UCLA Health
David Geffen School of Medicine
SUMMER 2019

A NEW KIND OF HOUSE CALL

As hospitals endeavor to reduce repeat emergency room visits and readmissions, UCLA's medical student "hotspotters" are working on the frontline of prevention.

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Digital Collage: Ara Oshagan

Photo: UCLA Health

Health Is a Human Right

Seventy-three years after the World Health Organization Constitution enshrined the principle that health is a fundamental right, UCLA remains committed to eliminating barriers to care and improving population health.

On July 22, 1946, representatives from 61 nations, including the United States, convened in New York City to sign and adopt the World Health Organization Constitution. Its preamble states: "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."

Seventy-three years later, more than half of the world's population still lacks access to essential health care services, and health disparities — across demographic factors — continue to contribute to inequities in health outcomes.

As a leading public institution, UCLA Health is committed to eliminating barriers to care and improving population health through systemic solutions that address social, cultural and biological determinants of health. Embedded in one of the most diverse communities in the world, UCLA Health has established a range of community health programs — such as the UCLA Mobile Eye Clinic, Venice Family Clinic and Rape Treatment Center — that work with local and national partners to increase access to health care and prevent adverse health conditions.

At the heart of these programs are the extraordinary faculty, staff, students and volunteers who dedicate themselves to narrowing the equity gap. Every year, hundreds of UCLA physicians, nurses, dentists, optometrists and allied health professionals provide free medical, dental and vision care, as well as counseling, referrals and health education, to thousands of underserved and uninsured community members throughout the greater Los Angeles area. Many UCLA clinicians also regularly travel to all parts of the globe to render aid and train local health care workers. We also are engaged on a variety of fronts to improve access for and deliver compassionate care to the LGBTQ community.

Alongside efforts to improve access to vital diagnostic services and treatments, UCLA Health also partners with the community to implement evidence-based interventions that reduce the burden of disease for future generations. One such initiative is UCLA Health Sound Body Sound Mind, which aims to combat childhood obesity by building comprehensive physical education programs at underserved middle and high schools.

While much work remains, these and many other efforts at UCLA are designed to bring us closer to those who need us most, no matter the circumstances. The promise of medicine — to cure disease, alleviate suffering and improve quality of life — is one we are committed to keeping, for all people.

Johnese Spisso, MPA
President, UCLA Health
CEO, UCLA Hospital System
Associate Vice Chancellor, UCLA Health Sciences

The NICU's Alive with the Sound of Music

On a Friday morning in January, Jana Gallus and Gregor Martynus poke their heads over their triplets' set of bassinets in their Westwood apartment. Six-month-olds Ada, Kian and Nico are just waking up, kicking with excitement and beaming from ear to ear. It's a daily moment that Gallus and Martynus say doesn't get old. The triplets have come a long way since July 2018 when they were born early, at 31 weeks, with weights ranging from 2.5 to 4 pounds. For 52 days, the trio were cared for in the neonatal intensive care unit (NICU) at UCLA Mattel Children's Hospital.

Music therapist Kristina Casale (right) plays a special lullaby for the Gallus triplets that was written by their parents, Gregor Martynus and Jana Gallus (left).

Photos: UCLA Health/Barb Consiglio

Jenna Bollard (left), manager of expressive arts therapies at UCLA Mattel Children's Hospital, sings to a baby in the neonatal intensive care unit. Bollard led a study examining a device that helps premature babies develop the skills necessary to orally feed using a lullaby sung by their parents.

As the UCLA medical team monitored the triplets, another care team entered their lives: a group of music therapists using an auditory device aimed at helping preemies develop, feed and grow. Premature infants in the NICU — especially those born before 34 weeks — struggle with oral feeding. They typically haven't developed the reflex to suck, breathe and swallow simultaneously, which inhibits their ability to gain weight.

It's for this reason that music therapist Jenna Bollard sought to study whether a pacifier-activated lullaby device, or PAL, might help. Its secret ingredient: It plays a personal lullaby that parents write, sing and record for their baby.

"Allowing parents to use their voice and the special song that they created on this medical device allows them to aid their baby in these very clinical-focused goals," says Bollard, manager of expressive arts therapies at UCLA Mattel Children's Hospital.

The PAL encourages preemies to strengthen their oral feeding by playing soft music that's appropriate for the baby's developmental stage, when the baby sucks on the pacifier connected to the device. Bollard's research is intended to determine if use of the device improves babies' abilities to feed on their own and gain weight naturally, shortening their stay in the NICU. Early results from the research, which Bollard hopes to publish soon, suggest that 70 percent of participants increased their proficiency using a pacifier while the PAL was used.

Gallus and Martynus worked with Kristina Casale, a music therapist in the NICU, to write and record a lullaby to the tune of Bob Marley's "Three Little Birds," with each of the three verses made out to one of the triplets.

Chorus

Don't worry, about a thing
Cause every little thing is gonna be alright
Singing don't worry, about a thing
Cause every little thing is gonna be alright
[Verse – Kian]
Fiesty Little Kian
You smile like the rising sun
Your cute little nose
Wiggles in your sleep
We'll sing a sweet song
A melody pure and true
Singing this is our message to you

For the families who participate in the program, the songwriting process can be an emotional one. "They create these special songs with us by sharing what they want their baby to know, what they see in their baby's personality and what they dream of for their baby," Bollard says. "They get to express all of the emotions they're processing during what can be a very difficult time."

But among the many ways that clinical treatments help preemies in the NICU, Bollard and the medical staff at UCLA Mattel Children's Hospital note that parents are and will always be a crucial component of care. "Parents make all the difference, and I often tell parents that they are the best part of this equation," said Shelly Frisco, a nurse in the NICU who works closely with Bollard and her team. "Technology can only do so much. We as medical practitioners can only do so much. However, you are your baby's best medicine."

— Ryan Hatoum

A baby in the NICU at UCLA Mattel Children's Hospital is given a pacifier that plays a lullaby sung by her parents when she sucks on it. The device helps preemies develop the skills necessary to feed, while giving parents a way to bond with their babies when they can't be there.

Scientists Create a Renewable Source of Cancer-fighting T Cells

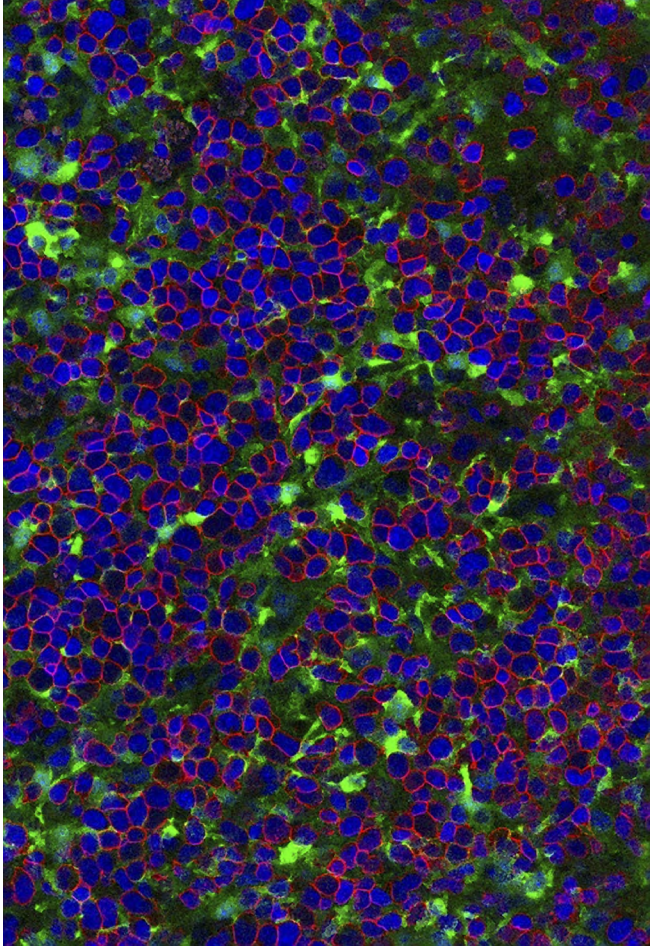
A UCLA study is the first to demonstrate a technique for coaxing pluripotent stem cells — which can give rise to every cell type in the body and which can be grown indefinitely in the lab — into becoming mature T cells capable of killing tumor cells. The technique uses structures called artificial thymic organoids, which work by mimicking the environment of the thymus, the organ in which T cells develop from blood stem cells.

T cells are cells of the immune system that fight infections but also have the potential to eliminate cancer cells. The ability to create T cells from self-renewing pluripotent stem cells could lead to new approaches to cancer immunotherapy and spur further research on T-cell therapies for viral infections such as HIV and autoimmune diseases. Among the technique's most promising aspects is that it can be combined with gene-editing approaches to create a virtually unlimited supply of T cells able to be used across large numbers of patients without the need to use a patient's own T cells.

T-cell therapies, including chimeric antigen receptor T-cell therapy, have shown great promise for treating certain types of cancer. Current approaches involve collecting T cells from a patient, genetically engineering the T cells with a receptor that helps them recognize and destroy cancer cells and then infusing the cells back into the patient. But engineered T cells do not always function well, treatment is expensive because it is tailored to each patient and some people with cancer don't have enough T cells to undergo the therapy.

Therefore, a technique that produces T cells without relying on collecting them from patients is an important step toward making T-cell therapies more accessible, affordable and effective. "My hope for the future of this technique is that we can combine it with the use of gene-editing tools to create 'off-the-shelf' T-cell therapies that are more readily available for patients," says Gay Crooks, MBBS, professor of pathology and laboratory medicine and of pediatrics, co-director of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA and director of the Cancer and Stem Cell Biology Program at the UCLA Jonsson Comprehensive Cancer Center.

Dr. Crooks and her team previously demonstrated that the 3D structure of an artificial thymic organoid allowed mature T cells to develop from adult blood stem cells and hypothesized that they would also support mature T-cell production from pluripotent stem cells.



A section of an artificial thymic organoid showing T cells (outlined in red) created from human embryonic stem cells.

