates an enhanced educational experience, enriching and broadening perspectives. Inclusivity directly correlates with our ability to attract the highest-tier applicants who are drawn to a medical education that reflects the values that lead to equitable health care. Our medical students are admitted based on merit in a process consistent with state and federal law, and they are among the most sought-after medical students in the country.

The performance of UCLA medical students is a testament to this approach. Our students perform at the highest level, having averaged greater than a 96% pass rate on the most recent shelf exams — the subject-based, standardized tests to evaluate knowledge following clinical rotations — and a 99% first-time pass rate on the United States Medical Licensing Examination Step 2 Clinical Knowledge exam. In recognition of their accomplishments, multiple students have been awarded highly competitive research fellowships from the National Institutes of Health, as well as other research fellowships. Students have been recognized with other awards, such as the American Medical Women's Association Leadership Award and the United States Public Health Service Awards for Excellence in Public Health. This success continues in the residency match each year. Our warmest congratulations to the graduating class of 2024, who will continue training at leading residency programs nationwide.

There is no conflict between our institutional goals of excellence in research, education and community engagement and the values of diversity and inclusion. To achieve health equity for all, we are training future generations of health care providers who are not only excellent physicians and scientists, but also sensitive to the problems that confront so many people from underrepresented and underserved populations. Students and faculty members are held to the highest standards of academic excellence, and we are enriched by the diverse experiences each brings to our community.

We reaffirm our commitment to fostering an inclusive environment that nurtures mutual respect and civil discourse. It is essential that we be united in valuing our shared humanity and in seeking common ground, and we stand in agreement with former-President Jimmy Carter when he said, in accepting the Nobel Peace Prize in 2002, "The bond of our common humanity is stronger than the divisiveness of our fears and prejudices."

Steven Dubinett

Steven M. Dubinett, MD (RES '84)
Dean, David Geffen School of Medicine at UCLA
Associate Vice Chancellor for Research

THEY GOT INTO MEDICAL SCHOOL, BUT THE UPHILL JOURNEY CONTINUES FOR FIRST-GEN COLLEGE GRADUATES

By Alejandra Casillas, MD (FEL ’12), MSHS

HIGHER EDUCATION, ESPECIALLY WHEN it comes to law and medicine, is thought of as an equalizer, propelling individuals from under-resourced backgrounds to an upper echelon of society. But in recent years, it has become increasingly clear that first-generation (first-gen) college students continue to face specific challenges as they progress in academia. Despite the grit, resilience and intrinsic motivation that first-gen students display in order to succeed in higher education, there are persistent systemic factors that keep them from fully thriving in these settings.

In essence, the idea of higher education as “the great equalizer” has been a myth. And yet, little attention is typically paid to first-gen students, especially once they are in prestigious graduate programs (like medical school), the assumption being that because they were able to graduate from college, they must have “made it.”

In a study involving students at 27 medical schools around the country that colleagues and I published at the end of last year, we revealed empirical qualitative

ANNA PARINI

evidence of the barriers that first-gen college graduates experience in medical school. After analyzing these barriers, four major themes emerged:

- Isolation and exclusion
- Challenges with access to resources
- Lack of institutional support
- Need to rely on grit and resilience to survive

The added challenge is that despite succeeding in higher education, the farther up the ladder these students move, the more the community of fellow first-gen college graduates shrinks. I know this on a personal level from my own experience as a first-generation college graduate, and this paradox is corroborated by the narratives of current first-gen college graduates in medical school in this study.

It also has been validated by earlier research, such as a 2023 study by UCLA Health and David Geffen School of Medicine at UCLA researchers that found that Black, Hispanic and Native American students who took the Medical College Admission Test (MCAT) were ultimately less likely to actually apply to medical school due to a range of barriers, one of them being having parents without a college degree.

It wasn't until recent years that this dynamic began to gain recognition and awareness, and support began growing for first-gen college graduates in medical school. After I joined the faculty of the David Geffen School of Medicine at UCLA in 2016, I started to mentor first-gen medical students, and in their stories I heard my own being reflected back at me. I remembered how I felt throughout my academic training — isolated, like an outsider.

My parents are amazing people, and they are my role models, but they did not have an education beyond the sixth grade. I was not equipped with the socio-cultural capital that likely plays a part in the life experiences of many of the folks we perceive as successful, or that allows people from higher socioeconomic statuses certain privileges or entry into unique educational opportunities.

And I remember feeling that my sense of isolation meant I was deficient in some way. There was no word or term to name this experience; "first-gen" wasn't something that was much talked about back then, and if it was, there was a stigma attached to it.

But now, as a faculty member at one of the nation's most prestigious medical schools, I have an opportunity to do something about it. In 2017, in partnership with "FirstToGo," a UCLA program for undergraduates, I hosted, with support of our dean's office, an event for first-gen UCLA medical students to assess their interest in forming a community to support first-gen college graduates in medicine. We thought it would be a small lunch session, but it ultimately evolved into an emotional event attended by close to 200 students from across all class years. As we launched into a discussion about being first-gen at the medical school, all this rich detail and threads came out — along with tears.

> WHATEVER IT IS IN YOUR LIFE THAT HAS FUELED YOU, BRING IT WITH YOU AS YOU MOVE FORWARD. DON'T HIDE OR SACRIFICE PART OF YOURSELF TO "MAKE IT." BRING IT ALL WITH YOU.

From that, the medical school's "First Gen" organization was born. I am grateful we can now name the experience for our first-gen community, and instead of feeling stigma, show that our struggles and life experiences are a picture of empowerment and persistence. I remind my students that their first-gen identity will be a gift for their future patients. Today, a sizable percentage of students entering medical school at UCLA are first generation, and we've gained a significant national reputation and have built supportive resources and community for our first-gen students. Now, we want to expand this effort across all strata in our health system community — not just for students, but also for staff, trainees and faculty. Places of higher learning and the academic ivory tower weren't originally built for people like us. We must find ways for our institutions to embrace our rich life trajectories.

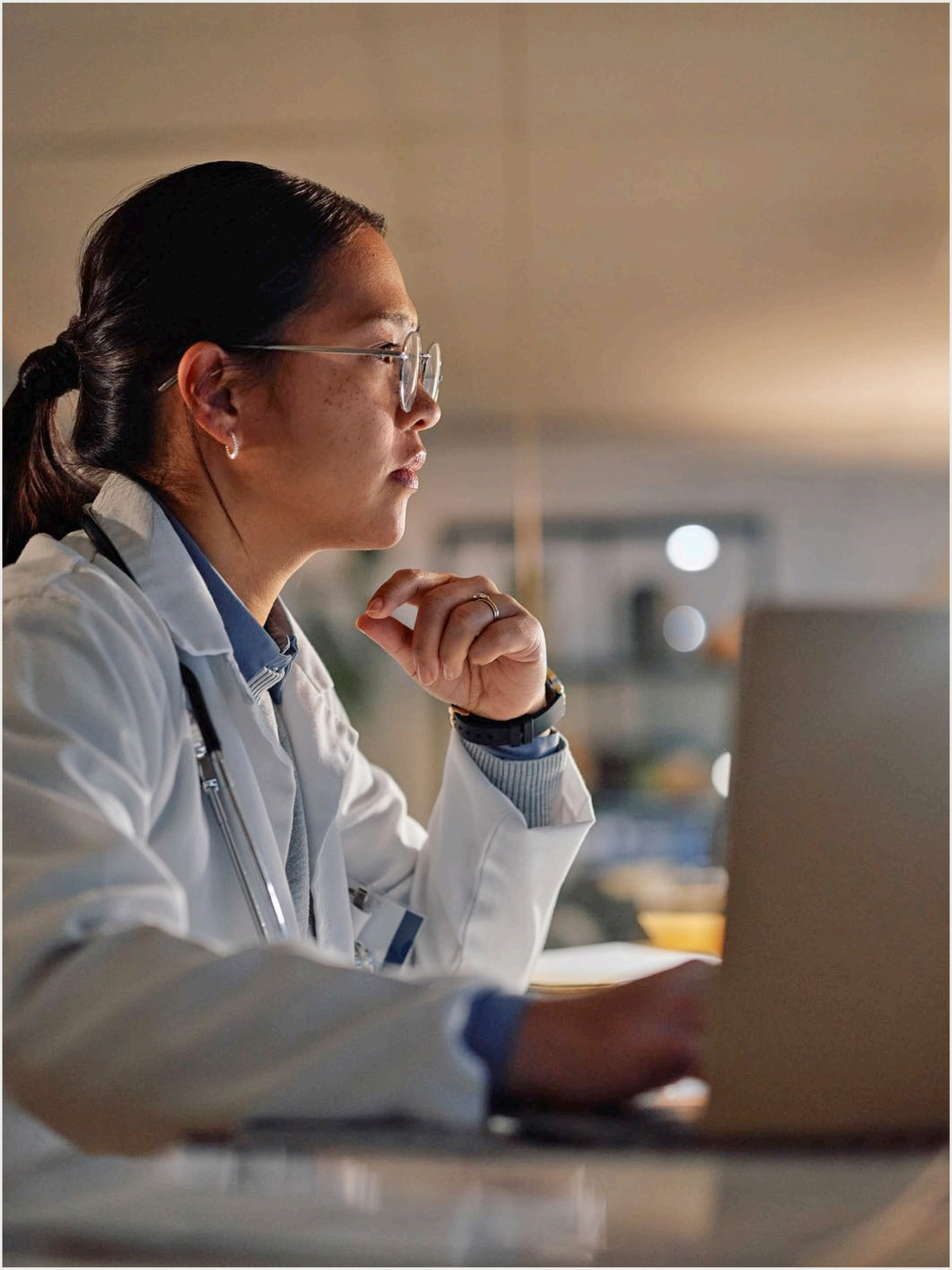
I think one of my fears growing up was of "making it" and having to leave my past behind. A bit of that, I think, has been instilled in many people in our community. We absorb images of what it means to be successful, and these don't necessarily encompass the way we grew up — being low income, having social challenges. We absorb the mantra: To succeed, get educated and become a different person. But I learned that for me, to succeed meant I had the freedom to express my full self. This I also tell my students: Whatever it is in your life that has fueled you, bring it with you as you move forward. Don't hide or sacrifice part of yourself to "make it." Bring it all with you.

How do we ensure that our first-gen college graduates in medicine feel not only that they are a part of this great institution, but also that they are celebrated? So that they bring their "full selves" with them? It is wonderful that more first-gen individuals make up the UCLA community, but our support systems and academic climate must continue to evolve. That is where the importance of evidence, like that from our study, comes in, so we continue to shift our academic institutions and health systems in a more equitable, diverse and inclusive direction. ●

***Dr. Alejandra Casillas** is assistant professor-in-residence of medicine and health services research.*

To read a Q&A in *U* Magazine with UCLA Health researchers about their study of obstacles hindering aspiring medical students, scan the QR code or go to: **uclahealth.org/news/what-obstacles-hinder-many-aspiring-med-students**

"Challenges Facing First-Generation College Graduates in Medical School: A Qualitative Analysis," ***JAMA Network Open***, December 13, 2023



iSTOCK IMAGES

HUGE SPENDING — BUT LITTLE SHARING OF RESEARCH RESULTS — ON CANCER DRUGS

By Carla Fried

THE U.S. HEALTH CARE SYSTEM DOES a fabulous job of attracting private sector capital to drug research: Close to 80% of the nearly $57 billion (some estimates are higher) in 2021 U.S. spending on cancer research came from the private sector (big pharma, biotechs, startups). And spending has grown since.

Cancer is expected to kill more than 611,000 Americans in 2024. The sharing of clinical trial results, which can help researchers work more efficiently and help physicians make better decisions, is an activity that the private sector is less enthusiastic about, find researchers from the UCLA Anderson School of Management.

The federal government issued a plea 15 years ago for the medical research community to do better at reporting findings. And it's not voluntary. In 2007 the Food and Drug Administration passed a new rule that any phase 2 or phase 3 trials (for all drugs, not just oncological) must report results within one year of a trial's completion. Fail to comply and a trial sponsor could be staring at a $10,000-a-day penalty. To date, the FDA has sent notices of noncompliance to five clinical trial sponsors, and no financial penalties have been levied.

To assess compliance, the Anderson researchers studied phase 2 and phase 3 oncological trials registered at the federal government's ClinicalTrials.gov website for research completed between 2008 and 2021. They then checked to see one year and three years after a trial was complete, if the results were reported in three platforms: at ClinicalTrials.gov, in a medical journal or shared at an annual meeting of the American Society of Clinical Oncology (ASCO).

After a series of data scrubs to refine their universe, they had more than 10,000 completed oncological studies to work with.

The researchers found that within one year of a trial ending, 6.8% of trial sponsors had reported the results in a journal/publication, 18% reported findings on ClinicalTrials.gov and 18.3% reported at an ASCO meeting.

Given that not all researchers can be presumed to have equal access to data in paywalled publications, nor the budget or impetus to attend industry gatherings, ClinicalTrials.gov is widely considered the best platform to ensure wide data sharing.

> THE SHARING OF CLINICAL TRIAL RESULTS, WHICH CAN HELP RESEARCHERS WORK MORE EFFICIENTLY AND HELP PHYSICIANS MAKE BETTER DECISIONS, IS AN ACTIVITY THAT THE PRIVATE SECTOR IS LESS ENTHUSIASTIC ABOUT.

Yet, three years after a trial ended, the researchers report that just 40% had posted results at ClinicalTrials.gov. Granted, that was nearly double the percentage who reported at an ASCO annual meeting (22%) and about four times the reporting in publications. (The slow process for peer-reviewed vetting of research by many publications may be a factor in the 10.5% publication-reporting rate after three years.)

All told, three years after completion 1.2% of the studied trials had reported across all three platforms while 56% had reported on at least one platform.

Trials funded by the National Institutes of Health (NIH) were the most likely to report results. Three years after completion, nearly three-in-four NIH-funded cancer trials had been reported on at least one of the platforms. That compares to 63% of private-industry-completed trials, and 50% of trials funded by "other" sources, which includes academia and government institutions beyond the NIH.

Prior Anderson School research that looked at a broader universe of clinical trials found that among the minority of completed studies that were even reported (30% at two years) the disclosure rate for studies funded by pharmaceutical companies was about 25% lower on average than the reporting by public-sector trial sponsors. When a pharmaceutical company was battling with a competitor exploring the same drug treatment, disclosure rates were even lower.

The researchers note their findings echo previous studies on clinical research reporting, suggesting insufficient progress by investigators and peer-reviewers in addressing key barriers, such as prioritizing reporting of all results, including inconclusive findings. ●

Carla Fried** is a freelance journalist. Her writing has appeared in* The New York Times, Money, Barron's *and* Consumer Reports. *This article originally was published online in* ***UCLA Anderson Review (anderson-review.ucla.edu)*. It is reprinted with permission.*

New California Institute for Immunology and Immunotherapy to spark research discoveries

THE NEW CALIFORNIA INSTITUTE for Immunology and Immunotherapy at the UCLA Research Park in Westwood aims to make Los Angeles the center of scientific innovation and industry. “The goal is to build the immunology equivalent of Silicon Valley in Los Angeles,” says UCLA Health CEO John C. Mazziotta, MD (RES ’81, FEL ’83), PhD. “This is probably the most exciting project I’ve worked on during my UCLA career.”

DAVID ESQUIVEL AND SUZANNAH MATHUR/UCLA

The goal of the new California Institute for Immunology and Immunotherapy, shown in this photo illustration, is “to build the immunology equivalent of Silicon Valley in Los Angeles,” says Dr. John C. Mazziotta, CEO of UCLA Health.

The institute will leverage emerging discoveries in immunology and immunotherapy to develop paradigm-shifting treatments for a range of diseases, Dr. Mazziotta says.

WHAT ARE IMMUNOLOGY AND IMMUNOTHERAPY?

Immunology is the study of the immune system, the body’s natural defense mechanism against infectious diseases and foreign substances. Immunotherapy is a form of treatment that harnesses this natural defense system to fight diseases, including cancer.

“There’s hardly a disease one can think of in which the immune system doesn’t either play a part in the pathogenesis or can play a part in the treatment,” says Owen Witte, MD, Presidential Chair in Developmental Immunology and founding director emeritus of the UCLA Broad Stem Cell Research Center.

Immunotherapy treatments are revolutionizing cancer care, Dr. Witte says, and show promise in treating autoimmune disorders and other diseases, such as Alzheimer’s. Research in immunology and immunotherapy has led to HIV treatments, monoclonal antibody-based treatments and messenger RNA vaccines, like those created to protect against COVID-19.