Image: UCLA Broad Stem Cell Research Center

"The 3D structure of the artificial thymic organoid seems to provide the right supportive signals and environment needed for mature T cells to properly develop," she says.

One of the remaining challenges for the UCLA scientists is that the T cells created using the artificial thymic organoids have additional molecules on their surface that are not matched to each individual patient. Those extra molecules could cause a patient's body to reject the transplanted cells. "Our next step will be to create T cells that have the receptors to fight cancer but do not have the molecules that cause the rejection of the cells, which would be a major step toward the development of universal T-cell therapies," says Christopher Seet, MD (FEL '14), PhD '18, clinical instructor in the UCLA Division of Hematology and Oncology.

— *Mirabai Vogt-James*

"Organoid-induced Differentiation of Conventional T Cells from Human Pluripotent Stem Cells," *Cell Stem Cell*, January 17, 2019

Fractures, Head Injuries Common in E-scooter Collisions

UCLA researchers have found that people involved in electric scooter accidents are sometimes injured badly enough — from fractures, dislocated joints and head injuries — to require treatment in an emergency department. The researchers examined data from 249 people who were treated at the emergency departments of UCLA Medical Center, Santa Monica and Ronald Reagan UCLA Medical Center between September 1, 2017, and August 31, 2018. The study found that about one-third of them arrived by ambulance, an indication of the severity of their injuries.

"There are thousands of riders now using these scooters, so it's more important than ever to understand their impact on public health," says Tarak Trivedi, MD, an emergency physician and scholar in the National Clinician Scholars Program at the David Geffen School of Medicine at UCLA.

The research is the first published study on injuries caused by electric scooters. It reports that the most common mechanisms of injury among scooter riders were falls (80 percent), collisions with objects (11 percent) or being struck by a moving vehicle such as a car, bicycle or other scooter (9 percent).

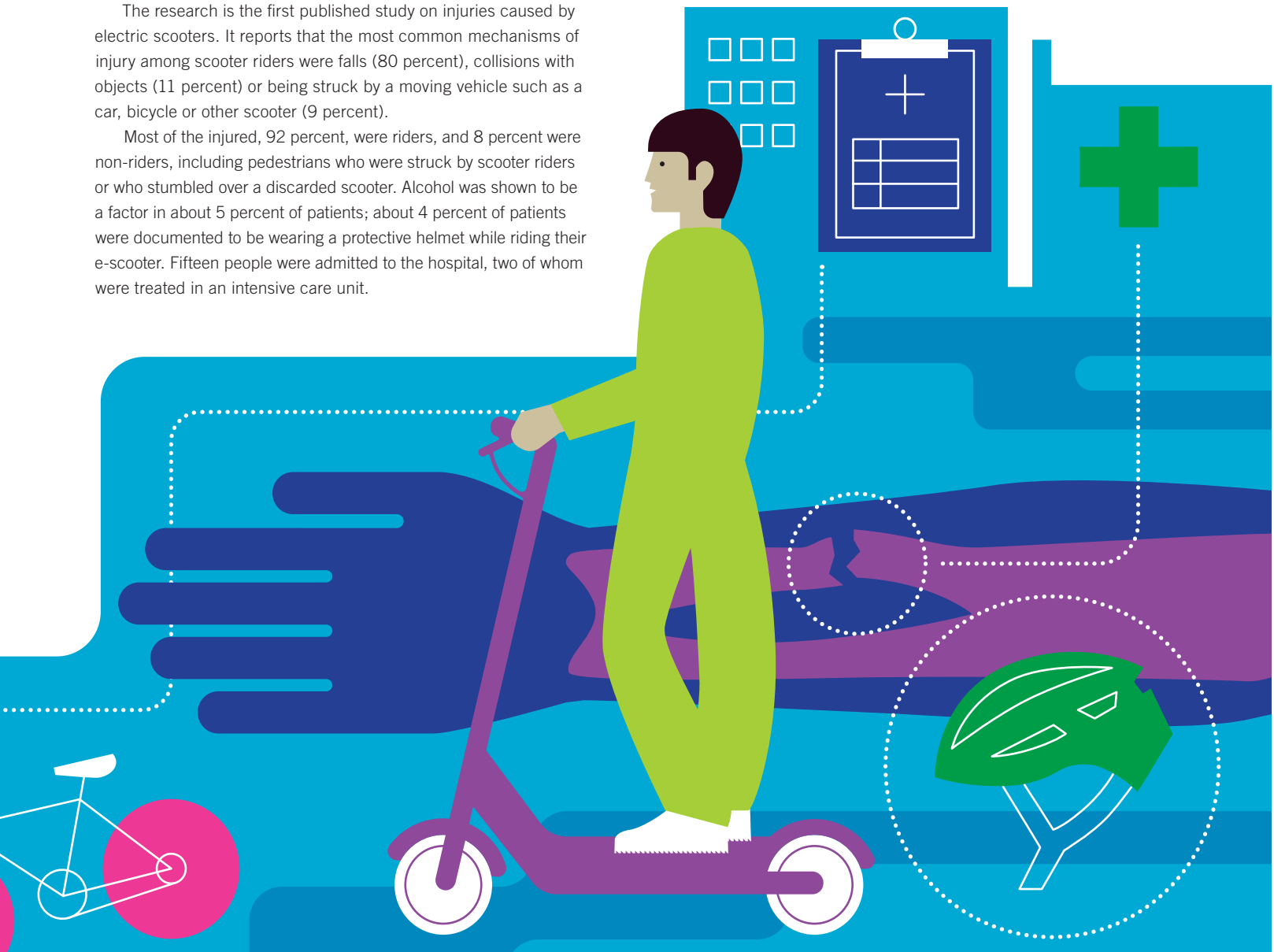
Most of the injured, 92 percent, were riders, and 8 percent were non-riders, including pedestrians who were struck by scooter riders or who stumbled over a discarded scooter. Alcohol was shown to be a factor in about 5 percent of patients; about 4 percent of patients were documented to be wearing a protective helmet while riding their e-scooter. Fifteen people were admitted to the hospital, two of whom were treated in an intensive care unit.

The authors noted some limitations of the study. The researchers were limited to the data available in electronic medical records, so information on certain variables — like whether or not riders were wearing helmets at the time of their injuries — was not always available. They excluded data on 74 emergency department visits that were suspected to be scooter-related but lacked sufficient documentation. They also could not evaluate the role that urban planning and infrastructure might play, for example the influences of speed limits and the availability of dedicated bicycle lanes.

The authors wrote that the Segway, a two-wheeled personal transporter that was introduced in the early 2000s and a precursor of the scooters, also carried a serious risk for orthopaedic and neurologic injuries. "We noted similar patterns of injury with the new standing electric scooters," says Joann Elmore, MD, MPH, professor of medicine in the UCLA Division of General Internal Medicine and Health Services Research. "But unlike Segway transporters, standing electric scooters will have a substantial impact on public health given their low cost, popularity and broad accessibility."

— Enrique Rivero

"Injuries Associated with Standing Electric Scooter Use," *JAMA Network Open*, January 25, 2019



Critical New Clues about What Goes Awry in Brains of People with Autism

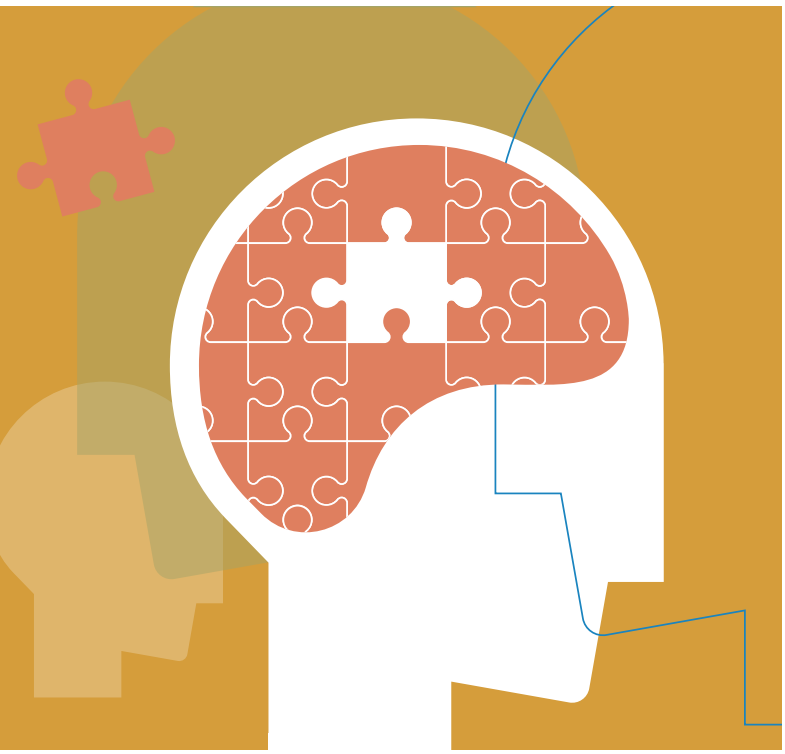


Image: Mark Sojka

A team of UCLA scientists has discovered important clues as to what goes wrong in the brains of people with autism. The new insights involve RNA editing — in which genetic material is normal but modifications in RNA alter nucleotides, whose patterns carry the data required for constructing proteins.

"RNA editing is probably having a substantial physiologic effect in the brain but is poorly understood," says Daniel Geschwind, MD (RES '95, FEL '97), Gordon and Virginia MacDonald Distinguished Professor of Human Genetics, Neurology and Psychiatry and director of UCLA's Institute for Precision Health. "RNA editing is a mysterious area, whose biological implications have not been much explored. We know what only a handful of these RNA-editing sites do to proteins. This study, which is the first comprehensive study of RNA editing in autism spectrum disorders, gives a new critical clue in understanding what has gone awry in the brains of autism patients.

The researchers analyzed brain samples from 69 people who died, about half of whom had autism spectrum disorder (which includes autism and related conditions) and about half of whom did not and served as a control group. Xinshu (Grace) Xiao, PhD, Maria R. Ross Professor of Integrative Biology and Physiology and director of UCLA's bioinformatics interdepartmental graduate program, and her research team analyzed 7 billion nucleotides for each brain sample. Dr. Xiao's team discovered reduced editing in the group members with autism. Specifically, they identified 3,314 editing sites in the brain's frontal cortex, in which the autism patients had different levels of RNA editing from the control group. In 2,308 of those sites, the individuals with autism had reduced RNA editing. In the 1,006 others, they had increased levels of RNA editing.

In the brain's temporal cortex, the people with autism had different levels of RNA editing from the control group in 2,412 editing sites, with 1,471 of those sites showing reduced editing levels. In the brain's cerebellum, the autism group members had different levels of RNA editing from control group members in 4,340 sites, of which 3,330 sites in the autistic brain had decreased levels. All three of these brain regions are very important in autism.

Dr. Xiao says that one can think of RNA editing as RNA mutations, analogous to the DNA mutations that are linked to many diseases. "The same piece of DNA can generate multiple versions of RNA and possibly lead to different protein sequences," she says. "RNA editing allows cells to create novel protein sequences that are not written in the DNA."

In another major finding, the researchers identified two proteins, called FMRP and FXR1P, that regulate abnormal RNA editing in autism spectrum disorder. FMRP increases RNA editing and FXR1P decreases RNA editing, the researchers discovered. The autism group had reduced editing levels regulated by FMRP, as well as reduced RNA editing overall. "This is the first strong data showing a broad and direct functional role for FMRP and FXR1P in the human brain and autism," Dr. Xiao says.

It currently is unknown if the changes the people with autism had in RNA editing caused their autism, contributed to the disorder or were a result of it. "We can't assign causality," Dr. Geschwind says.

RNA editing also may be disrupted in schizophrenia, bipolar disorder and major depression. The research team plans to continue to study this as well as other brain diseases.

— Stuart Wolpert

"Widespread RNA Editing Dysregulation in Brains from Autistic Individuals," *Nature Neuroscience*, December 17, 2018

Shorter Course of Radiation Therapy Effective in Treating Men with Prostate Cancer

A new UCLA-led study shows that men with low- or intermediate-risk prostate cancer can safely undergo higher doses of radiation over a significantly shorter period of time and still have the same successful outcomes as from a much longer course of treatment. This type of radiation, known as stereotactic body radiotherapy, is a form of external beam radiation therapy and reduces the duration of treatment from 45 days to four-to-five days. The approach has been in use since 2000 but has not yet been widely adopted because of concerns over how safe and effective this approach would be in the long term.

"Most men with low- or intermediate-risk prostate cancer undergo conventional radiation, which requires them to come in daily for treatment and takes an average of nine weeks to complete," says Amar Kishan, MD (RES '17), assistant professor of radiation oncology and a researcher at the UCLA Jonsson Comprehensive Cancer Center. "That can be very burdensome on a patient and a huge interruption in his life. With the improvements being made to modern technology, we've found that using stereotactic body radiotherapy, which has a higher dose of radiation, can safely and effectively be done in a much shorter time frame without additional toxicity or compromising any chance of a cure."

Men in the study were followed for a median of 6.9 years. Fifty-three percent of the men had low-risk disease, 32 percent had less aggressive intermediate-risk disease and 12 percent had a more aggressive form of intermediate-risk disease. The recurrence rate for men with low-risk disease was 4.5 percent, the recurrence rate for the less aggressive intermediate-risk was 8.6 percent and the recurrence rate for the more aggressive intermediate-risk group was 14.9 percent. Overall, the recurrence rate for intermediate-risk disease was 10.2 percent. These are essentially identical to rates following more conventional forms of radiation, which are about 4-to-5 percent for low-risk disease and 10-to-15 percent for intermediate-risk disease.

Researchers previously have found that stereotactic body radiation therapy was more cost effective because of the fewer treatments involved. Other research also has suggested psychological benefits, such as less regret about undergoing treatment. The current study now provides long-term data regarding the safety and clinical efficacy of this approach.

Dr. Kishan says the data show that the majority of the men followed are free of prostate cancer seven years after treatment. He added that there was no evidence that this therapy caused worse toxicity in the long term.

— *Denise Heady*

"Long-term Outcomes of Stereotactic Body Radiotherapy for Low-risk and Intermediate-risk Prostate Cancer," *JAMA Network Open*, February 8, 2019

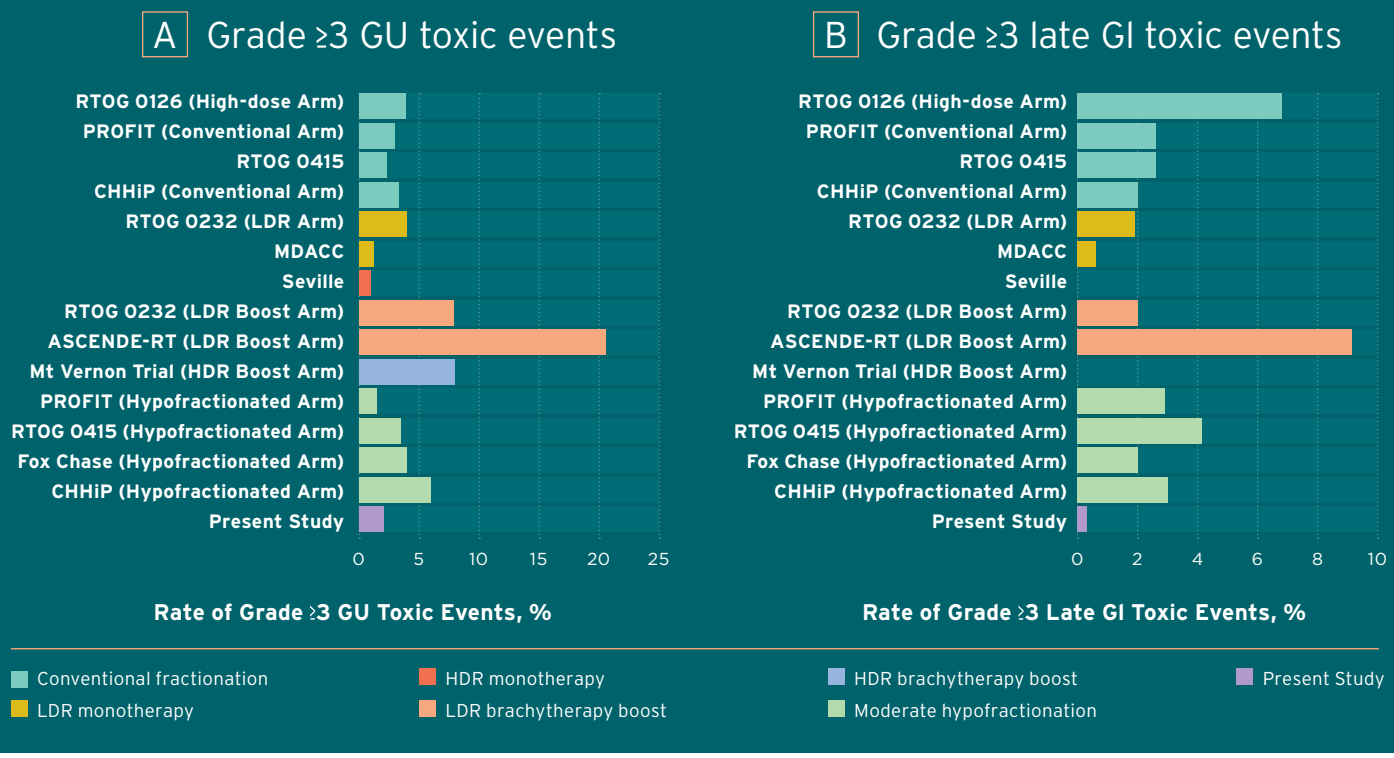


Figure shows rates of clinically significant urinary side effects, such as bleeding or obstruction (top), and clinically significant gastrointestinal side effects, such as bleeding or diarrhea (bottom), grouped by various treatment modalities. Rates of toxicity from stereotactic body radiotherapy are indicated at the bottom of each graph and appear to compare favorably with rates associated with other older and more commonly used techniques.

Graphic: Courtesy of Dr. Amar Kishan

Study Overturns Dogma of Cancer Metabolism Theory

Scientists at the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA have discovered that squamous cell skin cancers do not require increased glucose to power their development and growth, contrary to a long-held belief about cancer metabolism. The findings could bring about a better understanding of many cancers' metabolic needs and lead to the development of more effective therapies for squamous cell skin cancer and other forms of epithelial cancer.

A fundamental doctrine of cancer metabolism theory is that cancer cells are glycolytic, meaning they consume more glucose and produce more lactate than normal cells. This metabolic shift, called aerobic glycolysis, or the Warburg effect, has been observed

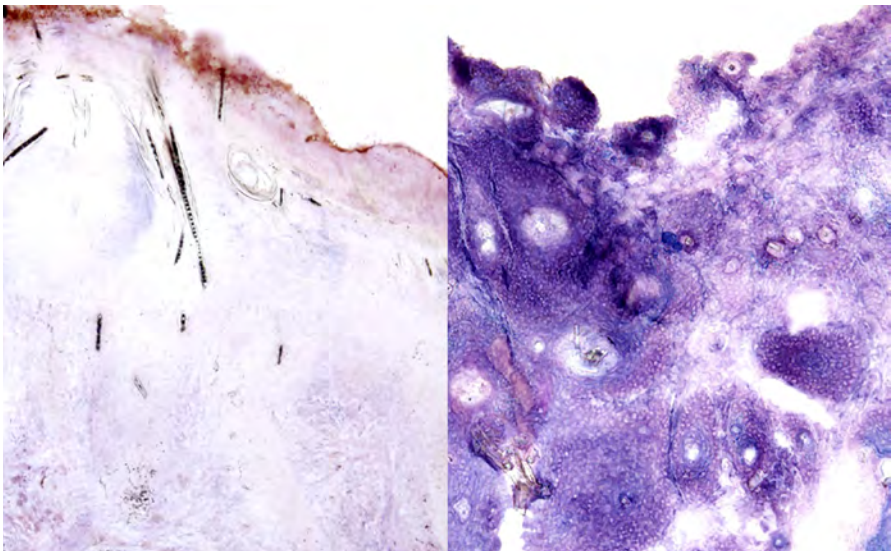


Image shows squamous cell skin cancer tumors with lactate production (a byproduct of glucose consumption) in purple. The tumor with lactate production blocked (left) grew at the same rate as the tumor with normal lactate production (right).