“I think immunotherapy is the next frontier in medicine,” says Linda Liau, MD (RES ’97, FEL ’98), PhD ’99, chair of the Department of Neurosurgery. “This is really an exciting time, where we’re now just seeing some glimpses of what could be possible in terms of cures to diseases.”

Adds Dr. Mazziotta: “Who knows what other diseases that today we don’t associate with the immune system have a link, and a link that could be exploited with immunotherapy? That’s why we need to bring research to this question immediately, because the payoff is so big.”

THE FUTURE OF IMMUNOTHERAPY

The California Institute of Immunology and Immunotherapy will bring together scientists and industry partners to streamline the process from scientific discovery to tangible treatments for patients, Dr. Witte says. “What this center will enable is to take the massive amount of research being done at a place like UCLA and other institutions we might associate with on a project-by-project basis, and drive it from the laboratory through the translational mechanism and into the reality of new medicines. The biggest blockage in that transition from new knowledge in the laboratory to patients is usually this incredibly difficult thing of getting something you can put into a human being in a clinical trial.”

The new institute will be two miles from the UCLA campus, at the former Westside Pavilion mall, which is being

> “The institute will leverage emerging discoveries in immunology and immunotherapy to develop paradigm-shifting treatments for a range of diseases.”

DAVID ESQUIVEL AND SUZANNAH MATHUR/UCLA

The former Westside Pavilion mall, two miles from the UCLA campus, is being reborn as the UCLA Research Park. In addition to the California Institute for Immunology and Immunotherapy, it will house the UCLA Center for Quantum Science & Engineering.

reborn as the UCLA Research Park. The 700,000-square-foot property, acquired at the end of 2023, will also house the UCLA Center for Quantum Science & Engineering.

The research park and immunology institute are supported by state, university and philanthropic funds. The state already contributed $200 million to help acquire the Westside Pavilion property.

"Leveraging the next waves of technology and science — quantum computing and the immense potential of immunology — the UCLA Research Park will cement California's global economic, scientific and technological dominance into the 22nd century, and beyond," California Gov. Gavin Newsom said at a news conference in January.

Intellectual properties developed through the institute will also be an economic driver, benefitting the scientists, associated industries and UCLA, Dr. Mazziotta says. The university can also choose to co-invest in start-up companies that emerge around the new treatments created at the institute, he says.

Fundraising for the project began six years ago, drawing support from philanthropists across the state. Among the donors is Eric Esrailian, MD (FEL '06), chief of the Vatche and Tamar Manoukian Division of Digestive Diseases. "I've always been inspired by pioneering projects," Dr. Esrailian says. "I think about the legendary institutes that are contributing to the world of science now, like the Broad Institute in Boston, and always wondered what we could do in Los Angeles. And the mission was to create the best institute of its kind in the world."

The research park building is now being renovated to house laboratories, and recruitment of scientists and scholars for the Institute of Immunology and Immunotherapy is underway. "Given the university's expertise and state-of-the-art facilities, we are expecting to attract the world's best scientists in immunology and immunotherapy, as well as top students," Dr. Mazziotta says. "I can't think of a disorder in which a better understanding of the immune system wouldn't be helpful in designing better treatments or minimizing the impact of disease, so there are no real boundaries to what the kinds of investigations done here can lead to."

— Sandy Cohen

Positive childhood experiences are linked to improved mental and physical health in adulthood

A NEW STUDY FINDS THAT DIFFERent types of positive childhood experiences (PCEs) — defined as having supportive relationships and nurturing environments — are strongly associated with improved mental and physical health in adulthood. The study by UCLA Health researchers suggests that these experiences might be especially protective against the effects of early-life adversity.

Using data from the Panel Study of Income Dynamics (PSID), researchers measured five different types of PCEs in 7,105 adults living across the United States, including support from peers, school atmosphere, safety in the neighborhood, community support and nurturing parental relationships. Researchers then used statistical models to test how each of the five PCE types relates to overall health and various health conditions in adulthood.

When participants reported having strong peer relationships during childhood, a supportive school environment and a neighborhood they felt safe in while growing up, they were less likely to report various health problems in adulthood, even individuals who had experienced childhoods with more adversity. The strongest impact of these PCEs was on mental health outcomes.

Positive childhood experiences have long been seen to protect against the health effects of childhood adversity, either by providing strong social supports to help counteract childhood hardships or by promoting health. Decades of evidence have shown that various forms of childhood adversity and adverse childhood experiences (ACEs) harm health over an individual's lifetime. ACEs are defined as significantly stressful or traumatic childhood events, and for this study, ACEs include a childhood history of experiencing neglect, abuse or household challenges including having parents who were divorced or separated, witnessing intimate-partner violence in the home or having a parent with a mental illness or a substance-use disorder.

Researchers found that PCEs were linked to better health outcomes, even in the face of the negative effect of adverse childhood experiences on adult health. The study supports prior evidence that positive student-teacher relationships are associated with improved physical and mental health and less substance use. Supportive childhood peer relationships are also associated with lower depressive symptoms, and school connectedness in childhood is associated with protection from emotional distress, suicidal ideation, sexually transmitted infection diagnosis and substance use in adulthood.

"Having a positive experience in school and feeling safe in one's school and neighborhood appear to significantly improve mental and physical health outcomes in adulthood regardless of one's exposure to adverse childhood experiences," said Jaime La Charite, MD, a pediatrics and internal medicine physician. "By implementing interventions to enhance school atmosphere, peer interactions and neighborhood safety, we could potentially see a reduction in adverse mental and physical health outcomes throughout adult life."

While the PCEs of supportive parenting relationships have been well-recognized as protective for health outcomes, the study authors suggest that because peer support, school climate and neighborhood safety appear to be linked most strongly to improved adult health, it's crucial to also invest in research and interventions in schools and neighborhoods during childhood to promote lifelong health. These interventions could improve the health of entire populations, even among those who have faced adversity and trauma.

— Vanessa Villafuerte

MIKE ELLIS

"Specific Domains of Positive Childhood Experiences (PCEs) Associated with Improved Adult Health: A Nationally Representative Study," *Population Health*, December 2023

Parkinson's disease diagnoses must include a message of hope


iSTOCK IMAGES

AS PARKINSON'S DISEASE diagnoses continue to rise in the U.S., limited patient access to movement-disorder specialists means the job of delivering the often-devastating, lifechanging news often falls on primary care physicians or community neurologists who may not have the necessary expertise for this sensitive task. A new report by a UCLA neurologist and collaborators draws upon patient voices and lived experiences to identify the common pitfalls of discussing a Parkinson's diagnoses and creates a guidebook for how medical providers — from seasoned specialists to rural community physicians — can avoid them.

"I think there is a lot of mythology around this disease," says movement-disorders neurologist Indu Subramanian, MD (RES '00, FEL '02). "A lot of people say, 'I'm sorry, you have Parkinson's.' In fact, I think it's a very treatable disorder. Giving hope, giving the patient agency, is a critical part of the message. So, instead, the doctor should say, 'You have Parkinson's, and these are the things that you can do to live better, and here are some people who can support you, and I'm part of your team.'"

About 90,000 people are diagnosed with Parkinson's disease each year in the U.S., which has doubled from the previous estimate in 2012 of 40,000-to-60,000 diagnoses, according to a 2022 study funded by the nonprofit Parkinson's Foundation. The study states the reason for the greater incidence in diagnoses remains unexplained.

About 1 million people in the U.S. live with Parkinson's disease, with the number estimated to increase to 1.2 million by 2030, according to the Parkinson's Foundation. There is no known cure for the disease.

How a diagnosis is delivered, and the words that are used, can impact a patient for years, with some patients falling into long periods of demoralization and hopelessness, Dr. Subramanian says. The report notes that similar to dementia, there is an increased risk of suicide within 180 days of a Parkinson's disease diagnosis.

While past studies have focused on, and methods have been developed for delivering bad news as it relates to cancer or dementia diagnoses, Dr. Subramanian said such guidance hadn't been well curated for Parkinson's disease.

The report makes a number of recommendations. Doctors should deliver the diagnosis in person and use correct terminology, avoiding euphemisms such as "honeymoon phase" to describe the initial period of the diagnosis. Additionally, it lists recommendations for doctors from report co-authors who live with Parkinson's disease, as well as past patient surveys. These recommendations include having doctors provide guidance and education for how patients should care for themselves, new treatment options, coping strategies and what lifestyle choices they should incorporate. Doctors may also wish to spread the news of the diagnoses over two appointments, recommending that the patient also bring in a family member or trusted friend to their second appointment if they came along to the first appointment.

— Will Houston

> About 1 million people in the U.S. live with Parkinson's disease, with the number estimated to increase to 1.2 million by 2030.

"Delivering the Diagnosis of Parkinson's Disease — Setting the Stage with Hope and Compassion," *Parkinsonism and Related Disorders*, December 21, 2023

ALAMY IMAGES

Adolescent overdoses now third-leading cause of pediatric deaths

AN AVERAGE OF 22 ADOLESCENTS 14-to-18 years of age died from drug overdoeses each week in the U.S. in 2022, raising the death rate for this group to 5.2 per 100,000 — driven by fentanyl in counterfeit pills, new research finds. Adolescent overdoses are now the third-leading cause of pediatric deaths, behind firearm-related injuries and motor vehicle collisions.

While the death rate is up, use of illicit drugs has fallen over the years. For example, excluding cannabis, the rate of illicit drug use among 12th graders has fallen from about 21% to 8% in the 20 years since 2002. But the increase in adolescent deaths from overdoses is the result of drugs becoming deadlier due to fentanyl, which is increasingly found in counterfeit oxycodone, benzodiazepines and other prescription pills.

“It is urgent that teenagers be given accurate information about the real risks, as well as strategies to keep themselves and their friends safe,” says Joseph Friedman, PhD ’22, a researcher and third-year medical student at UCLA. “It’s often impossible to tell the difference with the naked eye between a real prescription medication obtained from a doctor and a counterfeit version with a potentially deadly dose of fentanyl.”

The researchers found that adolescent overdoses were occurring at double the national average in Arizona, Colorado and Washington states between 2020 and 2022. They identified 19 hotspot counties — those with at least 20 overdose deaths and death rates higher than the national average, with Maricopa County in Arizona and Los Angeles County having the most fatal overdoses, at 117 and 111, respectively, during this period.

In addition, American Indian and Alaska Native adolescents had 1.82 times the overdose rates of whites between 2020 and 2022. And adolescents are overall likelier to use drugs in pill form rather than powder, which was previously the main fentanyl source. For instance, while 0.3% of high school seniors in 2022 reported using heroin, which comes in powder form, 5% reported nonmedical use of prescription pills the same year.

The researchers provide the following recommendations to combat these trends:

- Doctors should ask their adolescent patients if they or their peers were approached either in person or via social media about buying pills, or if they have used them without prescriptions.
- Educators and parents can discuss with adolescents the dangers associated with counterfeit pills; these efforts should be especially prioritized in hotspot locations.
- Clinicians, educators and parents can highlight the Safety First curriculum that emphasizes abstinence from drugs and provides information about risk reduction for those who do experiment with drugs, such as where to find and how to use the overdose-reversal agent naloxone.
- Naloxone should be available in schools, which should also adopt “no-questions-asked” pill-disposal programs and anonymous mechanisms students can use to ask about counterfeit pills and substance use without risk of punishment or embarrassment.

— Enrique Rivero

“The Overdose Crisis among U.S. Adolescents,” *The New England Journal of Medicine*, January 11, 2024

Orthopaedic surgeon designs customizable solution for infection prevention

POST-OPERATIVE INFECTIONS ARE among the most dreaded complications of all surgeries. In orthopaedic surgery, treating such infections requires removing and replacing the implant — a series of procedures that are costly, complex and sometimes unsuccessful. When bacteria adhere to the surface of orthopaedic implants, they form a self-protective layer of proteins called a biofilm, rendering them immune to antibiotics. A patient instead must return to the operating room for multiple surgeries to remove and replace the implant. For those who are older, lower income or immunocompromised, the risk of infection can be higher.

> “It is the ultimate perverse irony that these kids can defeat these deadly cancers, but spend much of their lives fighting persistent infections.”

Affecting one-in-100 patients who undergo hip or knee replacement surgery alone, implant-associated infections are costing the U.S. health care system billions of dollars. And finding a clinician who performs revision surgeries may be difficult.

Infection risk is constantly on the mind of Nicholas M. Bernthal, MD (RES ’12), who specializes in pediatric orthopedic oncology. “It is the ultimate perverse irony that these kids can defeat these deadly cancers, but spend much of their lives fighting persistent infections,” says Dr. Bernthal, chair and executive medical director of orthopaedic surgery.

Now, a point-of-care solution designed at UCLA could make implant-associated infections a problem of the past. Dr. Bernthal teamed up with Tatiana Segura, PhD (now a professor of biomedical engineering at Duke University), and a team of engineers at UCLA to develop a preventive strategy. Together, they designed a surface-modification platform that could be applied to implants during surgery that would kill or slow the spread of microorganisms.

Using a method called “click” chemistry (simple reactions that can happen quickly at room temperature), surgeons can combine the surface modification, which is made of two polymers, with the antibiotic or antimicrobial of their choosing. Once the final product is mixed, it can be applied directly to the implant by dipping, painting or spraying.

A study led by Dr. Bernthal and Dr. Segura showed that applying the antimicrobial coating to implants successfully prevented infection in 100% of mouse models. The researchers are now working with the U.S. Food and Drug Administration to set up clinical trials to test the technology in human patients.

Dr. Bernthal is optimistic about the surface modification’s ability to prevent infection, but he is convinced that a multipronged approach is still needed. “If we can get our patients as optimized as possible through immunomodulation, if we can get our implants re-engineered to be antimicrobial weapons — rather than sitting ducks for bacterial contamination — and if we can develop antibody-based treatments for the percentage of infections that get past those two barriers, then we finally can get the risk percentage very close to zero,” he says.

— Lauren Ingeno

“Point-of-care Antimicrobial Coating Protects Orthopaedic Implants from Bacterial Challenge,” *Nature Communications*, September 16, 2021

SCIENCESOURCE

MAKING STRONG STRONGER

Working in partnership, UCLA Health and Children's Hospital of Orange County aim to achieve a "Lollapalooza effect" to increase access to exceptional care for children with congenital heart disease.

Glen S. Van Arsdell, MD
Chief, Congenital Cardiovascular Surgery, UCLA Mattel Children's Hospital

Richard N. Gates, MD (RES '94, FEL '95)
Director, Cardiothoracic Surgery, CHOC Heart Institute Co-Medical Director, CHOC Heart Institute

In April 2023, UCLA Health and Children's Hospital of Orange County (CHOC) announced they will team up to create a new regional pediatric congenital heart care program. "Our shared vision is one program offered at two sites to provide patients with the best care in a location close to home," says Glen S. Van Arsdell, MD, chief of congenital cardiovascular surgery at UCLA Mattel Children's Hospital and chief of the new UCLA Mattel Children's Hospital-CHOC Congenital Heart Program. "We will use our considerable clinical strengths, integrate data and technology and provide seamless, convenient access to care." The long-range goal of the collaboration is to create a program that will become a leading destination for diagnosing and treating the full spectrum of congenital heart disease. "CHOC is very clinically focused, and it is a national leader in patient safety and outcomes. Now we will be collaborating with UCLA, which is perhaps the best research institution in the country," says Richard N. Gates, MD (RES '94, FEL '95), director of cardiothoracic surgery and co-medical director of the CHOC Heart Institute. "Add the two together and this will become a leading program in thought and innovation." Dr. Van Arsdell and Dr. Gates spoke about the UCLA Mattel Children's Hospital-CHOC Congenital Heart Program with Mark S. Sklansky, MD, chief of pediatric cardiology at UCLA Mattel Children's Hospital and founder and medical director of the UCLA Children's Heart Center.

Dr. Richard N. Gates (left), of Children’s Hosptial of Orange County, and Dr. Glen S. Van Arsdell, of UCLA Mattel Children’s Hospital.