Image: Nature Communications/UCLA Broad Stem Cell Research Center

Electrical Activity Early in Fruit Flies' Brain Development Could Shed Light on How Neurons Wire the Brain

Neurons somehow know which of their neighbors to connect with and which to avoid in the crowded environment of the central nervous system. But how? Using fruit flies, UCLA neuroscientists observed that neurons displayed periodic bursts of electrical activity early in brain development, when the larva is still developing. The coordinated activity appears to be internally driven — not triggered by something outside of the brain. The findings suggest that the signals could help neurons find each other to form networks and wire the developing brain.

The scientists imaged the electrical activity of 15 types of neurons in the brain region involved in processing vision. All of the cells fired signals at each other for two days until the adult fly emerged. Of note, the consistent firing bursts reflect patterns of connectivity that have already been recognized in the adult fly's brain.

The authors suspect that the signaling ensures that connections established in the absence of cellular communication work properly in larger networks of neurons that collaborate to carry out specific functions.

Although this type of developmental spontaneous activity has been known for 30 years to occur in humans and other vertebrates, the UCLA study is the first time that scientists have observed it in an insect, whose brain was believed to develop in the absence of such activity. The discovery of a similar phenomenon in the fruit fly suggests that neurons' activity during development may be an essential phase of building a complex brain.

The scientists' next step will be to explore where the activity originates, how it's organized across the brain and how it contributes to brain development.

— Elaine Schmidt

"Cell-type-specific Patterned Stimulus-independent Neuronal Activity in the *Drosophila* Visual System during Synapse Formation," *Neuron*, January 20, 2019

in thousands of experiments and inspired treatments that aim to stop tumor growth by preventing cancer cells from increasing their glucose consumption. To date, this treatment approach has not proven successful in clinical trials.

Considering these clinical limitations, Heather Christofk, PhD, associate professor of biological chemistry and molecular and medical pharmacology, and William Lowry, PhD, professor of molecular, cell and development biology, set out to examine if increased glucose consumption is truly indispensable to cancer formation and growth. They decided to approach this problem using squamous cell skin cancer as a model, as they had made two key discoveries about the nature of this cancer in recent years.

In 2011, they determined that squamous cell skin cancer, which forms in the thin, flat cells found on the surface of the skin, can originate from hair follicle stem cells. Hair follicle stem cells produce hair throughout a person's lifetime and remain mostly inactive but spring to action during a new hair cycle, which is when new hair growth occurs. In 2017, the pair found that hair follicle stem cells are glycolytic and ramp up their glucose consumption to quickly activate and produce hair follicles.

"These findings led us to question: Are squamous cell skin cancer cells glycolytic because they are cancer cells that altered their metabolism to fuel their rapid growth or because the cells they originated from — hair follicle stem cells — were glycolytic?" Dr. Lowry says.

To answer this question, the team studied the progression of squamous cell skin cancer in animal models, whose hair follicle stem cells had been genetically modified to limit their glucose consumption. Specifically, they deactivated a gene called lactate dehydrogenase-a, which catalyzes the final step in a cell's process of converting glucose to lactate. Deactivating this gene prevented this final step from taking place, which in turn caused the cells to dramatically reduce their glucose consumption.

The change had no effect on cancer incidence or progression. When faced with insufficient glucose for their increased needs, the cancer cells in this model simply altered their metabolism to derive energy from the amino acid glutamine.

"These findings suggest that tumors are metabolically flexible and can use nutrients other than glucose to fuel growth," Dr. Christofk says. "Understanding all of the nutrients cancers use for growth is critical to developing drugs that can successfully target cancer's metabolism."

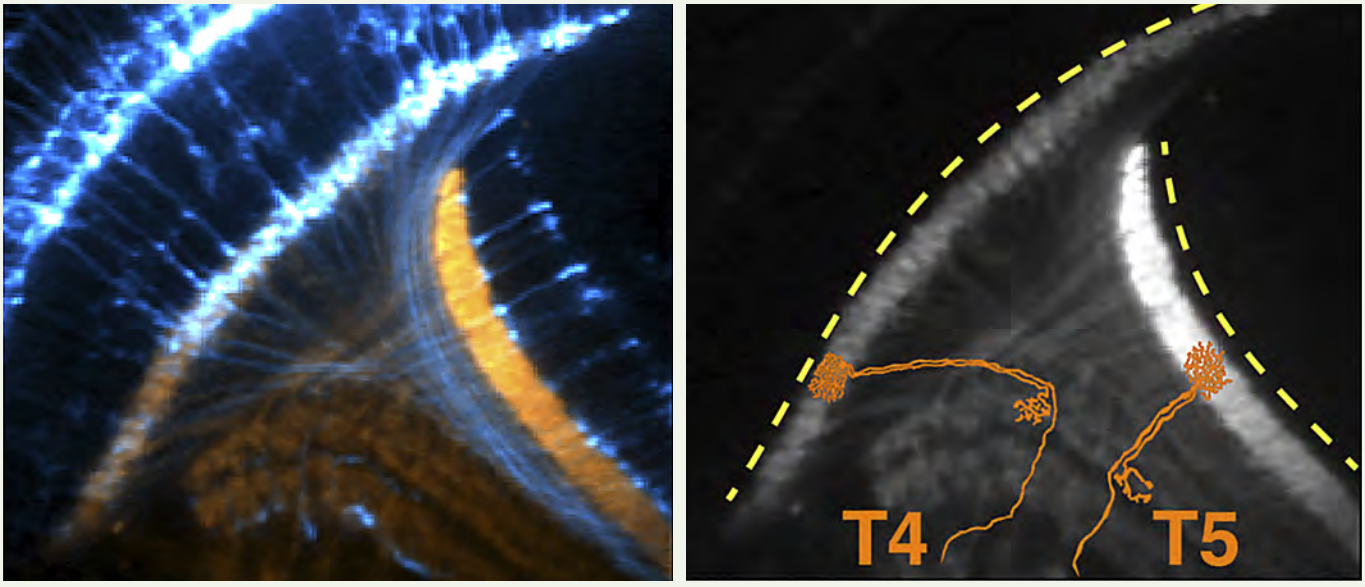
The team double-checked their findings by conducting a converse experiment using hair follicle stem cells that had been genetically modified to increase glucose consumption. If their initial finding was incorrect, stimulating glucose consumption would make the tumors grow faster — it did not.

As a next step, the team will conduct experiments to determine if reducing the consumption of both glucose and glutamine can stop the growth of squamous cell skin cancers.

"If limiting cancer's intake of both of these nutrients is shown to be effective, then that points to a path toward the clinic in the form of a combination therapy," Dr. Lowry says.

— Tiare Dunlap

"Increased Lactate Dehydrogenase Activity Is Dispensable in Squamous Carcinoma Cells of Origin," *Nature Communications*, January 9, 2019



Left: Electrical activity early in fruit flies' brain development could shed light on how neurons wire the brain. **Right:** The UCLA scientists observed consistent bursts of electrical activity in the developing brain of fruit flies. T4 and T5 indicate individual neurons firing.

Images: Akin Lab/UCLA Health

The Demedicalization of Mental Illness

Changing attitudes in medicine have meant that more people with severe psychiatric illnesses are denied admission to hospitals than in decades past. This may lead to their landing back on the streets, and perhaps even in jail. Joel T. Braslow, MD, PhD, is working to fix what he sees as a broken system.

Joel T. Braslow, MD, PhD

Frances M. O'Malley Endowed Chair in Neuroscience History

Professor, psychiatry and biobehavioral sciences

For much of his 27 years at UCLA, Joel T. Braslow, MD, PhD, Frances M. O'Malley Endowed Chair in Neuroscience History and professor of psychiatry and biobehavioral sciences, has studied and taught the history of medicine. A key focus of his research has been on medicine's shifting attitudes toward relevant issues, such as the nature of mental illness, and, in particular, how the medicalization — viewing problems that previously were considered to be nonmedical as medical in nature — and demedicalization of psychiatric illnesses have played against one another over time.

Exploring this interplay, Dr. Braslow coauthored the first in a recently launched series by *The New England Journal of Medicine* that explores how social forces and beliefs shape clinical care. In the piece, he writes about the impact of demedicalization of mental illnesses on people like Mr. N, a homeless man diagnosed with schizophrenia 30 years earlier. Psychotic, unable to house himself and hungry, Mr. N arrived at UCLA's emergency room for care but was not admitted and was released. "A resident recommended that he be admitted; the attending physician that he be discharged," Dr. Braslow says. Back on the streets, Mr. N landed in jail a few months later. The example of Mr. N shines a spotlight on a nationwide problem: the difficulties faced by ERs when presented with cases like Mr. N and how people in need too often slip through the cracks. "Demedicalization — seeing mental illness as a social problem and fundamentally outside of medicine's purview — has sent a lot of people back to the streets, and that's not always in their best interest," Dr. Braslow says.

Dr. Braslow spoke with *U* Magazine contributing writer Alice G. Walton about the factors that have led to demedicalization, its consequences and the steps that are necessary to address the issues it presents.

How did you become interested in the issue of demedicalization?

Dr. Joel T. Braslow: I am the director of the Social Sciences Track of the UCLA-Caltech Medical Scientist Training Program. Funded by the National Institutes of Health, the program supports students to get an MD and a PhD in the social sciences or humanities. I'm also a psychiatry attending physician supervising residents in the UCLA Psychosis Clinic, and, when I am on call, I supervise residents who see patients in the Emergency

Dr. Joel T. Braslow (center), with research collaborators (from left) Dr. Enrico Castillo, Ron Calderon, Valerie Vessels, Dr. Roya Ijada-Maghsoodi (RES '12, FEL '14) and Dr. Philippe Bourgois.