JESSICA PONS

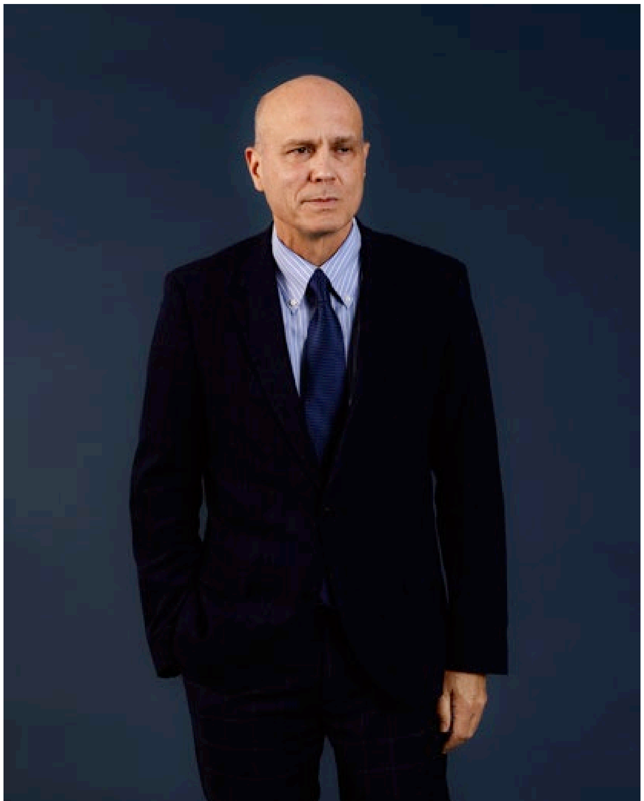
This is exciting for me to speak with you — this partnership between UCLA Health and CHOC is very exciting for both institutions and for Southern California. Glen, much of the momentum for this alignment has been due to your efforts and your vision. Where did this idea of, in your words, "one program, two sites" come from?

Dr. Glen S. Van Arsdell: One of the most important things in addressing issues in congenital heart disease is scale. That is important because if you have lots of patients, you can improve quality through studying and further understanding of each of the subpopulations within that. Let's say, for example, you have a population of 10 million, and out of those 10 million, there are 80,000-to-100,000 births. We can predict the number of children born within that population who are going to need heart surgery. It's not that many, really — maybe 300 to 400. If you can get scale, then you can say, "Let's develop a team around these larger numbers of patients and make sure that every patient who goes through is a data point for helping us deliver better care for the next child." The great programs in the world, the ones that really drive thought, that lead quality, that help to design new strategies, are ones that are a little bit bigger and that say, "We are going to learn from every patient." One program, two sites really is saying that together, we can get to critical scale and do it better.

CHOC and UCLA both are outstanding institutions in their own right, but they also are different in many respects. Richard, do you see challenges, or do you see opportunities, in those differences?

Dr. Richard N. Gates: CHOC is well known nationally for clinical outcomes and patient safety. There is tremendous opportunity in partnering with UCLA, which is one of the top academic research institutions in the country, to spur more research and innovation at CHOC. For UCLA, which also is excellent in clinical care and safety, there is opportunity to benefit from some of things that we do really well in those areas. One of the aspects of this relationship that is very exciting is that it is meant to be a true partnership — not a relationship of a senior partner to a junior partner. With that approach, the plan is to develop incredible faculty quality and leadership in both institutions.

Dr. Glen S. Van Arsdell, of UCLA Mattel Children's Hospital.



JESSICA PONS

Glen, would you like to add to that?

Dr. Van Arsdell: It's not to say there won't potentially be some differences between our two institutions, but we'll be equal partners in this process. That will be true not just in clinical care, but also on the research side. We'll build the basic-science research component of our congenital heart endeavors at UCLA because it's a big research campus, and we'll build the outcomes and quality research out of the CHOC campus. One will be a leader in thought in quality assurance and outcomes and clinical endeavors, and one will be a leader in thought in science. Both together will magnify our outcomes in all arenas and make this endeavor a world leader. CHOC is an amazing institution, and it has a very strong connection within its community. If we ask how do we make strong stronger, that's where to look.

There may be naysayers who look at this partnership and see a gulf between the two institutions, in terms of their individual cultures, and they would not bet on its success.

Dr. Gates: Yes, you could look at the programs and say they are somewhat opposite and have different focuses, but opposites attract. We each can build on and enhance the strength of the other. Working together in this way is going to mean so much for our patients and our communities, and, as Glen has said, it will make us global thought leaders in the care of children with congenital heart disease.

Dr. Van Arsdell: I think about this as building a foundation that allows us to compound our quality of care, compound our contributions to knowledge and compound our leadership over time. UCLA and CHOC will be here in a hundred years. We may not win the sprint out of the gate, but at the end of the race, our patients are going to get the best quality of care. Our team is going to be one of the most notable in the world, and because of that we are going to help the care of patients globally. Setting up the right foundation now is key to helping our communities and the betterment of the world 100 years from now.

What do you foresee as the impact on patient outcomes?

Dr. Gates: The answer to that is, I think, pretty simple: We've got now twice the number of high-quality physicians working closely together, and that's going to lead to better outcomes and better consistency in how we care for our patients. When families leave the hospital, they will know that they're going to continue to receive consistent care over the next dozen or more years through this system that we've developed together.

Dr. Van Arsdell: We take care of very complex problems. By joining our two strong institutions together, we double our strength. It is what the late investor and philanthropist


JESSICA PONS

Dr. Richard N. Gates, of Children's Hosptial of Orange County.

Charlie Munger called "the Lollapalooza effect," where you take greatness, put it together and boom! It explodes into something bigger. By putting our two institutions together, we will get a Lollapalooza effect for the children we treat and their families.

Dr. Gates: It's exciting for me to think of a partnership in which a premature neonate with cardiovascular disease, an infant with cardiovascular disease, a teen — even an adult with congenital heart disease that's been treated — can be cared for in one center, with continuity for their entire life. That's creating a very special center, and that will be very unique.

Have we already started to see this?

Dr. Gates: Yes, I think we've seen change already at CHOC. For example, there has been a lot of population growth in the Inland Empire, and patients from there are coming into CHOC, and then some are moving on to UCLA. If you walk into our operating room now as opposed to five years ago, it's a different place. So is our cardiovascular ICU. At CHOC, we're already experiencing a difference, and it's clearly for the better.

Dr. Van Arsdell: I think it's true at UCLA, too. Our relationship with CHOC has enabled us to reach more of a critical mass and to see even more patients with very complex problems. That means we do a higher volume of procedures, and our team gets more confident. We are able to move forward toward the next generation of how we take care of congenital heart disease. That is the benefit of critical mass, and the benefit to the community that comes from saying we're going to work together, we're not going to compete with each other. Ultimately it is the patient who will benefit.

Richard, you mentioned care along the continuum of a patient's lifetime. Let's talk more about the role for this partnership in supporting the care of adults with congenital heart disease.

Dr. Gates: For me, one of the most difficult parts of being a physician is to have a patient who crosses that 18-year-old gap — now, it's effectively 26 with the way insurance works — and then they're gone and out of your network, and they're being seen, in many cases, by cardiologists in the community who have specialized in normal adult cardiac care. And they can be really overwhelmed by these patients, and that leads to patients with congenital heart problems not necessarily getting the best possible care. With what we are building together, this center extends to the adult program — and arguably UCLA's is the best adult congenital program in the country. That means I'll be able to see my patients into their adulthoods, and that can only be a good thing for the patients.

Dr. Van Arsdell: One thing that seems very odd to say in 2024 is that adults with congenital heart disease still are a very underserved population. Even though UCLA has been the leader and established one of the first, if not the very first, adult congenital programs in the country, this idea persists that once a kid gets operated on, they're ok and that's it. Now, of course, we've learned that's not true, but there's still enough of that floating around that not every patient who has heart surgery or congenital heart disease is followed by an adult congenital specialist. We have to improve our societal responsibilities over time in that regard.

What excites you the most about this partnership?

Dr. Van Arsdell: I believe we're changing the landscape of congenital cardiac care in Southern California for the better. Together, we are building a culture of greatness. I think building this foundation, the way we're trying to build it, the culture of greatness will get stronger each year. That is how you make lives for babies with congenital heart disease better. Fundamentally, we have to ask, is there a way that we can eliminate congenital heart disease? You can't do that anywhere. You can't do that at CHOC alone. You can't do that at UCLA alone. But when you bring the greatness of Los Angeles, the greatness of UCLA, the footprint of CHOC and great thinkers together under the umbrella that is associated with the support of a community through philanthropy, we can ask those kinds of fundamental questions. We can make progress on those questions. You can only do that in a few places in the world.

Dr. Gates: There's a lot of excitement at CHOC right now among our intensive care doctors and our cardiologists and their ability now to communicate with their counterparts at UCLA and to begin to look at how they do things similarly, how they do them differently and how they can work together to do those things better. That's a very exciting thing for us to see. ●

To learn more about the UCLA Mattel Children's Hospital-CHOC Congenital Heart Program, scan the QR code or go to:
ucla.in/UCLA-Health-CHOC-Congenital-Heart-Disease

DR. MELISSA LECHNER

STEPS INTO THE *U* MAGAZINE SPOTLIGHT

While working at the Dana-Farber Cancer Institute in Boston during her residency, Melissa Lechner, MD (FEL '20), PhD, assistant professor of medicine in the Division of Endocrinology, Diabetes and Metabolism, observed patients who developed severe side effects from their immunotherapy treatments for cancer. "These side effects looked a lot like autoimmune disease," Dr. Lechner recalls. As a postdoc at UCLA, she worked with Maureen Su, MD, a pediatric endocrinologist with expertise in autoimmune diseases. Today, in her own lab, Dr. Lechner focuses on understanding the balance necessary to awaken the immune system to fight cancer without triggering an overactivation that turns the therapy toxic. "Our goal," she says, "is to understand how we can fine-tune these powerful therapies to make them more effective, but also safer for patients."

ANNA HIGGIE

WHEN DID YOU FIRST START TO THINK ABOUT SCIENCE?

My dad is a PhD scientist, and I probably first got interested in science as a kid roaming the halls of Saint Louis University Medical School and looking through my dad's microscope on snow days. And my mom is a hospital clinical laboratory scientist, so I kind of grew up in and around science without really noticing it.

WHAT WAS YOUR FIRST EXPERIMENT?

It was for a science fair when I was in first grade. I wanted to know if you could use soda to water plants. My very indulgent parents let me set up a number of small plants with a UV light in our basement, and I watered them with Coca-Cola, Sprite, sparkling water and plain water. Plain water, as it turns out, works best. I think my kill rate with those plants was about 90%. Even today, my children say I have a black thumb.

WHAT HAS BEEN YOUR GREATEST CHALLENGE IN YOUR WORK?

Getting comfortable with knowing that we're not going to be able to know everything. One needs to have flexibility in their thinking, and to accept that there's going to be a lot of failures. But that's OK; science is an iterative process.

WHO IS YOUR SCIENCE HERO?

Maureen Su. She has been an incredible mentor to me. She is thoughtful and generous, and she also challenges the science to be rigorous and asks the really hard questions. It has been very nice to have someone who has a fulfilling life outside of science but is also a really rigorous and successful professor.

WHERE ARE YOU HAPPIEST?

With my two daughters — watching them play soccer or ride horses. That is my happy place.

WHAT HAS BEEN YOUR BIGGEST "AHA!" MOMENT?

I completed residency training in Boston and came to UCLA for my fellowship in endocrinology and then the STAR Program to broaden my research training. Getting back into the research lab and returning to basic science, I found that I missed being in the lab and that I really wanted to be a scientist.

WHAT CHARACTERISTIC MOST DEFINES YOU?

Probably optimism. I think that helps keep me excited about coming back to the lab. In spite of the challenges we often face to secure funding and in other areas, at the end of the day I'm still really hopeful that we can move science forward and contribute something meaningful.

WHAT IS YOUR MOTTO?

In grad school, I had a lab mate who would say, "When you think you're going to quit, just show up the next day." And there were times when I felt like I wanted to quit, and he'd say, "OK, cool — see you tomorrow." So, if I have a motto, it might be, take each day as a fresh day and know that whatever happened yesterday, you can move on from it. Things will get better if you just keep showing up.

WHOM DO YOU MOST ADMIRE?

My dad. He is a PhD scientist, very dedicated to his students, his trainees and his research, but every night he would be home making dinner for us. He really balanced having an academic career and a family.

WHEN DO YOU NOT THINK ABOUT SCIENCE?

When I'm riding my horse. I grew up in Missouri riding horses, and I've always found being around horses very comfortable for me. When I got older, I took a 20-year break, but during the pandemic, I started riding again. Now my daughters ride, and a few months ago we bought a horse. It's just a really great way to escape.

TO WHICH SUPERHERO DO YOU MOST RELATE?

Wonder Woman. A strong female superhero is absolutely something to aspire to. And she came from a clan of female warriors, so I can get behind that.

WHAT KEEPS YOU UP AT NIGHT?

Grant support. I'm still pretty junior, and I sometimes wake up at 4 a.m. in a panic about not getting enough grant funding. Thankfully, I have senior mentors at UCLA who tell me it's okay, and it'll all work out.

WHAT ARE YOU MOST COMPULSIVE ABOUT?

I've always enjoyed running, and I try to do that a few times a week just to clear my head, get some exercise and get outside the lab.

HOW DO YOU WANT TO CHANGE THE WORLD?

Science is a really, really cool way that we can change our world for good, and I want to get people excited about it. All the undergrads who come through our lab, many of them will probably not become scientists, but I love that they are being exposed to real, high-quality science. And I hope that they're excited about it and that they talk to their friends and their families about it.

WHAT MUSIC DO YOU LISTEN TO WHILE YOU WORK?

Bach's Cello Suite No. 1 in G Major. I first heard it in a music class in college, and I was just struck by it. Any time I'm feeling like I need a little motivation, or just to kind of calm myself, I throw it on my phone and listen to it.

WHAT BOOK HAS INSPIRED YOU?

I recently listened to the audiobook of Michelle Obama's *The Light We Carry*. She inspired me with talk about how we can support one another in mentorship, and that really fits in with where I'm at right now in my life. I've been so lucky to have had some great mentors, and now I have the opportunity to be a mentor to my trainees. ●

SEQUENTIAL CARE

The New Era in Cancer Therapy

By Veronique de Turenne

With new targeted therapies improving survival rates and extending lives beyond expectations, many cancers are close to becoming manageable, chronic illnesses.

CHLOE CUSHMAN

The breast cancer diagnosis that upended Kate Pickert's life arrived in a trickle of worst-case scenarios. It seemed unlikely the occasional discharge from her nipple might be a sign of a serious problem. After all, Pickert was only 35 years old and had no family history of breast cancer. Yet, when she underwent a precautionary mammogram, the scan turned up a sprinkle of abnormal spots. Instead of the benign calcium deposits that her doctors expected, a biopsy identified them as HER2-positive breast cancer, an aggressive and fast-growing form of the disease. Then an MRI showed two invasive tumors growing in her breast, and Pickert's transition to a cancer patient in a fight for her life was complete.

"Like anyone hearing they have breast cancer, I was totally reeling and terrified," Pickert says. A journalist with a specialty in health care, she is the author of *Radical: The Science, Culture, and History of Breast Cancer in America* (Little, Brown Spark, 2019) and an associate professor of journalism at Loyola Marymount University in Los Angeles. "I had a 3-year-old daughter, and my husband and I had recently moved to L.A. I was worried about my family, and about the future."

Pickert's treatment at UCLA Health's Jonsson Comprehensive Cancer Center involved the long-standing trio of surgery, chemotherapy and radiation. Each is a scorched-earth approach that makes no distinction between cancer cells and healthy tissues. But her diagnosis coincided with a revolution in cancer care — a surge in the availability of targeted therapies. Unlike the blunt-force tactics of chemo and radiation, targeted therapies are all about precision. They exploit vulnerabilities that are specific to certain types of cancer and neutralize the rogue cells at the molecular level.

The targeted treatment that Pickert received was Herceptin, a drug developed at UCLA and approved by the U.S. Food and Drug Administration 25 years ago. It strips cancer cells of one of their greatest advantages — the ability to grow and spread. The drug does this by targeting a specific molecular structure that is present on the surface of HER2-positve breast cancer cells. Treatment with Herceptin attacks this molecule and reduces the risk of recurrence in patients with early-stage disease, which has transformed survival rates of HER2-positive breast cancers.

"I was very lucky to have been diagnosed at a time when so many new targeted treatments are becoming available, and also to have the option to be treated at UCLA," she says. "If you have access to clinical trials, if you have an oncologist who's also a scientist and understands the latest drugs and drug combinations, if you can put those things together, then cancer becomes a completely different landscape."

Now, as Pickert nears the 10-year anniversary of her diagnosis, cancer treatment is going through another seismic shift. As she pointed out in a well-received essay last year in *The New York Times*, new targeted therapies are being developed at a record pace. If a specific drug doesn't work for a patient, or when a treatment ceases to be effective, newly developed alternatives are often already available.

“I was very lucky to have been diagnosed at a time when so many new targeted treatments are becoming available,” says Kate Pickert, who received treatment for breast cancer at UCLA.”

JON ROU/LOYOLA MARYMOUNT UNIVERSTIY

Thanks to the speed of discovery, doctors can now move patients from one drug to another, each time extending their lives. This type of sequential therapy is improving survival rates, even for some people living with metastatic cancer. As a result, rather than a possibly fatal illness some types of cancer are on the cusp of becoming a manageable chronic disease.

"The evolution of cancer medicine is dramatic," says Richard S. Finn, MD (RES '00, FEL '03), professor of medicine in the Division of Hematology/Oncology, medical director of the Clinical Research Unit and director of the Signal Transduction and Therapeutics Program at the UCLA Health Jonsson Comprehensive Cancer Center. His research focuses on the development of targeted therapeutics, and on working to make them easily available to a wide range of patients.

"Before the '90s it was dismal, with very few drugs that often weren't all that effective. Now, when a patient becomes resistant to a therapy, there are often follow-up therapies that will work," he says. "The evolution of cancer care had been incremental for many decades. Now, it has just snowballed."

THE ERA OF TARGETED CANCER THERAPIES began with Tamoxifen, a drug that was originally developed as a post-coital contraceptive. It was subsequently found to interfere with the ability of estrogen to stimulate tumor growth and was approved by the FDA for use in cancer treatment in 1978. Over the next two decades, gradual advances in immunology, and in cell and molecular

CHLOE CUSHMAN

biology, began to give researchers a window into cancer at a genetic level. This led to the development of drugs able to act on specific molecular targets. Then, in the mid-1990s, a series of breakthroughs in gene-sequencing technologies revolutionized cancer research.

"Being able to ask what makes a cancer cell behave the way that it does, and to cause the illness that it does, is what really opened the door for the opportunity of targeted therapy," says Dennis J. Slamon, MD (FEL '82), PhD, director of clinical and translational research at the UCLA Health Jonsson Comprehensive Cancer Center and chief of hematology/oncology at the David Geffen School of Medicine at UCLA. "On top of that, we've learned a lot about the molecular control of the immune system, and about harnessing immune-based therapies to treat cancer."

Dr. Slamon is renowned for this groundbreaking research, which identified the role of the HER2 protein in driving cancer growth, and for the development of Herceptin, the resulting treatment. His tireless advocacy overcame the drug manufacturer's initial reluctance to invest in such a new technology and led to the availability of a treatment that has helped save countless lives. Today, Dr. Slamon is working to make effective breast cancer treatments available to an even wider population. He is the lead investigator on the NATALEE trial, a large, international clinical trial now in progress in medical centers in 20 countries. It is evaluating a targeted treatment for hormone receptor-positive breast cancers. This type of cancer affects between 65% and 70% of all patients diagnosed with the disease.

> **"THE EVOLUTION OF CANCER CARE HAD BEEN INCREMENTAL FOR MANY DECADES. NOW, IT HAS JUST SNOWBALLED."**
>
> DR. RICHARD S. FINN

THE TECHNOLOGICAL REVOLUTION THAT TOOK place in of the 1990's didn't just expand the scope of cancer research, it also dramatically reduced research costs. In 2007, the bill to sequence someone's genome ran about $1 million. The same tests today cost just $600.

These changes have opened up a new universe of cancer care, says John A. Glaspy, MD '79 (RES '82, FEL '83), Simms/Mann Family Foundation Chair in Integrative Oncology and professor of medicine at the UCLA Health Jonsson Comprehensive Cancer Center. They have also increased the speed at which treatment evolves. "Things that used to take an entire career for somebody to work out can now be done by a graduate student before lunch," he says. "That means the rate at which questions can be pursued, and new treatments explored, has increased dramatically."

The most common types of targeted cancer therapies are monoclonal antibodies and small-molecule drugs. The former are lab-made proteins that trigger the immune system to disrupt the life cycle of cancer cells in a variety of ways. This includes hindering cell growth, blocking blood supply and making the cancer cells visible to the immune system. Small-molecule drugs are exactly as they sound: compounds that, due to their low molecular weight, can easily enter a cancer cell. Once inside, they act on other molecules in a way that causes the cancer cell to die.

A newer approach involves chemically linking a monoclonal antibody to a drug. This is known as a antibody-drug conjugate, or ADC. The monoclonal antibody binds to a specific protein or receptor on the cancer cell, thus delivering the linked drug.

Another emerging area of research is bispecific antibodies. Their structure allows them to target two sites within a cancer and/or engage immune cells to attack it, thus expanding the therapeutic result.

Just like chemotherapy and radiation, targeted cancer therapies can cause side effects that range from mild to quite severe. These include headache, rash, mouth sores, neuropathy, hypertension and problems with blood clotting. Less common, but still a concern, is possible damage to the heart and other organs. That has made the order in which therapies are administered during a course of treatment as important as the drugs themselves.

"There are so many complexities involved when you're planning a sequence of cancer therapy. It's not just about the efficacy of a drug; it's also about the toxicity and tailoring the order of the treatment to the individual patient," says John M. Timmerman, MD, professor of medicine and a member of the UCLA Health Jonsson Comprehensive Cancer Center, who specializes in the blood cancer lymphoma. "Some patients may have a low blood count; some patients may already have pre-existing neuropathy. So, we have to look at everything as we decide on a course of treatment, like the side-effect profile of the drug and its efficacy."

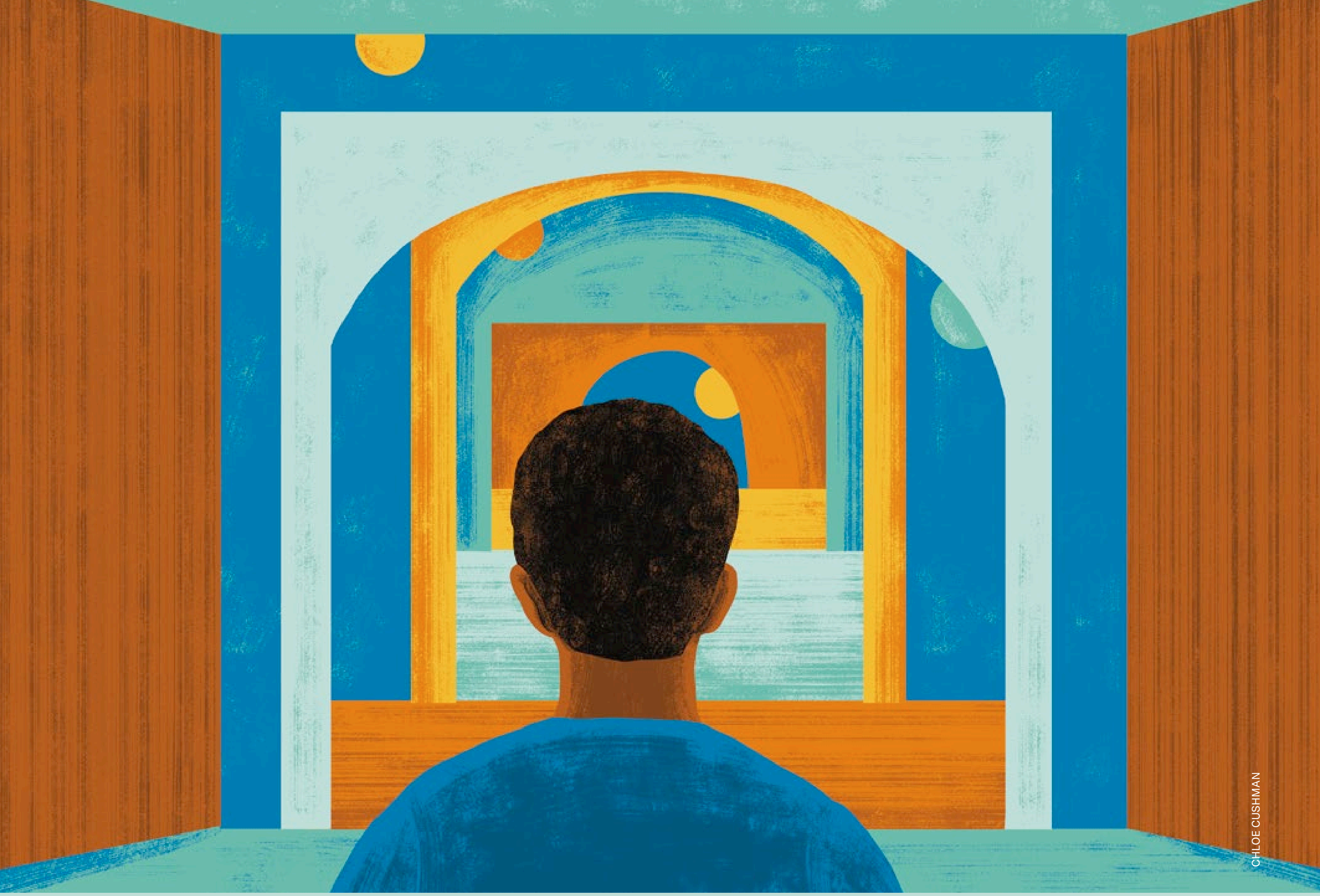
To help his patients understand all of the variables that are involved, Dr. Timmerman likens planning a course of treatment to playing a hand of poker. "I have a picture of somebody holding a good poker hand, jacks and kings and queens and aces, and the whole issue is which card to play when," he says. "We don't want to play our ace first if it's a very strong treatment, because it might suppress the patient's blood count or cause organ damage that could preclude being able to play some of our other very good cards later on."

> **"THERE ARE SO MANY COMPLEXITIES INVOLVED WHEN YOU'RE PLANNING A SEQUENCE OF CANCER THERAPY. IT'S NOT JUST ABOUT THE EFFICACY OF A DRUG; IT'S ALSO ABOUT THE TOXICITY AND TAILORING THE ORDER OF THE TREATMENT TO THE INDIVIDUAL PATIENT."**
>
> DR. JOHN M. TIMMERMAN

ACQUIRED DRUG RESISTANCE, WHICH OCCURS due to cancer cells' constant mutation, is another challenge. But thanks to the swift pace of targeted drug development, patients are often able to switch to new and emerging drugs, which allows them to continue to fight the disease.

This type of sequential treatment has been a lifesaver for Phillip Veteto, who was diagnosed with advanced liver cancer at the end of 2019. He was 63 years old and running his decorative concrete business in Oxnard, California, when, during the month of October, he gradually become too ill to work. "I went to see my doctor in Ventura for some tests to find out what was going on, and just four days later she called me to say I had cancer. She recommended that I go see Dr. Finn at UCLA as soon as possible. That's how I was able to get on these two studies," Veteto said. "By the time I got there in December, Dr. Finn looked at my scans and told me he was going to have to throw a 'Hail Mary' pass because it wasn't looking too good."

That Hail Mary was an early-phase clinical trial in which an immunotherapy infusion was combined with an oral drug that disrupts the growth of cancer cells by inhibiting certain proteins. Over the course of the next year, Veteto responded well to the drug. However, at the start of 2021, tests showed that the very large tumor in his liver had once again begun to grow. Prepared for this possibility, Dr. Finn was able to enroll Veteto in a different clinical study. This one looked at


CHLOE CUSHMAN

the efficacy of a monoclonal antibody in blocking a different protein found in solid tumors. Other than a brief break to deal with a heart problem, Veteto has remained in the study since then.

"It's remarkable — he has had advanced liver cancer and has been fully functional for the past four years," Dr. Finn says of Veteto's response to the targeted therapies. "And should he need it in the future, there are still other drugs to consider."

Veteto, along with his wife, Shirley, is deeply grateful for Dr. Finn's help in achieving this result. "If I had gone anywhere else to be treated, I know for sure that I wouldn't be here right now," Veteto says. "Dr. Finn told me I'll probably have to stay on some kind of treatment for the rest of my life. But that's the thing — I get to have a life."

BEING ABLE TO SEEK TREATMENT AT A COMPREhensive cancer center like UCLA has given patients like Pickert and Veteto a distinct advantage in their fight against cancer. It provides access to a wide range of doctors with expertise in leading-edge treatments, and also to early-phase clinical trials into novel drugs and therapies. But the reality is that for a large percentage of people diagnosed with cancer, this level of treatment isn't an option.

One of the barriers to care is the steep cost of leading-edge cancer therapies. Among the most expensive is a treatment known as CAR T-cell therapy, which has a high success rate in treating lymphoma. It involves removing certain immune cells


“If I had gone anywhere else to be treated, I know for sure that I wouldn’t be here right now,” says patient Phillip Veteto, with his wife, Shirley.

ALISHA JUCEVIC

from the patient, genetically engineering them to attack their form of cancer, and reintroducing them to the patient's body. A single infusion of the therapy costs in the neighborhood of $450,000.

But in order to worry about the cost of cancer treatments, patients need to have access to them in the first place. Because they are available only at large medical centers, people in rural areas are often excluded from the newest cancer therapies. And the obstacles to care don't end there. In culturally diverse cities like Los Angeles, where the U.S. Census says more than 220 different languages are spoken, effective communication becomes a barrier.

Before a patient can join a clinical trial, they need to complete a consent form. These are detailed documents that explain the goals of the trial, what patients can expect as trial participants and any risks or discomforts that they might experience as a result. Consent forms are often complex, and also quite lengthy. They sometimes run 20-to-30 pages or more.

"When we're running our clinical trials at UCLA, we're regularly consenting into many different languages. There's a lot of effort and planning that goes into being able to offer that extra piece," says Amy L. Cummings, MD (FEL '20), PhD, assistant professor in the Division of Hematology/Oncology, director of the UCLA Health Justice, Equity, Diversity and Inclusion Program and a member of the UCLA Health Jonsson Comprehensive Cancer Center. "We're starting to think very carefully about how we can address the barriers to care in a systematic way to start making this level of care available for everybody."

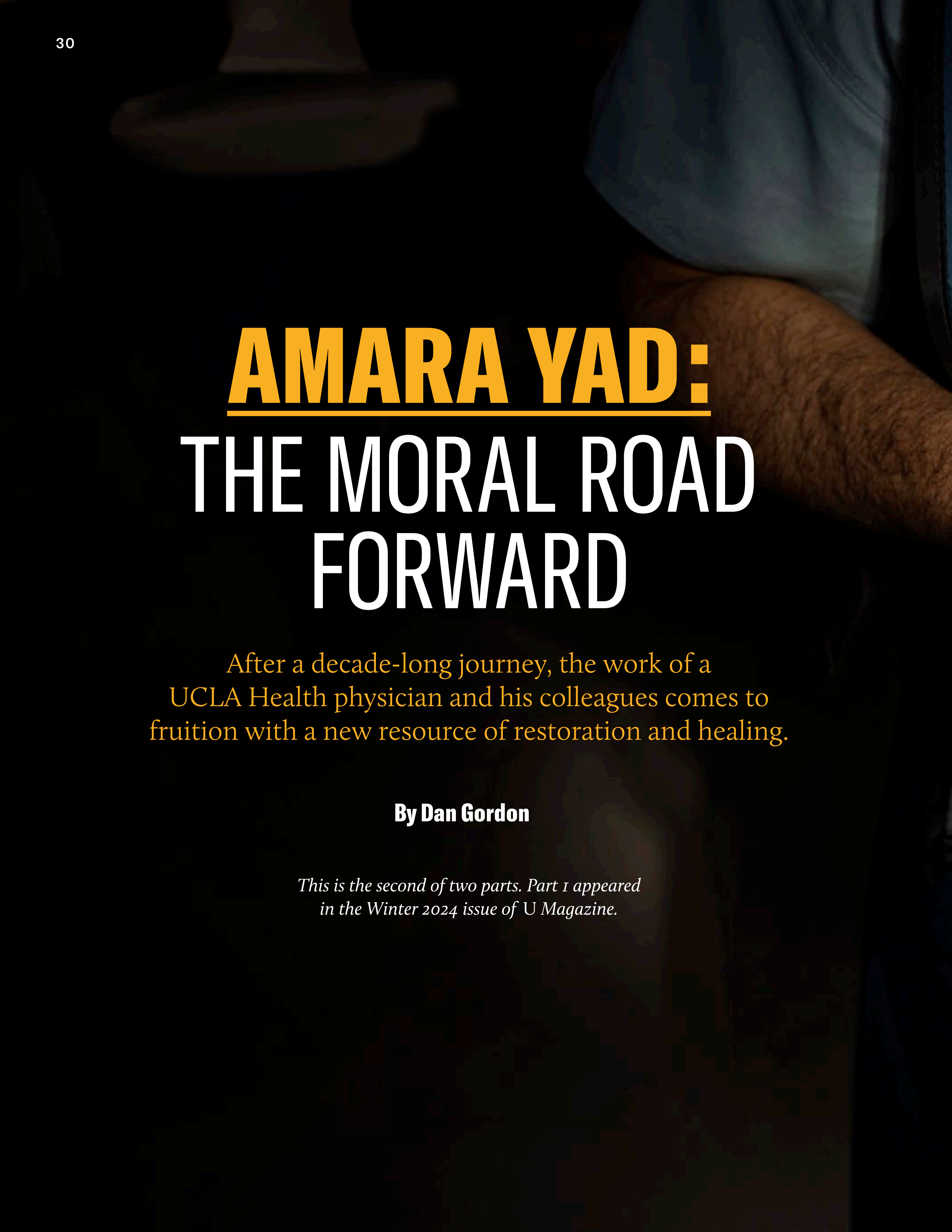
> **"WHEN WE'RE RUNNING OUR CLINICAL TRIALS AT UCLA, WE'RE REGULARLY CONSENTING INTO MANY DIFFERENT LANGUAGES. THERE'S A LOT OF EFFORT AND PLANNING THAT GOES INTO BEING ABLE TO OFFER THAT EXTRA PIECE."**
>
> DR. AMY L. CUMMINGS

While important, language is just one component of expanding the availability of treatment. Another is letting people know that clinical trials are available. "We are working to embed our clinical trial experts in the wider community, and to expand the opportunity for more people to benefit from the research we are conducting," Dr. Cummings says. "I think it's most powerful when it comes from the traditional cultural meeting places that people trust, like churches and barbershops and nail salons. These are the kinds of places where, when you put educational materials into place, it's easy to strike up a conversation."