Photos and Digital Collage: Ara Oshagan

Department of Ronald Reagan UCLA Medical Center. I spend the balance of my time doing research on the care and treatment of individuals with serious mental illness. My research looks at the ways in which sociocultural forces shape public mental health policy, conceptions of mental illness and everyday clinical practices.

When I started my psychiatry residency, in the late 1980s, psychoanalysis recently had been dethroned by biological psychiatry and an increasing reliance on psychotropic drugs. I found this transformation fascinating, in part because it illustrated that social and cultural forces were at play in the ways in which we draw the boundaries between the normal and the pathological. I also found that looking historically at psychiatry could help tease out some of those forces. The history of psychiatry over the last 50 years illustrates significant changes in the care and treatment of people with serious mental illness. With the emptying, and later the closing, of most state hospitals in the late 1960s and 1970s and a growing reliance on drugs, psychiatrists' vision of what they can and cannot treat underwent a dramatic narrowing. For a psychiatrist of the 1950s, it would have been unthinkable not to intervene when an individual's psychosis led him or her to homelessness.

Today, psychiatrists see homelessness in their seriously mentally ill patients somewhat differently than did their predecessors in the 1950s. Because of the major sociocultural and economic changes, of which deinstitutionalization was a part, we now no longer see homelessness as an acute psychiatric emergency in need of immediate intervention.

How does this shift in attitude affect you as a psychiatrist?

Dr. Braslow: Los Angeles has the largest homeless population in the country. For those of us living in Los Angeles, we are reminded of this every day. The streets of Westwood, where I work, are home to numerous unhoused people, many of whom suffer

"Demedicalization — seeing mental illness as a social problem and fundamentally outside of medicine's purview — has sent a lot of people back to the streets, and that's not always in their best interest."

"I think we have transformed homelessness from a medical symptom in need of medical intervention — it is itself an indication that these people are unable to function in the world, which definitionally is an element of psychosis — into a societal issue that is outside of our medical purview."

from psychotic illnesses. I cannot help but feel a sense of sadness and guilt that I and my colleagues have been rendered incapable of caring for many of those who most desperately need our help.

When a patient comes into the ER, psychotic and unable to find housing because of his or her psychosis, my colleagues and I often are unable to provide the kind of care that a previous generation of psychiatrists would have considered a critical ingredient of psychiatric treatment. I think we have transformed homelessness from a medical symptom in need of medical intervention — it is itself an indication that these people are unable to function in the world, which definitionally is an element of psychosis — into a societal issue that is outside of our medical purview. With any other serious medical concern, we would feel that we need to address it. But in ERs throughout the country, we no longer consider someone who is homeless to be gravely disabled, even though it is their disorder that is driving their inability to find shelter and to function in general.

How did the medicalization of mental illness give way to its demedicalization in the latter half of the 20th century?

Dr. Braslow: Before the 17th and 18th centuries, psychosis, or madness, was interpreted in a variety of ways — religious, willful, moral and so on. Most people lived in agrarian, often tight-knit, communities where individuals afflicted with mental illness were cared for by their families, and the community.

With the rise of industrialization and capitalism in the 18th and 19th centuries, communities became increasingly fragmented, families shrunk and, to survive in the changing economy, many people moved to cities. The shift from an agrarian-based economy to one dependent upon industrial production led to rapid urbanization and a dependency on wage labor. Taken together, all of these factors made it increasingly difficult for families to care for their mentally ill loved ones. Quite similar to the circumstance we find ourselves in today, growing numbers of individuals with serious mental illness found themselves jailed, homeless or living in a variety of inhumane conditions.

In the first half of the 19th century, a growing chorus of reformers called for funding of public asylums. An important aspect of this moment in the history of psychiatry was the "medicalization" of psychiatric illnesses. That is, madness no longer was viewed through a moral or religious lens. As such, the creation of the vast network of asylums created by states rested upon the newly minted belief that madness was a medical illness and that one could cure it by creating specialized institutions called asylums, which were renamed "state hospitals" in the early 20th century.

Despite popular conceptions, my research suggests that state hospitals and their staffs, though often flawed, attempted, and often succeeded, to provide humane care. Patients easily came and went. Wards often were unlocked. In California, state hospitals provided care for all who needed it regardless of ability to pay. These institutions provided a vital refuge, even if imperfect, for those who were unable to function in a rapidly industrializing America. State hospitals instituted a wide variety of therapeutic activities, ranging from occupational and industrial therapy to beauty shop therapy and bibliotherapy.

What began to change?

Dr. Braslow: The state hospital system began to falter in the 1960s. Though conditions had improved substantially after World War II, this came at substantial cost. Some states spent upwards of 25 percent of their budget on their state hospital system. With a brewing economic crisis over the course of the 1960s, states increasingly questioned the cost of mental health care. The passage of Medicaid and Medicare in 1966 gave states the ability to shift the burden of care onto the federal government. Largely an unintended consequence, the passage of Medicaid and Medicare legislation led to a dramatic decline in state hospital populations. Much like the process in which the medicalization of psychosis helped to rationalize the asylum movement of the 19th century, the belief that community care was better than state hospital care helped to rationalize the massive decline in state hospital populations from a peak of 550,000 to about 40,000 patients today.

The problems that the mentally ill face in Los Angeles painfully illustrate the failure of public policy. This is especially obvious in our massive



homeless population, many of whom are homeless by virtue of their mental illness. More hidden, but perhaps even more tragic, is the number of mentally ill people who are incarcerated in the Los Angeles County Jail. In fact, with nearly 5,000 inmates on any given day, the Twin Towers Correctional Facility in downtown Los Angeles is de facto the largest psychiatric institution in the country.

What is being done at UCLA to address this issue?

Dr. Braslow: Our psychiatry residents have been remarkable in waking up the faculty to our responsibility toward those with serious mental illness. Along with junior faculty members, they have been instrumental in creating the UCLA Community and Global Psychiatry Program. What ties them together is a deep concern for the mentally ill and the ways in which social inequality and injustice contribute to the suffering of their patients. The residents helped to establish a clinical rotation at Twin Towers, they advocate for better care of indigent psychiatric patients and they actively challenge the attitudes of their attending physicians. They have, over the past few years, become increasingly concerned about this problem, and they now are more interested in public psychiatry. It is quite remarkable, I think, how much this attitude has changed over the past five-to-10 years. In fact, our residents have been instrumental in creating more classes in public psychiatry; we now have 20, up from six. And we have a new concentration in community psychiatry. They have made me feel enormously hopeful for the future of psychiatry.

What needs to happen politically and within the larger medical community?

Dr. Braslow: Psychiatrists have a moral responsibility to alleviate all aspects of psychiatric suffering, regardless of the often arbitrary distinctions between the social, psychological and medical causes. The medical community needs to think more broadly about the fundamental nature of psychiatric illness and to treat it appropriately. We need to acknowledge that psychiatric disease is reflected as much in an individual's social and psychological worlds as it is in disordered neurotransmitters. If we accept the reality that mental illness is a disease that ignores the distinctions we arbitrarily make between psychological and social well-being, then I think we will be less willing to withhold care from our most vulnerable and sickest patients and allow them to languish either in jails or on the streets.

"Medicalization and Demedicalization — A Gravely Disabled Homeless Man with Psychiatric Illness," *New England Journal of Medicine*, November 15, 2018

"Our psychiatry residents have been remarkable in waking up the faculty to our responsibility toward those with serious mental illness. ... What ties them together is a deep concern for the mentally ill and the ways in which social inequality and injustice contribute to the suffering of their patients."

Brain Chat

Baljit S. Khakh, PhD
Professor, Physiology and Neurobiology

ILLUSTRATIONS BY RAÚL COLÓN

In 1899, the Spanish neuroscientist Santiago Ramón y Cajal showed the close spatial relationships between astrocytes, a type of glial cell, and neurons in the brain. Today, 120 years later, Dr. Baljit S. Khakh is working to better understand how astrocytes — which represent about 40 percent of all the cells in the brain — communicate with each other and with other cells. Answering these fundamental questions will help to increase our knowledge about their possible role in contributing to human brain disorders such as Huntington's and Alzheimer's diseases.

Dr. Khakh steps into the *U* Magazine spotlight

When did you first start thinking about science?

When I was about 8 or 9 years old, my older brother bought me an encyclopedia of science and technology, and I remember looking at pictures of a steam engine or a cross-section of a road and being quite amazed at how things were built and worked. About a year later, he bought me another book about the wildlife that you could observe if you sat silently and looked around from the forest floor. I don't know if there was a single event that got me interested in science, but those two things I look back upon fondly.

What was your first science experiment?

My first real experiment was when I volunteered in a lab for a summer as an undergraduate. It involved looking at the effect of lithium ions on a presynaptic calcium channel that affected the release of a neurotransmitter onto a bit of small intestine of the guinea pig. I worked on it for two months, but the experiment wasn't very useful, and we didn't learn very much.

Who is your science hero?

I've always admired a couple of people: Alan Hodgkin, who was a British physiologist who did some pioneering work on the action potential, and Otto Loewi, who was a German pharmacologist and who was one of the people who discovered chemical synaptic transmission. They did some amazingly elegant experiments that have stood the test of time and were very insightful.

What are the qualities of a great scientist?

Honesty has to be very high up there. Science is a complicated business, and people make mistakes. They follow blind alleys that lead nowhere. The only way out of that is honesty. And since most things you try don't work, perseverance is a very important quality.

What do you appreciate most in your colleagues?

I appreciate people who are willing to think and have a nuanced discussion and be open-minded about how to move things forward.

What is your motto?

When I ran a lab at the MRC Laboratory of Molecular Biology at Cambridge, there was a quote outside the lecture theater by (Nobel Prize-winning molecular biologist) Max Perutz that said, "In science, truth always wins." I don't have my own motto, but I'm very keen on the one by Max Perutz.

If not a scientist, what would you be?

A farmer. I know a few farmers, and the farmers I know are physically and mentally very tough people. I don't think I would have made a very good farmer, and I probably would have died of starvation pretty quickly, but I have this romantic notion that it would have been good to be a farmer.