In addition to attracting a diverse population of patients, widening the reach of UCLA's treatment centers is also a priority, Dr. Cummings says. "We're also embedding our academic oncologists in a variety of different places, like community clinics, hospitals and safety-net facilities, such as Martin Luther King Jr. Community Hospital, Charles R. Drew University and Olive View-UCLA Medical Center. Cancer is a journey, and the treatment can't be piecemeal. We are working to create a pathway, start to finish, that is available to as many people as possible." ●

__Veronique de Turenne__ is a freelance writer in Los Angeles and a frequent contributor to U Magazine.

For more information about the UCLA Health Jonsson Comprehensive Cancer Center and links to current clinical trials, scan the QR code or go to: **www.uclahealth.org/cancer**

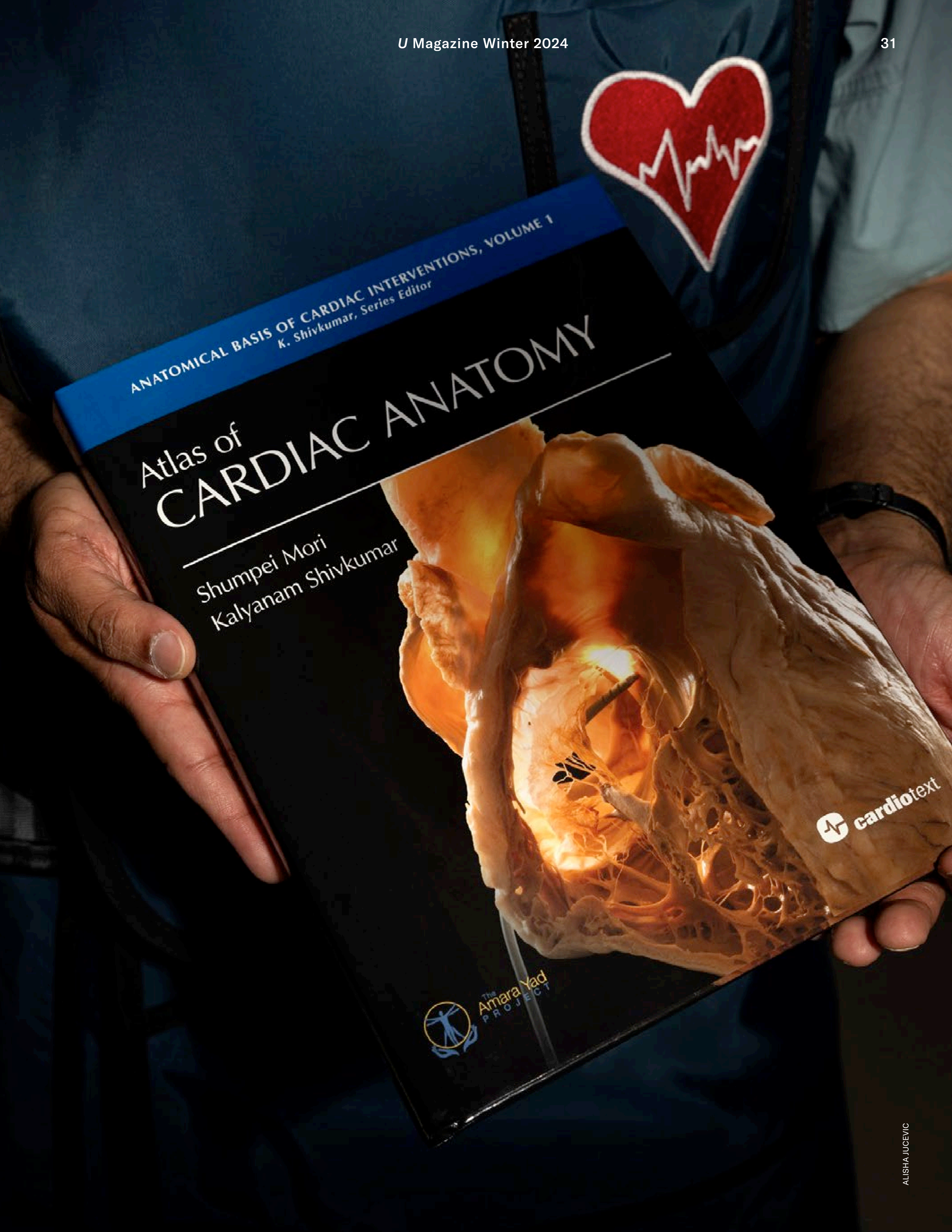


AMARA YAD: THE MORAL ROAD FORWARD

After a decade-long journey, the work of a UCLA Health physician and his colleagues comes to fruition with a new resource of restoration and healing.

By Dan Gordon

This is the second of two parts. Part 1 appeared in the Winter 2024 issue of U Magazine*.*



ALISHA JUCEVIC

When Dr. Eduard Pernkopf completed the first installment of his seven-volume *Topographische Anatomie des Menschen (Atlas of Topographical and Applied Human Anatomy)* in 1937, the discovery of penicillin was several years away, and Jonas Salk was a third-year medical student, 15 years from developing the vaccine that would eradicate polio. Imaging techniques that are common today — ultrasound, CT, MRI — were, if they were considered at all, merely science fiction speculation.

And yet, well into our current century, what was known simply as the "Pernkopf atlas" continued to be regarded as the preeminent resource of its kind. Mapping the human form down to the most minute detail through exquisite hand-drawn illustrations, the atlas was acknowledged as a masterpiece of both science and artistry. But the horrific nature of the authors and their methods had now become clear: Dr. Pernkopf, an Austrian anatomist who served as dean of the University of Vienna's medical school while overseeing the atlas' creation, was an avowed Nazi, as were the artists he employed. Many of the bodies portrayed on the atlas' pages were victims of Nazi terror, their executions often timed for when Dr. Pernkopf's team needed more subjects.

Even as circulation of the original volumes waned once the abhorrent details came into focus through a series of revelations in the 1980s and 1990s, their influence persisted. "For many years, Pernkopf was to anatomy what Bach was to music," says Kalyanam Shivkumar, MD (FEL '99), PhD ('00), director of the UCLA Cardiac Arrhythmia Center. "Everything after Pernkopf was a version of Pernkopf."

Part one of this story chronicled how Dr. Shivkumar ("Shiv" to those who know him), an internationally renowned electrophysiologist and leading innovator of heart interventions, became deeply disturbed upon learning that the premier anatomic atlas for the types of nerve procedures he wanted to develop carried such a vile origin story. Unable to let go of his revulsion, Dr. Shivkumar decided to embark on a decade-long effort, with his UCLA colleagues, to surpass what many had deemed unsurpassable — rendering Dr. Pernkopf's work obsolete through a series of original anatomic atlases and making them available to colleagues around the world via online, open-access publishing.

Part two of our story touches on both that journey and its evolution into something greater: Amara Yad (a combination of Sanskrit and Hebrew translating to "the immortal hand"), an initiative aiming to restore the sanctity of the doctor/patient relationship through education and actions that address historic transgressions.

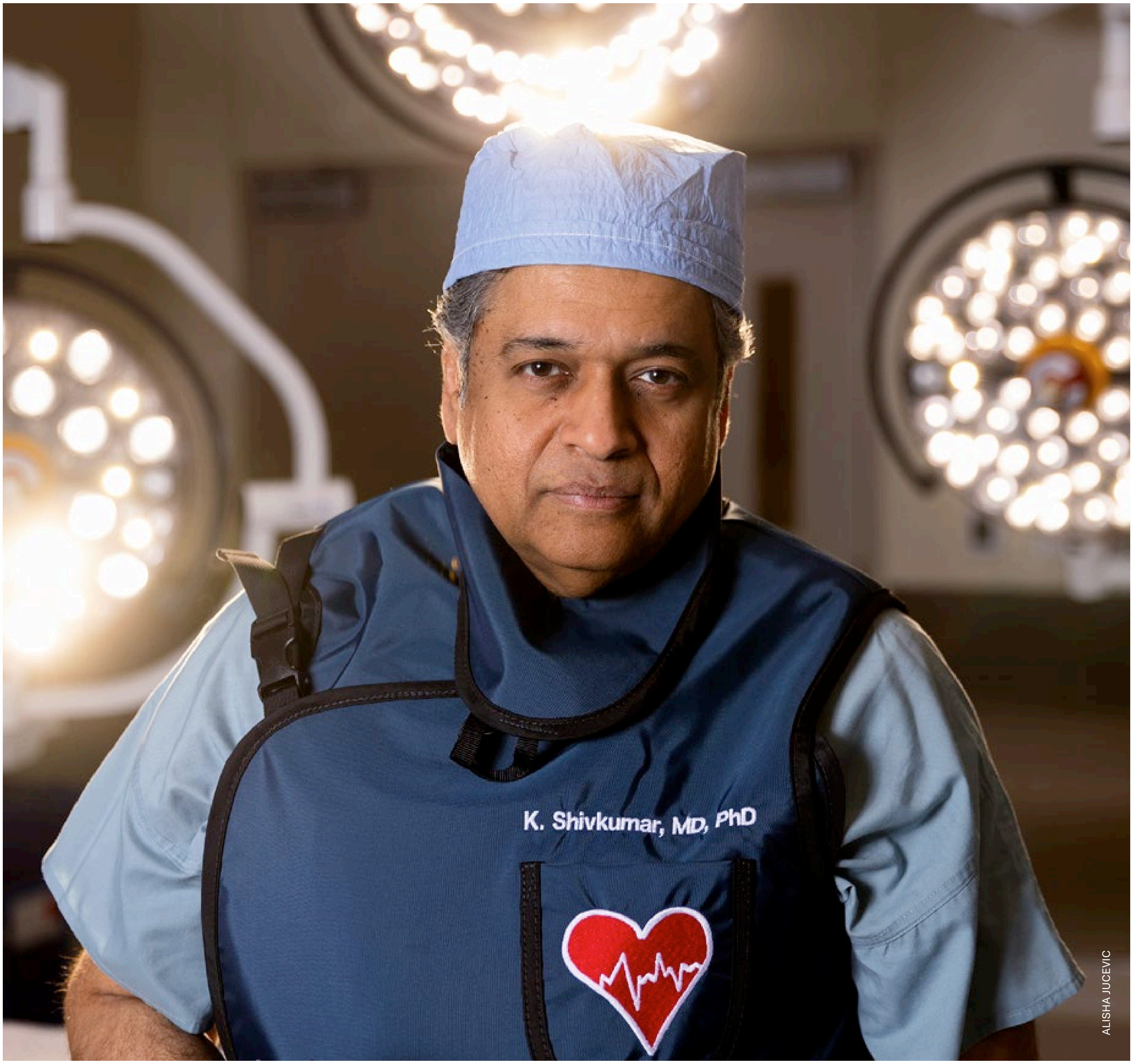
"THERE'S AN OLD SAYING, 'THE EYES CANNOT SEE WHAT THE MIND DOES NOT KNOW.' WITHOUT AN ATLAS, YOU CAN'T INTERPRET. IMAGING DATA WON'T BECOME KNOWLEDGE, AND KNOWLEDGE WON'T BECOME WISDOM WITHOUT PROPER INTERPRETATION."

DR. KALYANAM SHIVKUMAR

ANATOMY IS THE OLDEST CLINICAL discipline, dating back to at least the third century B.C., and it continues to serve as the starting point in the education of first-year medical students. But as medicine advanced at breakneck speed in the latter part of the 20th century, some questioned its relevance to clinical practice.

"During medical school, I was told time and again by professors that anatomy was a dead science," recalls Jamil Aboulhosn, MD '99 (RES '02, FEL '05, '06), director of the Ahmanson/UCLA Adult Congenital Heart Disease Center. "They said if you wanted to rise in academic medicine, you had to go subcellular, to DNA and RNA — that everything about anatomy was already known. What's funny is that about a decade after that, it became clear that anatomy was still at the center of medical innovation and advancement."

As a pathologist who subspecializes in cardiovascular diseases, Michael Fishbein, MD (RES '75), has always relied on anatomy for his work. But many specialists had little use for the discipline, he notes, until advances in imaging led to the rapid growth of interventional procedures among cardiologists, radiologists and others — necessitating a detailed and nuanced grasp of anatomy for diagnosis, interpretation of images and minimally invasive treatments. "All of a sudden, everyone wants to come and see hearts," muses Dr. Fishbein, Distinguished Professor Emeritus of Pathology and Medicine. "If, rather than opening up the chest, they can go in through the vessels, they have to know where they're going and how to get there."



ALISHA JUCEVIC

"Human anatomy isn't going to change, but our understanding of it gets better," says Dr. Kalyanam Shivkumar.

An anatomic atlas, be it the ill-gotten set of volumes produced by Dr. Pernkopf or the one Dr. Shivkumar and his team set out to replace them with, provides a road map to be studied prior to heart procedures that rely on catheter-based techniques involving the coronary arteries and veins, or that target the cardiovascular nervous system. In Dr. Shivkumar's world, which involves treating patients with complex, life-threatening arrhythmias, knowing every nook and cranny makes all the difference. When performing a catheter-based treatment on a young person with an abnormal rhythm in a sensitive region of the heart, missing the target by a few millimeters can result in the patient needing a pacemaker for life.

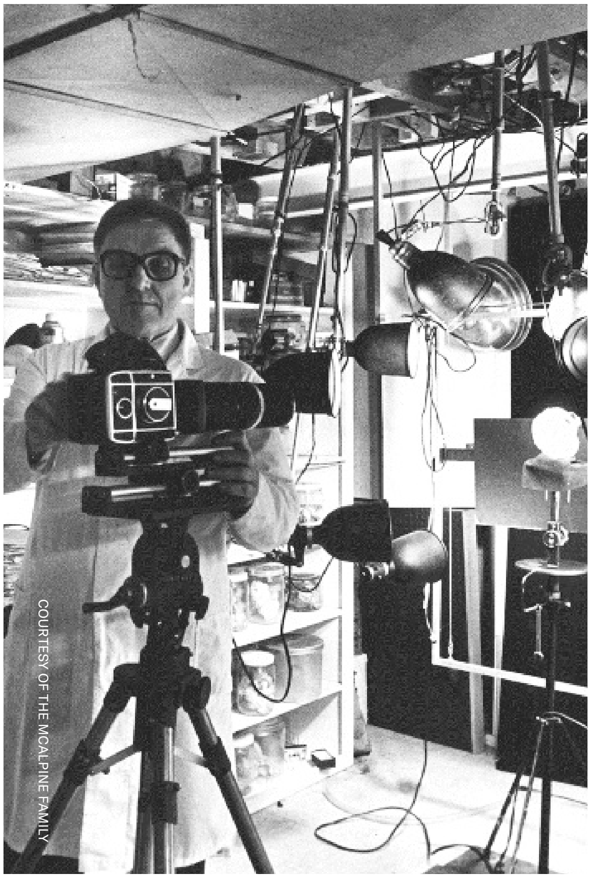
And on that score, high-tech imaging doesn't replace the anatomic road map. "There's an old saying, 'The eyes cannot see what the mind does not know,'" Dr. Shivkumar says. "Without an atlas, you can't interpret. Imaging data won't become knowledge, and knowledge won't become wisdom without proper interpretation. Human anatomy isn't going to change, but our understanding of it gets better."