What is your most treasured possession?

A friend gave me a sketched portrait of a dog I used to own. This dog — Otto, after Otto Loewi — was such a fantastic companion. He died about a year-and-a-half ago, and, so, I think this portrait of him is, right now, my most treasured possession.

What keeps you up at night?

I recently got a new dog. He is 11 weeks old, so he needs to go out and do his duties every few hours. And we have another Boxer we rescued about a year ago, and she wants to go for a long walk at 5:30 every morning. Between the two of them, they are what keep me up at night.

Where does your inspiration come from?

I really enjoy running a lab and doing experiments. I really like being in an academic environment. At a very deep level, I believe it is a real privilege to do what we do, to be able to come to work, to be able to think freely, and, essentially, to work on whatever we want. That opportunity in itself is inspiring.

What has been your biggest "aha" moment?

In the last eight years, I've been very surprised at how astrocytes are increasingly shown to regulate neural circuits and behavior. Some of that work has come from my lab and some has come from other labs. It isn't really an "aha" moment; it's sort of a "hmmm" moment, a realization. I think that's really quite interesting, and it is an idea that we're trying to pursue.

What is your definition of happiness?

I haven't really thought about a definition of happiness. I guess, perhaps, I am too busy trying to find it and enjoy it, but I haven't had time to reflect on what it actually is.

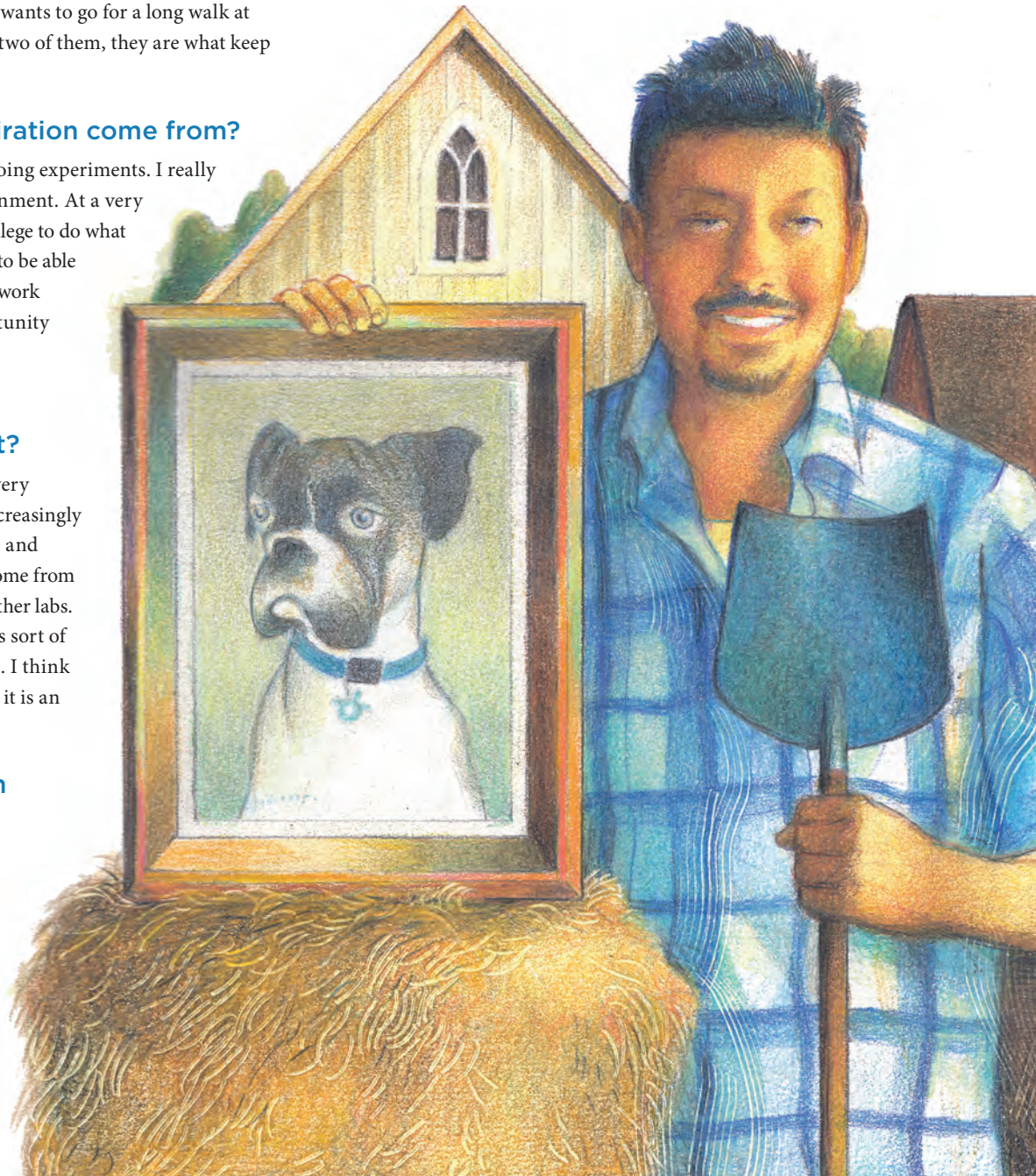
What is your idea of misery?

I like to go for a coffee on my way to work, and I hate it when there's a long queue in the coffee line. And on the weekends, I like to go to my favorite sandwich place and get a sandwich for lunch, but they change the people who work at the deli counter so often that they can never make the perfect sandwich. Those are two things that I find, at a very superficial level, to be misery.

What music do you listen to while you work?

I've never listened to music at work. I'd love to wear noise-canceling headphones, but I've resisted the temptation just in case people find it rude.

Dr. Khakh's responses have been edited for length and clarity. To read a fuller transcript of his responses to these and other questions, click on the link to this article at: uclahealth.org/u-magazine



A New Kind of House Call

BY MARINA DUNDJERSKI • PHOTOGRAPHY BY ARA OSHAGAN

As hospitals try to find ways to reduce the number of repeat emergency room visits and readmissions, UCLA Health is undertaking an emerging avenue of prevention: medical student "hotspotters."

A group of medical student "hotspotters" and a physician from the David Geffen School of Medicine at UCLA huddle in a circle outside an apartment complex in Santa Monica as they discuss a few final details before preparing to go inside. This is not your typical doctor's visit or rounding. It is a new kind of house call.

"We're meeting the patient where she's at," reminds fourth-year medical and public health student Damond Ng, invoking the mantra of the hotspotters. Ng and four other students are waiting for Shebyon Bedgood, who is running a few minutes late from her nearby clinic appointment at UCLA Medical Center, Santa Monica. Ng, who also is copresident of the hotspotters, encouragingly guides the others under the watchful eye of Sun M. Yoo, MD (RES '16), medical director of the Extensivist Program and Care Transitions for the UCLA Department of Medicine.

Ng mentions that the team should keep an eye out for a number of key factors that affect health, such as financial difficulties — explaining that low-income patients with diabetes have 25 percent higher admission rates at the end of the month than those with higher incomes — or depressive symptoms that could hamper medical compliance. "Let's keep the antennae up for those," he says as he glances at a checklist of questions. "But let's make sure that our questions are open-ended."

As hospitals try to find ways to reduce the number of repeat emergency room visits and readmissions, UCLA Health is undertaking an emerging avenue of prevention: medical student "hotspotters." Now in its second year, the program's student hotspotters already have improved health outcomes for participating patients.

The program, which originated in New Jersey as part of the Robert Wood Johnson/Camden Coalition of Healthcare Providers initiative and was adopted by the American Association of Medical Colleges, has expanded to include students from nursing, social work, pharmacy, public health, business and dentistry, as well as medicine. The students work in interdisciplinary "pods" of about five each and are assigned to a particular patient for six months, tracking care and going to homes to find social and safety determinants that may be missed in a typical office visit or hospital admission. Some hotspotters, such as dental and pharmacy students, will float between patients, as needed.

"By doing home visits, the hotspotters can bring so much more clarity to situations than patients might volunteer in an office visit, and in an abbreviated amount of time," says David Hubley, a clinical social worker for UCLA Health outpatient services.

Dr. Sun M. Yoo (right) and Shebyon Bedgood embrace after a home visit from her hotspotters team (shown with her opposite page). Patients say that having the company of the medical students is an element of the program that they particularly enjoy and can help to reduce their social isolation.

First-year medical student Kenneth Hahn (left) checks his patient's blood pressure under the watchful eye of Dr. Sun M. Yoo. The hotspotters program often provides students with their first clinical experience.

"We have developed a curriculum to teach students about social determinants of health, how to work in teams, leadership training, how to conduct home visits and how to think outside the box, as we often are taking care of patients for whom the system has failed or been inadequate."

Currently, students volunteer in the program outside of their formal medical training, but leaders of the David Geffen School of Medicine at UCLA are working to have it be an official part of the curriculum, which would make UCLA one of just a very few institutions to do so.

"I absolutely believe that when people say things like 'high utilizer' or 'frequent flier' — names that frustrate medical staff [and are common labels for frequent emergency department visitors] — it implies that it's the patient's fault," says Dr. Yoo, who helped to launch and who runs the program. "In actuality, it shows the vulnerabilities and holes in the system. We have developed a curriculum to teach students about social determinants of health, how to work in teams, leadership training, how to conduct home visits and how to think outside the box, as we often are taking care of patients for whom the system has failed or been inadequate."

SHEBYON BEDGOOD HAS HAD MORE HOSPITAL VISITS THAN SHE CARES TO REMEMBER. Diagnosed as a child with juvenile diabetes, the 49-year-old received a kidney transplant as an adult and later developed repeated urinary tract infections. Afflicted with night blindness as a result of diabetic retinopathy, she had fallen down a flight of stairs in her apartment and suffered injuries leading to a sepsis infection and subsequent partial toe amputation. Last year, she was diagnosed with breast cancer; after surgery, radiation and chemotherapy, she now is in remission. And earlier this year, her mother died.