WHEN DR. SHIVKUMAR TOLD anatomists of his intention to create a map of the human heart that would render the Pernkopf atlas and its derivatives moot, he encountered heavy skepticism. With their arresting images and painstaking detail, the volumes created by Dr. Pernkopf and his group were considered unbeatable. Even Dr. Shivkumar, for all his confidence, recognized the daunting task. "It was like climbing a mountain," he says.

Dr. Shivkumar never doubted that he could assemble the expertise. As his co-author on the first of seven planned volumes of *Atlas of Cardiac Anatomy*, he recruited Shumpei Mori, MD, PhD, a physician-scientist who specializes in cardiac anatomy and advanced clinical imaging at the UCLA Cardiac Arrhythmia Center. Over the course of the next decade, more than a dozen faculty and trainees would devote significant time to climbing the mountain.

One of the major challenges to producing a comprehensive resource on cardiac anatomy is the need to acquire a sufficient supply of specimens — the donated hearts of deceased patients — to capture the organ's variations. For certain structures, understanding all of the possibilities can require dissecting a couple hundred organs. Dr. Pernkopf faced no such challenge, relying on his connections with the Nazi regime for procurement. At UCLA, specimens were ethically obtained from a variety of sources, including OneLegacy, the nation's largest organ-procurement organization, which provided donor hearts unsuitable for transplantation; the National Institutes of Health, which also helped to fund the work; and the UCLA Donated Body Program.

Foundational to the effort was Dr. Shivkumar's acquisition and digitization of approximately 4,000 slides that had been languishing in the basement of the Cleveland Clinic Library — detailed images taken by the late cardiac surgeon Wallace A. McAlpine, MD, for an anatomic atlas of the heart published in 1975. While that work had provided great utility for its time, an update was needed. "Dr. McAlpine's atlas was published when the major treatment was open-heart surgery," says Peter Hanna, MD (FEL '21, '23), PhD '21, a UCLA cardiac electrophysiologist who contributed to the


COURTESY OF THE MCALPINE FAMILY


ALISHA JUCEVIC

Cardiac surgeon Dr. Wallace A. McAlpine (left) set up a studio in the basement of his Ohio home to photograph human hearts for his *Heart and Coronary Arteries: An Anatomical Atlas for Clinical Diagnosis, Radiological Investigation, and Surgical Treatment*, published in 1975. At UCLA, Dr. Shumpei Mori (right) established his own digital studio adjacent to his lab in the Centers for Health Sciences, where he took more than 50,000 photographic images for the new *Atlas of Cardiac Anatomy*.

new atlas. "The field of interventional cardiac electrophysiology didn't exist."

Today, the diagnosis and treatment of heart rhythm disorders typically involves the placement of catheters and the delivery of radiofrequency energy to modify the heart's architecture. "The first goal is always to do no harm," Dr. Hanna says. "And because we don't have direct visualization like a cardiac surgeon would, we have to know where we are when looking at an image."

Beyond making use of Dr. McAlpine's photography, the group headed by Drs. Shivkumar and Mori replicated his "perfusion-fixation" technique. Upon obtaining a donor heart — often in response to a call that came in the middle of the night, from a hospital two or more hours away — it was crucial to preserve its three-dimensional structure; this required inserting plastic tubes hooked to a pump to maintain pressure perfusion for 24 hours in a cold room.

Once the heart was "fixed," it was brought to a photography studio set up by Dr. Mori. With the heart mounted on a tripod atop a rotational table and illuminated by six adjustable LED light sources, Dr. Mori used a digital SLR camera with a 200-millimeter lens to systematically photograph the organ in various anatomic positions to create the undistorted versions featured in the atlas. Dissections were made depending on which chamber of the heart and which interventional procedure was to be covered.

"To show the progressive dissection with GIF clips, we needed to dissect the heart without changing its position on the tripod, and at every stage of the dissection we needed to capture the images," Dr. Mori explains. "This process of preparation, dissection and recording required patience, meticulousness, precision and time."

WHILE HE WAS OUTWARDLY CONfident in his team's ability to render the Pernkopf Atlas moot, Dr. Shivkumar admits harboring some initial concerns. "In the first year or two, it seemed very daunting," he says. But as his group approached the midway point of the 10-year undertaking, "I knew Pernkopf could be beaten."

"OUR ATLAS IS CLINICAL CARDIAC ANATOMY BY CARDIOLOGISTS, WHICH MAKES IT DIFFERENT FROM TEXTBOOKS OF BASIC CARDIAC ANATOMY WRITTEN BY ANATOMISTS."

DR. SHUMPEI MORI

Atlas of Cardiac Anatomy: Anatomical Basis of Cardiac Interventions, Volume 1, published in September 2022, features more than 200 full-color photographs of the human heart and its adjacent structures meant to serve as a foundational study of cardiac anatomy and a guide for those caring for patients with heart disease. In addition to the original high-resolution images and the previously unpublished, restored works from the McAlpine collection, the atlas includes 25 anaglyphs — three-dimensional images viewable with 3D glasses.

One of the recognized strengths of the Pernkopf atlas was its detailed display of the peripheral nervous system — over the years, nerve surgeons were particularly reliant on the images for their complex operations. But the first volume of the UCLA atlas provides a tour through parts of the anatomy Dr. Pernkopf's group couldn't have envisioned would bear fruit. The enhanced images establish new road maps not only for electrophysiologists like Dr. Shivkumar and his colleagues, but also for neurosurgeons, thoracic surgeons, pain-management experts and others. In the book's foreword, Francis E. Marchlinski, MD, of the University of Pennsylvania, and William G. Stevenson, MD, of Vanderbilt, describe viewing anatomic structures heretofore shown as silhouettes on fluoroscopic imaging: "It is like having the lights turned on in a dark, yet familiar room."

"Our atlas is clinical cardiac anatomy by cardiologists, which makes it different from textbooks of basic cardiac anatomy written by anatomists," Dr. Mori explains. "Anatomic atlases, including Pernkopf's, are often shown using illustrations or with collapsed hearts that distort the cardiac anatomy. By showing the structural anatomy in far more detail and captured from clinically relevant directions, then sharing it without paywalls, our atlas can ensure safe and effective procedures for patients around the world."

Dr. Fishbein, the UCLA cardiovascular and pulmonary pathologist who assisted in the anatomic studies, has seen his share of atlases. "None go into the detail, and have such beautiful images, as this one," he says. Dr. Fishbein's participation was personal as well as professional: His parents and sister were Holocaust survivors, and he was born after World War II in Belgium, where they had gone into hiding.

For Dr. Shivkumar, the technical superiority of *Atlas of Cardiac Anatomy* over the Pernkopf atlas tells only part of the story. "Our atlas comes from people who have seen humans suffer and have helped to make lives better," he says. "Pernkopf's came from Nazi murderers."

BY THE TIME HIS GROUP WAS SET to publish the first volume, Dr. Shivkumar was entertaining a broader vision. He began to engage in conversations with his friend and colleague Barbara Natterson-Horowitz, MD (RES '90, '92, FEL '95). A professor in the Division of Cardiology and co-director of the UCLA Evolutionary Medicine Program, she also holds a master's degree in the history of science and co-authored *The New York Times* bestseller *Zoobiquity: The Astonishing Connection Between Human and Animal Health.*

"I was moved by Shiv's sense of outrage that a physician, the head of a major medical school, was abusing trust," Dr. Natterson-Horowitz recalls. "More than almost any physician I know, Shiv is driven by purpose — here to remove this moral stain. As we had more conversations, I saw that Amara Yad could

ATLAS OF CARDIAC ANATOMY/DR. SHUMPEI MORI

To preserve their proper three-dimensional structure to be photographed without distortion, Dr. Shumpei Mori “fixed” donated human hearts by inserting plastic tubes hooked up to a pump to maintain pressure perfusion for 24 hours in a cold room.

extend beyond correcting just this one terrible event in the history of medicine."

In early 2022, Drs. Shivkumar and Natterson-Horowitz began building out their vision for Amara Yad as a campuswide initiative, based in the UCLA Cardiac Arrhythmia Center, that would honor the victims of medical exploitation through corrective action.

The first goal: extending the work inspired by the Pernkopf-era atrocities. Amara Yad intends to publish a series of anatomic atlases — free to all in support of medicine's life-saving mission. Volume 1 of the *Atlas of Cardiac Anatomy* lays the foundation for the cardiac atlases set to follow in rapid succession. The spring 2024 release of the series' second volume, *Atlas of Interventional Electrophysiology: Correlative Anatomy*, by Drs. Shivkumar, Mori and Roderick Tung of the University of Arizona Health Sciences, serves as an anatomic guide for the treatment of complex arrhythmias. Future volumes will bring in other authors from UCLA and beyond to cover structural heart disease, imaging, cardiac surgery, cardiac neuroanatomy and congenital heart problems.

But the heart is just the beginning. "In science we say function follows form," Dr. Shivkumar says. "We are entering an era in which many fields of medicine are going to be revolutionized by modulating nerves. Mapping the wires that connect various parts of the body — the nervous system — will have an impact on all of medicine."

To complete the volumes of what Dr. Shivkumar calls "the internet of the human body," Amara Yad is inviting collaborations with experts from multiple universities, supported by private and extramural funders. The Amara Yad Challenge, to be held in summer 2024, will bring in representatives from several medical schools to discuss the need and the task ahead. "This should be a multi-university, multinational effort to build on this portal of knowledge," Dr. Shivkumar says.

AMARA YAD'S BROADER VISION stems from the reality that the evils associated with the Pernkopf atlas are by no means isolated chapters in the annals of the medical profession.

During the Holocaust, physicians were enlisted to conduct medical experiments on unwilling victims in concentration camps and to develop race-based health policies, including mass sterilization of people viewed as "lesser" humans. Prior to the systematic murder of Jews, doctors and nurses were complicit in Aktion T4, the Nazis' "euthanasia" program, in which an estimated 250,000 individuals with psychiatric, neurological or physical disabilities were put to death to "cleanse" the Aryan race; German psychiatrists were charged with signing the papers that consigned institutionalized persons to death.

And the American medical community has committed shameful acts of its own. Perhaps the most notorious was the Tuskegee Syphilis Study. From 1932 to 1972, the U.S. Public Health Service, in a study designed to learn more about the effects of untreated syphilis, allowed 400 Black men to unknowingly go without care. "The history of medicine, both distant and recent, includes too many instances in which the absence of a moral view led to catastrophic consequences, and those violations have carry-over effects," Dr. Natterson-Horowitz says. "To optimize health, patients must believe their physician is always looking out for their best interests. When the sanctity of that relationship is breached by anyone, it affects all of us."

HONOR AND RESPECT

IT'S BEEN MORE THAN 15 YEARS SINCE JUSTIN HAYASE, MD '12 (FEL '19, '21), was a first-year medical student at UCLA. But no one who has gone through medical school forgets their first encounter with those who donated their remains in anatomy lab.

When it comes to medical education, no textbook can match the visual and tactile experience of handling a cadaver. "Shiv teaches this constantly — you have to understand how anatomical systems are formed in three dimensions," says Dr. Hayase, a UCLA Health cardiac electrophysiologist who trained under Kalyanam Shivkumar, MD (FEL '99), PhD ('00), director of the UCLA Cardiac Arrhythmia Center.

The cadavers so essential to the earliest lessons of every aspiring doctor come from individuals who choose to donate their remains, or the remains of deceased loved ones, to advance medicine and science. Whereas the Pernkopf atlas Dr. Shivkumar seeks to replace exploited non-consenting individuals murdered by the Nazi regime, today's UCLA medical students take extra time to recognize the humanity before them.

"I vividly remember sitting with my classmates before we ever set foot in the anatomy lab, talking about how these were bodies of people who wanted to help others, and that they needed to be treated with the utmost respect," Dr. Hayase recalls. "At first, we were all nervous and afraid to touch anything. But over time, you learn so much and become grateful to the person in front of you."

Dr. Hayase, who is helping to plan Amara Yad rotations for UCLA medical students, remembers that at the end of the weeks-long experience, his class held a "ceremony of thanks" in which students spoke about their gratitude for the anonymous donor they had handled, providing them with a symbolic send-off.

In its rollout of the anatomic atlases designed to advance human health while addressing past wrongs, Amara Yad reaffirms that gratitude while spelling out its mission: *We dedicate these atlases to the noble humans who have so generously willed their bodies for this use.... [W]e also honor the subjects of Pernkopf's atlases who were victims of Nazi terror by shifting the focus away from the images of their bodies and toward their enduring human dignity.*

— Dan Gordon

Numerous studies have shown that the legacy of Tuskegee and other injustices — including more recent evidence indicating, for example, that Black patients are undertreated for pain and that LGBTQ+ patients continue to report significant levels of discrimination from providers — is a high level of distrust that too often results in avoidance of needed care. Breaches in trust can also undermine advice issued by physicians and public health authorities. The anti-vaccine movement was catalyzed by a widely publicized 1998 study by the former physician and discredited British academic Andrew Wakefield and colleagues, published in the prestigious medical journal *The Lancet*, that purported to show a link between the measles, mumps and rubella vaccine and autism. Although the authors were later found to have committed a series of ethical transgressions and misrepresented their results, leading the journal to fully retract the paper in 2010, the study — whose findings were never replicated — continues to be cited by vaccine skeptics.

Amara Yad plans to use such acts of medical immorality as both educational tools and inspiration to bring about moral correctives, just as the Pernkopf atlas has provided fuel for the unprecedented endeavor to produce an open-access anatomic map of the human body for the benefit of patients around the world. While the contours of that model remain under construction, a key component will involve educating students at the David Geffen School of Medicine at UCLA. That will include a rotation in which students learn from medical ethicists and historians about the sacred nature of the physician/patient bond and cases in which it was violated, as well as participating in reparative research, education and community-outreach projects.

AT THE MEDICAL UNIVERSITY OF Vienna, where Dr. Eduard Pernkopf served as dean — dressing in full Nazi regalia and commanding his faculty to swear an oath of loyalty to Adolph Hitler — the sordid history serves as a cautionary tale for today's medical students. They learn about the Pernkopf history both in anatomy class and on a visit to the Josephinum, the medical history museum located on the university campus, which displays the original Pernkopf atlas drawings and proofs, along with accounts of the unpleasant truths behind them.

> **"MORE THAN ALMOST ANY PHYSICIAN I KNOW, SHIV IS DRIVEN BY PURPOSE — HERE TO REMOVE THIS MORAL STAIN."**
>
> DR. BARBARA NATTERSON-HOROWITZ

Juxtaposed with the Pernkopf works, the Josephinum houses a large collection of three-dimensional Italian wax anatomic models dating to the museum's origins in 1785 under Joseph II of Austria, Holy Roman Emperor. "Our students can see the anatomy drawings with swastikas on them and learn about the darkest times of medicine and humanity, then learn by walking through the most beautiful art pieces from the past," says Christiane Druml, the UNESCO Chair of Bioethics at the Medical University of Vienna, who also serves as director of the Josephinum.

The Medical University of Vienna has embraced Amara Yad, its leadership having visited UCLA and consulted with Dr. Shivkumar. "Today's doctors face so many time constraints that their ability to talk with colleagues and superiors about ethical issues is often limited," Druml says. "But it's important that they not only learn about the past, but also discuss the many new issues that come up in an era of rapid change, such as artificial intelligence and genome editing."

As technology continues to usher in possibilities that were once unthinkable, ethical questions are being raised that couldn't have been fathomed during the time of Dr. Pernkopf. "Physicians have much more power today," says Rabbi Michael Berenbaum, a professor at the American Jewish University in Los Angeles and one of many experts Dr. Shivkumar has consulted for Amara Yad. "We need to remind everyone that people who think only of science without considering the ethical consequences of the knowledge they gain bring shame to the profession."