Bedgood was identified as a candidate for the hotspotters team. She goes to about 10-to-15 medical appointments per month and takes about 25 required medications every day. Prior to being in the program, she went to the emergency room on a monthly basis, with some hospital admissions lasting for weeks. But for the past 12 months, she has had just two admissions.

"Before coming to UCLA and this program," she says, her voice cracking slightly, "I really didn't think I would be here now."

Inside her home, Bedgood and the hotspotters sit down on comfortable sofas, introduce themselves and exchange pleasantries before beginning to assess how best to help Bedgood continue with her care. Her dog barks loudly at every passerby but already seems smitten with the hotspotters.

Each of the team members, in an organic yet considered fashion, asks Bedgood a series of questions. The inquiries are designed to learn not just about Bedgood's medical needs, but also about her personally.

She had, at one time, worked at the VA, and she also ran a catering business. She switched insurance plans, and now premiums are more manageable. Her daughter used to live next door with her children, but recently she moved away, and Bedgood has felt a bit more isolated. Bedgood is from the South, and she loves to cook and used to invite neighbors over for barbecues. But in Santa Monica, she was surprised when wary neighbors questioned her invitation to come over for dinner. Her mother's death has profoundly affected her, and she has slipped behind a little on plans to take some classes to create more of a local social network. Despite everything, her attitude has remained positive. And she is joyful to have the hotspotters there.

There is one thing that is causing her some anxiety: the number of medications she has in her home. A little while later, Bedgood retreats upstairs to her bedroom with hotspotters in tow to bring out her numerous medications, which she begins piling onto her bed. While she does this, some hotspotters survey her living arrangements. There are a few red flags. The lighting on the staircase is poor, especially for someone with night blindness and a history of falls. There is no shower chair or slip-proof mat in the bath. There are unsecured throw rugs in precarious spots, including ones at the foot of her bed and at the top of the stairs. These are things the hotspotters will bring up with her and make recommendations, Ng says quietly.

The medications are gathered and brought downstairs and, after some 30 minutes of sorting

and organizing, expired medications, duplicates and those that are no longer necessary are removed in a black trash bag to be disposed of properly. Bedgood is delighted to see the reduction. "You can take the whole lot of 'em!" she exclaims, with a laugh. Alaina Austed, a fourth-year pharmacy student at USC who is completing a rotation at UCLA, promises to create a comprehensive list for her, and the team adds a note to provide Bedgood with better storage boxes.

As the medications are sorted, Kelly Verzthum, a third-year UCLA dental student, asks Bedgood some questions about her oral health. Satisfied that her patient is getting the proper dental care (including orthodontia), Vertzthum recommends an over-the-counter rinse to address Bedgood's dry mouth, a side-effect from the oral chemo medication. "I didn't realize the connection," Bedgood says. "I will try that right away."

Next, the students address some of the potential hazards that they identified. Bedgood says that her brother-in-law will help with the stairway lights. It had never occurred to her that the loose throw rugs might be a potential safety issue. "I just thought they were cute," she says. "It's such a simple thing to do. I will remove them." As for the shower chair, she says she has wanted one for some time but hasn't gotten around to it. The hotspotters take note — they subsequently provide one to her through a small discretionary fund set up to help with such needs.

When it comes time to say good-bye, there are hugs. "The visit went very well," Ng says later. "We didn't just start off with 'these are your health concerns;' we took time to get to know her, especially since she had just lost her mom. We didn't want to overwhelm her. And she even expressed at the end that having the company is a part of the program that she particularly enjoys."

THE HOTSPOTTERS ARE THE STUDENT ARM OF UCLA HEALTH'S EXTENSIVIST PROGRAM, a hybrid inpatient-outpatient program for complex patients. It was launched by Dr. Yoo in July 2017, with support from the Department of Medicine.

Candidates are selected for the program, using an algorithm developed by UCLA's population health team that considers diagnoses, age, geography and other factors to identify patients who are at highest risk for hospital admission. Many of these patients have had two or more hospitalizations or four or more emergency department visits in the prior year. The program's most common diagnoses include congestive heart failure, advanced cancer, history of organ transplantation and end-stage renal disease. But there are numerous other complex conditions. The ages of patients range from 18 to 101, with the average patient in his or her 60s.

USC pharmacy student and member of the hotspotters team Alaina Austed, who is completing a rotation at UCLA, sorts through hundreds of medication bottles during a home visit as UCLA medical student Kenneth Hahn observes. Austed discards medications that are expired, duplicates or no longer needed. Making sure that patients keep on top of their medication schedule is a key way for hotspotters to help prevent emergency department visits.

A study of the first 150 patients — comparing the six months prior to enrollment to the six months after enrollment — shows a 69 percent decrease in hospitalizations and a 67 percent decrease in emergency department visits.

In less than two years, the Extensivist Program has seen more than 400 patients. Indications are that not only is it working, it is working well. A study of the first 150 patients — comparing the six months prior to enrollment to the six months after enrollment — shows a 69 percent decrease in hospitalizations and a 67 percent decrease in emergency department visits.

"The preliminary data are quite remarkable," Alan Fogelman, MD '66 (RES '68, '71; FEL '73), chair of the Department of Medicine, says.

The team is not only tracking utilization, but also quality of life, patient satisfaction, access and disease-specific quality metrics. "We are strong believers in a 'quadruple aim,'" Dr. Yoo says. This includes the Institute of Healthcare Improvement's triple aim of improving population health, per capita cost and patient experience, as well as provider satisfaction. The additional data still are being compiled and analyzed, but anecdotal patient feedback so far has been overwhelmingly positive, Dr. Fogelman says.

Fourth-year medical student Jennifer Cohenmehr listens for a bruit, or vascular murmur, to check how patient Hector Jimenez's dialysis fistula is functioning.

"With each step of building our program, we have asked ourselves: 'Is this the type of program we would want our family members to be taken care of in?' This has always kept us on track," Dr. Yoo says.

"It is great that we are seeing a decrease in utilization from a system standpoint," she continues. "But as a primary care physician and extensivist, my highest priority is to improve the quality of care for my patients. I want my patients to be able to feel better, know they are supported and be able to spend more meaningful time at home with their families."

IN ADDITION TO DR. YOO, THE HOTSPOTTERS TEAM INCLUDES William Carroll, MD; Yihan Chen, MD (RES '17); Shanon Peter, MD; Nathan Samras, MD; and geriatric pharmacist Grace Cheng. Each mentors and oversees a pod of student hotspotters, with the exception of Cheng, who consults across the groups as needed.

Drs. Peter and Samras both were trained by Jeffrey Brenner, MD — the MacArthur "genius" recipient who founded the Camden Coalition — when they attended Robert Wood Johnson Medical School in New Jersey. Dr. Brenner pioneered the notion of extensivists (also known by other terms, including comprehensivists and complex-care physicians) and of student hotspotters as a way to try to help heal a fractured national healthcare system and address the needs of complex patients, who often are dealing with a combination of medical, social and mental health issues.

Dr. Brenner believes that innovation in education is required to get medical students working together to care for these most complex patients and keep them from falling through the cracks. Students, he says, are hungry for such innovation. "With the hotspotters movement, students are voting with their feet," Dr. Brenner says. "They would like to learn to work in teams and to learn a new and different approach to working with patients. The last generation created student-run clinics, and that was quite successful. This is the next wave of the movement."

In some instances, Dr. Brenner says, students are far ahead of the schools where they are training. "They have seen patients who have been mistreated, and they have had enough and want to roll up their sleeves and do a better job for their patients by working through a bigger lens," he says.

Jennifer Cohenmehr is one such student. A fourth-year medical and public health student,

Cohenmehr has volunteered with the student-run UCLA Mobile Clinic Project, which serves the homeless population on the streets of Hollywood, and she is copresident of the UCLA hotspotters. Many of the people she met on the street "have had encounters where they experienced discrimination or negativity from the health care system," she says. "I've always felt that the bigger goal was to get these individuals plugged into the larger continuum of care."

Clarence H. Braddock III, MD, MPH, vice dean for education and chief medical education officer at the David Geffen School of Medicine at UCLA, is an avid supporter of the hotspotters program, and he is working to scale up the initiative to become part of the school's formal curriculum. "It's a win-win," Dr. Braddock says. "It is a win for the health care system to extend its reach into patients' homes and community, and it is a win for trainees in that it's a way for them to do something deeply meaningful early in medical school and to practice their craft in a way that includes authentic responsibility and real care of a patient."

Kathleen Noonan, current CEO of the Camden Coalition, hopes that other schools will follow the lead of institutions like UCLA. "It is our goal that, at some point, enough schools will have this as a standard part of their curriculum for their medical students, as well as for students in other health-related programs such as social work, nursing and physical therapy," she says. "It gives students tools and a framework for dealing with society's toughest medical issues — a blueprint for complex care."

IN GRANADA HILLS, MEMBERS OF ANOTHER HOTSPOTTERS TEAM, with Dr. Chen, visit Hector Jimenez. Jimenez has been on dialysis for 33 years, since he was 11 years old. He also suffers from anxiety and panic attacks. It took some gentle encouragement to convince Jimenez to join the program. When the hotspotters paid their first visit, he was in a highly emotional state; his wife, who also must undergo dialysis, was hospitalized with a serious intestinal infection.

But this visit is different. With his wife Anali now recovered and back home, Jimenez is all smiles when he comes outside to greet the hotspotters. Gathered around the kitchen table of his father's home, where he and his wife live, Jimenez opens up to the team. They learn that he and Anali met at a UCLA dialysis unit and that it took him five years to ask her out; that the pediatric patients he regularly took out to lunch after their dialysis treatment dubbed him Superman; that he had worked as an insurance broker until he became too ill to continue. He has suffered two strokes, and he was put into a medically induced coma for 15 days. Thankfully, he says, he has no lingering effects. During that difficult time, a friend dubbed him "Soul Survivor," which Jimenez later had tattooed on his arm so he never would forget his will to survive.