Under Dr. Shivkumar's leadership, the UCLA Cardiac Arrhythmia Center has earned an international reputation for excellence. Its innovations in the treatment of abnormal heart rhythms have saved countless lives, drawing cardiologists from around the world to learn the techniques. But Dr. Shivkumar believes Amara Yad has the potential to be the center's most important contribution. "The foundation of medicine is ethics," he says. "Without it, nothing else matters." ●

***Dan Gordon** is a frequent contributor to U Magazine. His two-part story, "UCLA In the Time of AIDS," received the Robert G. Fenley Gold Award for Excellence in Writing and "Best of Show" from the Association of American Medical Colleges.*

To read Part 1 of this story, scan the QR code or go to: ***ucla.in/amara-yad-part-1***

ALISHA JUCEVIC

“The history of medicine, both distant and recent, includes too many instances in which the absence of a moral view led to catastrophic consequences, and those violations have carry-over effects,” Dr. Barbara Natterson-Horowitz says.

Scent Therapy

By Robin Keats

WHEN NASSER S. EL-OKDI, MD, IS NOT caring for patients in the ICUs of UCLA Health's Westwood and Santa Monica hospitals, he often is looking after patients of a different sort in the makeshift "ICUs" constructed of Ikea storage units he has set up in his home.

There, he devotes his time to healing a dozen or so of the more than 100 sweetly scented hoya plants that he cultivates, tending to such flora-threatening issues as root rot and soil imbalances. It is a comforting reminder of his childhood in the beautiful but battle-scarred Bekaa Valley of Lebanon.

"My mother had this beautiful plant grown from cuttings someone had given her before I was born," he recalls. "My family had found a spent tank shell in the mountains, and she turned it into a planter in which she grew a hoya plant."

Dr. El-Okdi's hoya hobby began many years after he came to the United States. During the pandemic lockdown, his then-roommate was watching a video that featured the plant. "I had always had plants, but not the hoya," says Dr. El-Okdi, a UCLA Health hospitalist.

Now, the fragrant perfume of its star-shaped flowers centers him, brings him tranquility and returns his thoughts to his homeland thousands of miles away. And it helps him to allay emotionally jagged memories from his past — of upheavals and resettlement, family trauma and difficult assimilation in new homes.

"My mother loved this plant," he says. "It blooms into these beautiful tendrils at night, filling a room with an aroma that makes me nostalgic."

Dr. El-Okdi was born in 1985. In the years preceding and after his birth, Lebanon was wracked by civil war and conflict with Israel, it's neighbor to the south. His father, a noncombatant,


MILO MITCHELL

The fragrant perfume of the hoya plant brings Dr. Nasser S. El-Okdi tranquility and returns his thoughts to his childhood home in Lebanon.

was seriously injured when he was shot during one of the many conflicts that raged on and off in the region. "He nearly died," Dr. El-Okdi said.

His mother held an American passport, and when Dr. El-Okdi was 4 years old, the family left the violence and economic hardship they faced in Lebanon and resettled in Toledo, Ohio. "My struggle began when we moved to America," Dr. El-Okdi says. "I had to quickly adapt to a new environment, culture and language."

But the violence and tragedy did not stop once the family moved to the United States. Not long after Dr. El-Okdi turned 11 years old, his eldest sister — his role model who introduced him to the wonders of science — was abducted while driving home after a family visit, shot and left in an alley to die in the freezing cold of an Ohio winter.

"Her death plunged me into a new reality," he says. "It was then, at that very young age, that I was confronted with the concepts of mortality and of fragility, not only of the human body but also of the mind, and its reaction to such unexpected events."

He recalls how he began to analyze life and human behavior, and he thought about what might have been done medically to save his sister. "The answers I sought, coupled with the interest in physical and behavioral science she instilled, resulted in a keen interest in biology as I entered high school," Dr. El-Okdi says. "Further events in my life would nurture and strengthen this newfound dream."

One of his brothers-in-law, an internist, would take the young boy with him on rounds and encourage him to explore what Dr. El-Okdi calls "the artistic components of medicine, such as the psychological influence on disease and prognosis."

Tragedy struck again during high school when a cousin in Lebanon was diagnosed with Hodgkin's lymphoma. Her parents hid the truth and told her she had tuberculosis, but she became suspicious when she started to undergo chemotherapy. Dr. El-Okdi was visiting in Lebanon over the summer. He and his cousin were very close, and she turned to him for truthful answers. Going against her family's traditional, superstitious belief that lying to her was the best thing to do, he agonized and then told her the truth. When she died, "her death once again caused me to reevaluate the meaning of my life," Dr. El-Okdi says. "The growth of my dream was stunted because I felt that modern medicine had failed to provide a cure for her."

After Dr. El-Okdi graduated from college, he felt he needed to reconnect with his family's roots and returned to Lebanon, where he taught biology and chemistry to seventh, eighth and ninth graders at an Islamic school. When he returned to the United States, he focused on biomedical sciences in graduate school, and then earned his MD from the University of Toledo College of Medicine and completed residency training at Boston's Beth Israel Hospital.

"I felt a need in my life to help others in a way that may have helped my cousin or my sister survive, a step forward in changing the face of medicine," he says. He considered specializing in psychiatry, thinking it might help him deal with the trauma that had marked his youth, but turned, instead, to internal medicine.

"My research, the mentoring I received and the deaths of my sister and cousin make me realize that strength is a necessity for a doctor because physicians need to be strong when medicine fails," Dr. El-Okdi says.

Now, breathing in the jasmine and cinnamon scents of the hoya blossoms helps him to sustain that strength, linking his past and present. Says Dr. El-Okdi, "My intertwining journey of cultivating both plants and human well-being is a reminder to me that in the art of healing — whether it is a patient in need or a humble hoya — the essence of care remains universal." ●

***Robin Keats** is a freelance writer in Los Angeles.*

AWARDS & HONORS

Dr. E. Dale Abel, chair of the Department of Medicine in the David Geffen School of Medicine at UCLA and executive medical director of the UCLA Health Department of Medicine, received an honorary Doctor of Science from the University of the West Indies, his alma mater.

Dr. Randall Espinoza (FEL '96), the Muriel Harris Chair of Geriatric Psychiatry and professor of clinical psychiatry and biobehavioral sciences in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, was named editor-in-chief of *The Journal of ECT*.

Dr. Lillian Gelberg (FEL '86), professor of family medicine, received the Maurice Wood Award for Lifetime Contribution to Primary Care Research from the North American Primary Care Research Group.

Dr. Steven Jonas (MD '12, PhD '10, RES '15, FEL '18), assistant professor of pediatrics and an investigator at the California NanoSystems Institute at UCLA and the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, received the 2024 Society for Pediatric Research Young Investigator Award.

Dr. Lucinda Leung, assistant professor-in-residence of medicine and psychiatry and biobehavioral sciences, was named one of 10 emerging leaders in health and medicine by the National Academy of Medicine.

Dr. Kymora Scotland, assistant professor of urology, received the 2023 AUA Rising Stars in Urology Research Award.

Dr. Rhonda Voskuhl, Jack H. Skirball Professor of Multiple Sclerosis Research, was selected by *Lancet Neurology* for its monthly neurologist profile, a feature limited to the world's top neurologists.

In Memoriam

Dr. Michael Grunstein, Distinguished Professor Emeritus of Biological Chemistry and a pioneering scientist who helped make genetic cloning possible, died February 18, 2024. He was 77 years old. Born in Romania and the only surviving child of Holocaust survivors, Dr. Grunstein joined the UCLA faculty in 1975. His groundbreaking research into histones, the protein "spools" around which DNA wraps itself, led to widespread recognition, including the Massry Prize in 2003, the Rosenstiel Award for Distinguished Work in Basic Medical Research in 2011, the Gruber Genetics Prize in 2016, the Albert Lasker Basic Medical Research Award in 2018 and the Albany Prize in 2022.

UCLA Receives $10 Million to Launch the Howard and Irene Levine Family Center for Movement Disorders

By Mary Goodstein

Thanks to donations totaling $10 million from longtime UCLA supporters Irene and Howard Levine and their family foundation, the university will establish the Howard and Irene Levine Family Center for Movement Disorders in the David Geffen School of Medicine at UCLA. The new center will support research on Parkinson's and other neurodegenerative diseases and foster the development of physician-scientists in neurology.

Movement disorders, a category of more than 30 neurological conditions causing abnormal body movements, affect approximately 40 million people each year. One of the most common

TODD CHENEY/UCLA PHOTOGRAPHY

(From left) Dr. John C. Mazziotta, Irene Levine, Howard Levine (seated), Chancellor Gene D. Block and Dr. Jeff M. Bronstein.

movement disorders is Parkinson's disease, which affects 1 million Americans and more than 10 million people worldwide. Parkinson's worsens over time, gradually robbing people of coordinated movement and impairing certain non-motor functions.

The Howard and Irene Levine Family Foundation gift will provide resources for five new endowments in the Department of Neurology: a permanent-appointment chair, three term-appointment chairs and a movement disorders research fund — all of which will benefit basic science research on Parkinson's disease under the leadership of the director of the new Levine Center.

The gift will also fund a symposium on movement disorders featuring leaders in Parkinson's disease research; the inaugural event took place March 25–26 at UCLA.

"The visionary philanthropy of the Levine family will be a complete game changer in the field of movement disorders, to the benefit of patients across the country and around the world," said Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health. "UCLA is deeply honored to play a significant part in this process."

The donations, the Levine family said, are meant to honor Dr. Jeff M. Bronstein (MD '88, RES '92, PhD '88), Fred Silton Family Chair in Movement Disorders and director of the UCLA Movement Disorders Program and Clinic.

"The overwhelming generosity of the Levine family will make possible unparalleled excellence in movement disorders research and care," said Dr. Bronstein, who has been the beneficiary of several gifts from the Levine family directed to his research. "This transformative philanthropy will provide inspiration and funding for many early-career physician-scientists who hopefully will bring us closer to cures for neurodegenerative diseases such as Parkinson's."

The UCLA Movement Disorders Program is nationally recognized for its movement disorder care, having been named a Wilson Disease Association Center of Excellence and a Huntington's Disease Society of America Center of Excellence — designations that signify the provision of comprehensive, high-quality care.

"This new gift is our family's way of honoring Dr. Jeff Bronstein, with whom we — and especially our father — have had a long and close relationship," said David Levine, the Levines' son and executive director of the Howard and Irene Levine Family Foundation. "I speak for my brother, Jay Levine, and my sister, Marci Dollinger, when I say we are thrilled to be able to make our parents' philanthropic wishes become reality during their lifetime."

"This gift comes from our hearts," said Irene Levine. "Jeff Bronstein is family to us. Our relationship started with clinical care 20 years ago, and it has become a true friendship that has meant so much to us. Over the years, we've watched Jeff's two girls grow up; our two families have become close. It's been wonderful."

In addition to their medical philanthropy, Howard and Irene Levine have been dedicated supporters of the UCLA Anderson School of Management and the school's Ziman Center for Real Estate. Their philanthropy enabled the Anderson School to establish the Howard and Irene Levine Program in Housing and Social Responsibility, which includes a graduate course, a distinguished speaker series on affordable housing, an annual housing symposium and a distinguished fellows program. A 2018 gift from their family foundation provided resources for the Ziman Center to launch the Howard and Irene Levine Affordable Housing Development Program, designed to provide professionals with the knowledge and skills to develop affordable housing.

Howard Levine is the founder and former president and CEO of ARCS Commercial Mortgage, which was one of the largest providers of commercial and multifamily mortgage financing. He was active on the California board of directors of Mercy Housing, a large, nonprofit provider of affordable housing. He has served on numerous other boards and is a founding board member of the Ziman Center and a member of the advisory board of the UCLA Ziman Real Estate Alumni Group.

Levine earned his MBA in urban land economics from UCLA in 1967, after receiving his bachelor's in accounting from New York University. In 2011, the Anderson School recognized him as one of the school's 100 Inspirational Alumni. ●

__Mary Goodstein__ is senior creative director, principal gifts, for UCLA Health Sciences Development.

Inaugural Movement Disorders Symposium

The inaugural Howard and Irene Levine Family Center for Movement Disorders Symposium, "Parkinson's Disease Research: The Next Decade," took place March 25–26 at the UCLA Laurie and Steven C. Gordon Neuroscience Research Building. The event featured two keynote speakers: Dr. Tim Greenamyre, director of the Pittsburgh Institute for Neurodegenerative Diseases and a world-renowned biologist and neurologist specializing in Parkinson's disease, and Dr. Andres Lozano, chair of the Division of Neurosurgery at the University of Toronto and a pioneer in deep brain stimulation for Parkinson's disease.

For more information, contact Christopher Carbado at: 310-562-6498

UCLA Cardiology Receives $2 Million to Establish Fund in Preventive Cardiovascular Health

By Allie McFarland

TODD CHENEY/UCLA PHOTOGRAPHY

(From left) Dr. Tamer Sallam, UCLA Chancellor Gene D. Block, Kirk Dunn and Dr. John C. Mazziotta.

The Division of Cardiology in the David Geffen School of Medicine at UCLA has received a $2 million gift from UCLA alumnus Kirk Dunn to endow a research fund focused on cardiovascular and cardiometabolic health. Dunn made the contribution in honor of his late son, Connor Dunn.

The Connor Dunn Endowed Fund in Preventive Cardiovascular Health will help further the work, focused on innovations in cardiometabolic diseases, of Dr. Tamer Sallam (PhD ’14, FEL ’14), vice chair of the UCLA Department of Medicine, executive director of the UCLA Specialty Training and Advanced Research (STAR) Program and co-director of the UCLA Center for Cholesterol Management.

On January 17, 2024, UCLA Chancellor Gene D. Block, Mrs. Block and Dr. John C. Mazziotta (RES ’81, FEL ’83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health, gathered, along with Kirk Dunn, his family and friends to celebrate the gift.

Dunn spoke about the journey that led to his donation — the culmination of a shared vision and passion for improving preventive cardiovascular health efforts at UCLA. Dr. Sallam followed with a presentation that pointed to an ultimate vision of a center for cardiometabolic health at UCLA.

“We are grateful to the Dunn family for their incredible generosity,” said Dr. Sallam. “Their support will fuel efforts on campus to increase the understanding of factors that influence cardiometabolic conditions. By developing innovative clinical tools, we can ensure that patients have the knowledge they need to address previously undetected cardiovascular issues, helping to prevent tragic outcomes.”

Dr. Sallam’s laboratory focuses on how genetics impact cardiometabolic diseases, a group of common and often preventable conditions, such as heart attack, stroke and diabetes. Statistics show a global increase in the number of people who experience one or more of these conditions. The common characteristics of cardiometabolic syndrome among all groups include abdominal obesity; insulin–resistant glucose metabolism, such as type 2 diabetes; dyslipidemia, which increases the risk of clogged arteries; and increased blood pressure. The gift is aimed at accelerating discoveries and clinical strategies targeting inflammation and metabolism in heart disease. It will support several projects, including promising multidisciplinary pilot studies.

For more than 30 years, Kirk Dunn and the Dunn family have been active members of the university community. Dunn graduated from UCLA in 1983, and he currently serves on the Easton Technology Management Center Board of Advisors in the UCLA Anderson School of Management, as well as the Board of Advisors for Ronald Reagan UCLA Medical Center.

“I am proud to invest in this research,” Dunn said. “The work of Dr. Sallam and his colleagues is moving the needle in cardiology to the benefit of countless patients and their families. As someone who has been deeply affected by cardiovascular disease, I look forward to the extraordinary progress that they are poised to make in this key area of medicine.” ●

***Allie McFarland** is a senior writer for UCLA Health Sciences Development.*

For more information, contact Lindsey Walton at: 424-946-6102

Ninth Annual Max Gray Salon Welcomes New Fellows

On March 26, 2024, Laurie Gordon and the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA hosted the ninth annual Max Gray Fellows in Mood Disorders Salon. Held at the Dr. S. Jerome and Judith D. Tamkin Auditorium, Ronald Reagan UCLA Medical Center, the event featured discussions on mental health and introduced the 2023-2024 Max Gray Fellows in Mood Disorders.

Laurie Gordon, founder of the Max Gray Fund for Treatment of Mood Disorders and a member of the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA Board of Advisors, welcomed guests and spoke about how the event honors her son, Max Gray, by expanding training for careers in mental health services. In August 2013, at the age of 25, Max died by suicide. To expand access to treatment for anxiety, depression and other mood disorders — especially in children and adolescents — Gordon established the Max Gray Fund at the UCLA Semel Institute. The fund supports the advanced training of psychiatry and psychology fellows, increasing the capacity of the mood disorders clinics to diagnose and treat patients and conduct innovative research.

Dr. John C. Mazziotta (RES ’81, FEL ’83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health, then took the stage and offered a very special thank you to Laurie and Steven Gordon for their unwavering commitment to the fellowship program. Since its founding in 2014, the Max Gray Fund for Treatment of Mood Disorders has raised $2.6 million, supporting 29 fellowships. With six fellows this year, it is the largest cohort to date.

TODD CHENEY/UCLA PHOTOGRAPHY

(From left) Dr. Megan Ichinose; Dr. Manal Khan; Dr. Jessica Burns; Dr. Jenny Nguyen; Laurie Gordon, Max Gray program founder; Dr. Collin Price; Dr. Gregory Barnett; and Dr. David Miklowitz, Max Gray CHAMP director.

“The Max Gray Fellowship helps meet a crucial need in the region: high-quality, accessible mental health care,” said Dr. Mazziotta. “The fund has enabled the Semel Institute to expand the mood disorders clinics, and the program also reflects UCLA Health’s larger approach to mental health care.”

Before the Max Gray Fund was established, wait times for the Adult and the Child and Adolescent Mood Disorders Clinics were around six months. Now, the clinics see patients five days a week, and wait times for a first appointment have been reduced to two weeks, which Dr. Mazziotta noted is practically unheard of in this field.

Laurie Gordon then introduced the three new fellows, Drs. Jessica Burns and Jenny Nguyen, Max Gray Child and Adolescent Mood Disorders Clinic (CHAMP); and Dr. Collin Price, Adult Mood Disorders Clinic; and the three returning fellows in the CHAMP Clinic, Drs. Gregory Barnett, Megan Ichinose and Manal Khan. Gordon facilitated a panel discussion addressing current societal issues, loneliness, isolation, anxiety and depression and how mental health professionals deal with these areas. The panel offered suggestions on how parents can identify problems and encourage their children to open up about these topics.

Drs. Michael Gitlin (RES ’79) and David Miklowitz (PhD ’85) provided updates on the latest advances in mental health, followed by a presentation from Johnese Spisso, MPA, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences.

Spisso talked about the future of mental health care, saying, “Since its founding, the Max Gray Fellowship has prepared new behavioral health experts who complement UCLA Health’s significant investments in mental health, including the acquisition and renovation of a hospital dedicated to mental and behavioral health care.” Philanthropy will play an integral role in the completion and opening of the new Mid-Wilshire behavioral health campus, which will increase inpatient capacity by 60%. The hospital will feature a crisis stabilization unit for the urgent treatment of neurological and psychiatric emergencies.

Gordon concluded the evening emphasizing the importance of a concerted, strategic effort to expand mental health resources. Attendees were provided printed resources. “We’re here to help,” she said. “No one in our community should suffer alone.” ●

For more information, contact Amy Drizhal at: 310-773-7436

DONATIONS & GIFTS

SUPPORT FOR ALZHEIMER’S DISEASE RESEARCH

UCLA alumna Jan Kessler and her husband, Randy Kessler, parents of UCLA students and longtime volunteers and supporters of UCLA neuroscience and other areas, have made a $1 million pledge to advance Alzheimer’s disease research. Under the direction of Dr. S. Thomas Carmichael (FEL ’01), chair of the UCLA Department of Neurology and Frances Stark Chair in Neurology, and Dr. Jason Hinman (RES ’11), co-director of the Mary S. Easton Center for Alzheimer’s Research and Care at UCLA, the gift will establish the Jan H. and Randall E. Kessler Fund for Alzheimer’s Research. The funding will enable a multidisciplinary team of faculty with expertise in neurology, computational genetics and stem cell biology to conduct investigations to determine the gene interactions that underlie differences in disease onset and disease progression in Alzheimer’s disease.

For more information, contact Christopher Carbado at:
310-562-6498

ADVANCING EAST-WEST MEDICINE TRAINING

Donna and Larry Moulton have contributed $200,000 to support education and fellowship training at the UCLA Health Center for East-West Medicine, under the guidance of Dr. Katie Hu (RES ’15, FEL ’17), program director of the East-West Integrative Medicine Fellowship Program. The fellowship provides intensive training in the basic theory and practice of Traditional Chinese Medicine and other complementary and integrative medicine disciplines. The goal is for practitioners to learn how to integrate these complementary practices and therapies with their conventional biomedicine training to provide safe, effective, affordable and evidence-informed whole-person care. The East-West Integrative Medicine Fellowship, recognized by the American Board of Integrative Medicine, offers full- and part-time positions for fellows to receive extensive clinical training, ultimately broadening the available toolkit of the practicing physician and evolving healer.


YUCHEN (ANGELA) LING

(From left) Donna and Larry Moulton with Dr. Katie Hu.


DR. RICKY CHANG (FEL ’21)

Current East-West faculty and graduates of the East-West Fellowship (from left) Drs. Mary Fok, Qiuxue (Tracey) Tan, Katie Hu, Sungjin Kuon and Sara Ptasnik.

For more information, contact Noah Green at:
424-325-8184

INSPIRED PHILANTHROPY

Miri Offir has made a philanthropic contribution to support the Brain Research Institute and the research of pediatric neurosurgeon Dr. Aria Fallah. While her child was being treated for an unexpected health issue, Offir expressed that everyone from the front desk to Dr. Fallah made her and her family feel comfortable and cared for during an unprecedented experience. She was inspired to give back and make a difference in gratitude for the exceptional care her child received. As a result of this positive experience, Offir has become a volunteer with the UCLA Chancellor’s Society, and she hopes to continue making an impact through philanthropy directed to neuroscience/brain research.

For more information, contact Qjaquice Brantley at:
310-794-5277

RAISING HOPE AND FUNDING

For the past 13 years, The Ovarian Cancer Circle/Inspired by Robin Babbini has supported the gynecologic cancer research of Dr. Sanaz Memarzadeh (RES ’00, FEL ’03, PhD ’08), professor and gynecologic cancer surgeon in the Department of Obstetrics and Gynecology and director of the UCLA G.O. (gynecologic oncology) Discovery Laboratory. Its most recent fundraiser was held in May at the Woodland Hills Hilton to honor Dr. Memarzadeh. Inspired by the strength of her daughter, Robin, who lost her battle to ovarian cancer at the age of 20, Paulinda Schimmel Babbini founded The Ovarian Cancer Circle/Inspired by Robin Babbini. “The death of my daughter, Robin, took me in a direction that was totally unexpected and life changing,” said Babbini. On founding the nonprofit, she said, “The goals that are extremely important are shining a light on Robin’s memory, educating women about the signs and symptoms of ovarian cancer and fundraising for research to improve treatments and develop an early detection test that does not exist at this time.” To date, The Ovarian Cancer Circle/Inspired By Robin Babbini has contributed more than $1 million to Dr. Memarzadeh’s research,

COURTESY OF PAULINDA SCHIMMEL BABBINI

The Circle Team and Paulinda Schimmel Babbini (third from left, bottom row) present Dr. Sanaz Memarzadeh (second from left, bottom row) with a check for $75,000.

and it has been a remarkable partner in the effort to find a cure for ovarian cancer.

For more information, contact Sabrina Ayala at:
310-206-3815

VIETNAM VET HELPS INJURED SERVICE MEMBERS ONE QUARTER AT A TIME

Vietnam vet Ric Ryan, known in his town of Murphys, California, as the Walking Man of Murphys, waves to everyone he passes on his walks and donates a quarter to UCLA Health Operation Mend for everyone who waves back. As a result of going the extra mile, Ryan has raised and donated more than $125,000 to Operation Mend, which helps post-9/11 service members. In September 2023, NBC Nightly News with Harry Smith featured Ryan. As a result of the media coverage, Operation Mend saw a substantial increase in total donations for September 2023, far exceeding average monthly donations. In 2024, Ryan has raised another $1,600.

For more information, contact Ben Johnson at:
424-467-5012

RESEARCHING ONGOING SIDE EFFECTS OF COVID-19

The Ventura County Community Foundation (VCCF) has contributed $500,000 to establish the VCCF Long COVID Medical Research fund at the David Geffen School of Medicine at UCLA. The gift will support medical research that will lead to new understanding, treatments and technologies related to the long-term effects of COVID-19. Long COVID, characterized by symptoms and conditions that continue or develop after acute COVID-19 infection, includes a wide range of ongoing health problems, such as fatigue, weariness, mental health difficulties, brain fog and cognitive problems. These prolonged mental and physical symptoms may last weeks, months or years, and can affect family relations, work-life balance and economic stability. Long COVID occurs more often in people who had severe COVID-19 illness, but anyone who has been infected with the virus that causes the disease can experience it. The reasons for the ongoing symptoms are still poorly understood, and this vital contribution will enable UCLA researchers to focus studies on long COVID to benefit all people with the condition.

For more information, contact Jamie Lynn at:
310-983-3033

ENSURING ACCESS TO CARE FOR VULNERABLE POPULATIONS

Danielle and Brett White contributed $100,000 to the UCLA Health System President’s Strategic Fund in honor of Dr. Benjamin J. Ansell (MD ’92, RES ’95), director of the UCLA Comprehensive Health Program. The fund supports the UCLA Health commitment to ensuring that vulnerable populations are not prevented from access to care by financial obstacles. Gifts made to the President’s Strategic Fund benefit areas and projects at the discretion of Johnese Spisso, MPA, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences. To meet patients’ medical needs, resources are directed to a broad range of areas, including, but not limited to, the Simms/Mann-UCLA Center for Integrative Oncology, emergency medicine, care coordination, clinical social work, UCLA Health Operation Mend and the spiritual care program.

For more information, contact Ellen Haddigan-Durgun at:
310-321-8366

NEW MEDICAL SCHOLARSHIPS ESTABLISHED

The David Geffen School of Medicine at UCLA has received a bequest of $500,000 from the estate of Dr. Eugene E. Kessler. A survivor of the Holocaust, he studied in France and immigrated to the United States. As a new citizen, Dr. Kessler encountered barriers to accessing higher education — a journey that inspired him to help others following in his footsteps. As part of his estate, Dr. Kessler generously established the Kessler Gross Family Medical Scholarship and the Margaret E. and James M. Flesh Medical Scholarship at the David Geffen School of Medicine at UCLA. These awards are a lasting testament to his legacy and commitment to nurturing the next generation of student leaders. The scholarships will be given to recipients who demonstrate need, and will position them to pursue their medical careers in clinical practice, teaching, research and public service.

For more information, contact Mallory Gompert at:
310-267-2112

EASING PATIENTS’ PAIN

Arnold Porath has contributed $250,000 to establish the Arnold Porath From the Heart Fund in UCLA Health Palliative Care, which treats patients who have serious, chronic conditions with specialized care focused on relieving the pain, symptoms and stresses of an advanced illness. The team partners with patients, their loved ones and their medical team from diagnosis to end of life. Provided in the hospital, at outpatient care facilities or in the home, UCLA Health Palliative Care integrates physical, emotional, social and spiritual well-being, and is available for a range of illnesses, such as cancer, dementia, heart disease and Parkinson’s disease. “I am honored to partner with UCLA’s excellent palliative care team, including Drs. Daniel Karlin (MD ’12, RES ’16), Christopher J. Pietras and Emily Martin, to play an important role in enhancing holistic care and treatment opportunities for critically ill UCLA patients, and providing assistance to the families when the need arises,” said Porath. Philanthropic gifts help the team build the program’s capacity to serve more patients, implement new programs, offer bereavement support and perform compassionate gestures, such as providing a special meal or thoughtful gift, that ease suffering and improve the quality of life for patients and their families.

For more information, contact Larissa Harrison at:
310-592-5613

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NICK CARRANZA

Melissa Watkins' first reaction when she received her cancer diagnosis was disbelief, followed by despair. Then she decided, "I'm going to fight."

Fashion Defies Cancer

By Melissa Watkins

WHEN I GOT THE CALL TELLING ME I HAD BREAST cancer, I immediately went into denial. "That can't be true," I thought. "I'm sure they're going to call me back, because those weren't my results."

Then, maybe 15 minutes later, I was in despair, thinking, "Oh my God, I'm going to die."

I was at a work conference when I got the news, so I was surrounded by friends and colleagues — and by love. It was then that I realized, "OK, I'm going to fight."

Before my diagnosis, work and fashion were my two main things. I have always loved fashion. I go to a lot of fundraising events for my job, and I would have fun just trying out different styles. I love how what you wear can open conversations, and open doors. Over the years, I got to meet a lot of local designers in Los Angeles, and that really brought clothing to life for me. I was proud to wear the unique pieces I found. Fashion became a way to express myself to the world and help build connections.

I refused to let cancer take over my fashion sense. So, I created what I called the "52 'fits challenge" — as I went through my cancer journey, I would document myself on Instagram every single week. When my hair fell out from chemo treatments, I made a wig out of my locs that I'd grown for 15 years. I even got dressed up on the hardest weeks of treatment; putting on an outfit made me feel powerful and beautiful.

Before cancer, I would treat myself to a fashion photo shoot every year for my birthday to commemorate my favorite outfits of the year. This is L.A. — there are so many photographers online you can just hire for the day. So, when my birthday came around nine months after my diagnosis — after chemo, radiation and surgery at UCLA — I wanted to look like a princess. I wanted frills and ruffles. I just wanted to forget it all happened.

But then I met with a photographer who suggested the shoot might be a good opportunity to be a little more vulnerable, and to even show the surgery scars. I was like, “Absolutely not. I will not be a science experiment. You won’t look up ‘single mastectomy’ and my picture comes up. No!” I was angry. And whenever I get mad about something, it gives me pause. “OK, what triggered this?” I wonder.

As I started asking myself questions, I realized it was grief. As I was going through this journey, I would always be saying to myself, “I’m in denial” or “I’m angry” or “I’m depressed.” I would name it. Naming it helps me process the feelings. That’s when I came up with the idea for the photo shoot. I would express my five stages of grief — through fashion.

Once I got the idea, I pulled together all the outfits in 10 minutes. I didn’t even have to buy anything.

For denial, I took that wig I’d made and my favorite dress to go out in — because when I was in denial, I was trying to party. I was like, “This isn’t really happening. I’m going out.” Then when I thought about anger, I thought about this black and red toga I have. It’s furry and looks like you’re a warrior. I thought about it immediately. It’s perfect. And then a friend of mine, when she heard I had cancer, gave me a red scarf, so I thought that has to be incorporated. This happened in minutes! I was running around the room grabbing pieces of clothing and accessories.

“Putting on an outfit made me feel powerful and beautiful,” Watkins says.

NICK CARRANZA

Bargaining was the most challenging. How do you represent pleading? I pulled out the bodysuit that my twin sister gave me. It’s sheer, and it also has spikes. I think that when you come out of anger and go into the bargaining stage, the spikes represent that prickliness. The sheer is the transparency of the pleading. That one surprised me the most. I love them all, but that one brought me the most joy, and I could honor my sister.

And then there was depression. My friend was with me when I shopped for that gray trench coat years prior. I was like, “That’s it. Done.”

Acceptance was a beaded gold dress. That’s probably the piece I picked out first. I felt that it reflects the beauty that comes when trauma transforms you inside and out. Kinda like a rainbow after the rain.

When the photos came out, I knew I had to share them. I found a gallery in downtown Long Beach, near where I live, and I booked it. Then I reached out to every single person I knew. I even invited strangers off the street! And we had about 125 people at the opening.

The day before the exhibition, I found out the cancer had spread. My radiation oncologist told me I had a brain tumor. The timing couldn’t have been more perfect, actually. If I had found out earlier, I would have canceled the exhibition. But this was the day before, so, it was perfectly timed, because here was this outpouring of love from everybody at the show.

I had to do radiation and surgery again. For my next birthday, I did a shoot that reflects the sixth stage of grief: finding meaning. The photos honor the next stage of my metastatic breast cancer journey and feature the radiation masks worn during treatments.

Now, I just want to show these photos wherever I can, to whoever wants to see them. Making this exhibit is the best thing I’ve ever done. There’s so much beauty that can come from extreme pain. It’s transformed me in a way that reinforced this idea that something you might go through can be really, really hard or difficult or painful, but the other side of it can just be so much beauty and creativity and joy.

Some people will say, “Don’t be sad.” But it’s OK to be sad. I think it’s about leaning into what you’re feeling and accepting it for what it is. That is what I have done with my art. It has given me an outlet to find joy in the midst of an illness I’m still battling, and it is a path to finding grounding and peace. ●

***Melissa Watkins** is a university fundraiser.*

To view a video of Melissa Watkins talking about her cancer journey, scan the QR code or go to: ucla.in/epilogue-melissa-watkins

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