During the previous visit, the hotspotters talked with Jimenez about his receiving dental work. Today, his chief medical complaint is tingling in his arms and fingertips, a fairly new development. Dr. Chen and hotspotter Cohenmehr perform a Spurling's test on his head and neck to check for radicular pain. Subsequent imaging tests will be scheduled to try to identify the cause of the sensation.

At the end of the visit, there are, again, hugs all around. "I am so grateful to Dr. Chen and to this program," Jimenez says. "There was a time I thought this was it for me and that I would die. Faith and family are key. And I know UCLA Health is No. 1 on the West Coast, but for me it's No. 1 in the world."

PATIENTS CYCLE IN AND OUT OF THE HOTSPOTTERS PROGRAM. There currently are five active patients with corresponding medical pods, but Dr. Yoo and the other extensivists hope they will be able to increase the number of students who participate as word of mouth about the program spreads. The more students who sign up, the more patients they can enroll.

Beyond the benefits that such a program can deliver to patients, Dr. Braddock sees its potential as a balm for the growing issue of physician burnout. "Doing things in your work or during your training that have deep meaning can be a powerful antidote to burnout," he says.

For Cohenmehr, her home visit with Jimenez stands out as a defining moment. "This is what medicine is all about," she says. "This is why I went to medical school. It's something very special, and I hope I can incorporate that in my career."

Marina Dundjerski *is a frequent contributor to* U *Magazine and the author of* UCLA: The First Century.

Hector Jimenez, who has been on dialysis for 33 years and has suffered two strokes, proudly shows off his "soul survivor" tattoo to his hotspotters team. Home visits allow for a greater personal connection between patients and their medical care providers.

"It's a win-win. It is a win for the health care system to extend its reach into patients' homes and community, and it is a win for trainees in that it's a way for them to do something deeply meaningful early in medical school and to practice their craft in a way that includes authentic responsibility and real care of a patient."

STEPPING BACK FROM THE EDGE

BY DAN GORDON

For many people, dealing with adversity is an all-too-common issue in their daily lives. Programs like UCLA's Families Overcoming Under Stress and Strategies for Enhancing Early Developmental Success are striving to break through the barriers to help.

In hindsight, it all seems to have been so obvious. But at the time, Melissa Comeau remembers wondering what was wrong with her husband Stephen and questioning the state of her marriage.

Staff Sgt. Stephen Comeau was a proud member of the U.S. Marine Corps who completed four combat deployments in Iraq and Afghanistan over the course of his 13-year active-duty career. For the initial invasion of Fallujah, Iraq, in 2004, Comeau was part of the first group to go in — the so-called "tip of the spear." He returned to Fallujah later in the year to serve in Operation Phantom Fury, the bloodiest battle of the Iraq war.

It was after Comeau came back from his third deployment, to Afghanistan, that his wife knew something was wrong. Comeau showed little interest in spending time with Melissa and their 18-month-old son, even though it had been six months since he had seen them. "He would just stay in the garage all day, shutting us out and listening to music," Melissa Comeau recalls. "Everything irritated him. The person in front of us at Starbucks would complain that his coffee had the wrong milk, and Stephen would become infuriated that people didn't understand what real problems were."

Melissa Comeau feared that the relationship was teetering, as her husband became more distant and angry. "I always felt like I was walking on eggshells, trying not to set him off, but of course it wasn't really about me," she says.

The day after one of Stephen Comeau's particularly explosive outbursts, he returned from the military base early, sat his wife down and told her he had visited the deployment health center, where he was told he had the symptoms of post-traumatic stress (PTS).

"I am one of the very lucky caregivers, in that my husband reached out on his own and was willing to accept help," Melissa Comeau says.

Melissa Comeau: "I am one of the very lucky caregivers, in that my husband reached out on his own and was willing to accept help."

Photo: Robin Jerstad

IN 2006, PATRICIA LESTER, MD (FEL '00), AND COLLEAGUES AT UCLA AND HARVARD created Families Overcoming Under Stress (FOCUS) to provide training to military family members in skills designed to build on strengths and reduce stress through communication, problem-solving and proactive strategies, including learning how to recognize and cope with emotional triggers. In the decade-plus since, the program has grown substantially. Now administered through a contract with the U.S. Department of Defense, FOCUS offers resilience-building training at 34 U.S. military installations around the world, with UCLA continuing to provide the training, support and evaluation to ensure that it runs effectively. FOCUS is based in the UCLA Nathanson Family Resilience Center, directed by Dr. Lester, Jane and Marc Nathanson Family Professor of Psychiatry. The center is part of the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.

As Stephen Comeau was in the process of being treated for his PTS, the case-management team suggested that he and his wife enroll in a FOCUS resilience-training program at the Marine Corps Recruit Depot in San Diego. The results were dramatic. "The communication skills we got from FOCUS continue to serve us today," Melissa Comeau says. The couple learned how to break down problems to make them more manageable. They learned to label undesired behaviors as a self-awareness strategy to facilitate stepping back, calming down and reevaluating a situation. Through a better understanding of her husband's continued struggles, Melissa Comeau was able to recognize emotional triggers. "Knowing you have the skills to get through the hardest times gives you a feeling of strength," she says.

Building on the success of FOCUS with military families, the Nathanson Center has initiated a range of new family-centered programs designed to enhance natural strengths

''Certainly, there are levels of adversity that are so substantial that resilience skills aren't going to be enough, and we need to provide additional levels of support and care. But we also understand that in less overwhelming situations, most people, families and communities are capable of extraordinary resilience.''

and provide tools to overcome current and future setbacks and challenges. Among its ongoing partnerships, the center has joined with the Los Angeles Unified School District on an adaptation and implementation of the FOCUS curriculum to enhance the resilience of elementary, middle and high school students, reaching more than 2,900 students in the 2017-2018 school year. Recently, the Los Angeles County Department of Mental Health collaborated with the Nathanson Center to develop a Prevention Training Center of Excellence to support provider training in trauma and resilience-informed practice across Los Angeles County.

Although the programs' designers tailored them to meet the needs of their target populations, they share the goal of building psychological resilience — defined by Dr. Lester as the ability to cope with, adapt to and thrive amidst stress, illness, injury, trauma, loss and other adversity. "Everyone faces stressors and challenges," Dr. Lester says. "The ability to navigate those challenges and stay on course is a critical skill."

RESILIENCE MIGHT WELL BE AS IMPORTANT AS INTELLIGENCE in determining lifelong success and well-being. Dr. Lester notes that research has found low resilience levels to be associated with poor self-control, lack of focus, an inability to manage the demands of school and work life and a greater likelihood of engaging in risky and unhealthy behaviors.

The ability to navigate through significant stress and trauma once was thought to be a rare trait, but researchers now recognize that the capacity referred to as "ordinary magic" by University of Minnesota researcher Ann Masten, PhD, resides within most of us. "Certainly, there are levels of adversity that are so substantial that resilience skills aren't going to be enough, and we need to provide additional levels of support and care," Dr. Lester says. "But we also understand that in less overwhelming situations, most people, families and communities are capable of extraordinary resilience."

Scholarship coming out of disparate fields — from neuroscience and psychiatry to epidemiology and public health — has led to a better grasp of the constellation of factors that contribute to that capacity, Dr. Lester adds. The foundation, not surprisingly, comes from loving, stable early bonds with parents or, in their absence, other family members or other caregivers. As children move into adolescence and early adulthood, meaningful relationships with other adult mentors such as teachers and coaches also can contribute to the development of resilience.

Positive early relationships help to foster a key resilience characteristic: the capacity for emotional and behavioral regulation. As Dr. Lester describes it: "Can you manage intense emotions such as anxiety, stress and anger, and if you do have a spike in an emotional response, are you able to use positive coping skills to bring that reaction back down so that you can engage in effective communication and problem solving?"

Some emotional dysregulation is typical, particularly in childhood but even for adults, Dr. Lester notes; the question is how the individual manages that dysregulation. Other factors found to contribute to resilience include spirituality and religion; the ability to make meaning out of an experience, even when it's negative; and the ability to communicate effectively and seek out support when needed.

It is important to note that all of these traits can be taught and developed. "Research has consistently shown that resilience isn't a trait that some people are born with," Dr. Lester says. "Resilience reflects a set of dynamic processes that begin in the context of family structures and can be supported by schools, communities and health care systems."

IDEALLY, EFFORTS TO FOSTER RESILIENCE SKILLS should start in early childhood — building family bonds and ensuring that parents and other caregivers are equipped to impart critical tools. "In very young children, adversity can affect how the brain develops," says Blair Paley, PhD, a clinical psychologist who directs the Nathanson Center's Strategies for Enhancing Early Developmental Success (SEEDS) program, which she and colleagues codeveloped. "The earlier we can support children and their families in overcoming adversity, the better the long-term outcomes for children."

SEEDS is a trauma-informed, family-centered school-readiness intervention initially developed through a grant from the U.S. Department of Education for preschool-age children with early adversities and developmental challenges, including prenatal exposure to alcohol and other substances, a history of trauma and/or loss and disruption in the parent-child relationship. The program works with the young children and their parents or caregivers to build skills shown to promote resilience, including problem solving, persistence and flexibility when encountering obstacles.

School readiness programs have traditionally focused on early academic skills, but SEEDS is especially concerned with building skills in self-regulation — the ability to manage behaviors, feelings and thinking processes. "We know this is critical, not only for success in school, but also to be able to thrive throughout life," Dr. Paley says. "Skills that help children get past frustrations and overcome obstacles are the same ones that will help them in their jobs, in their family life, in their relationship with a partner and in their parenting."

A pilot study found that parents of children who participated in SEEDS reported greater decreases in negativity and improvements in self-regulation compared with children who had not yet gone through the program. SEEDS parents also reported reduced stress in interactions with their children. The study even found improvements in the child participants' early literacy skills, despite that not being an emphasis — consistent with previous research indicating that school-based interventions focusing on self-regulation also can improve academic performance.

For Dr. Paley, one of the most significant lessons from the pilot study is the need to work not just with the children, but also with the adults in their lives. With her SEEDS colleagues, she has developed a shorter module for early-childhood professionals in the community. SEEDS has recently partnered with the Emergency Child Care Bridge Program for Foster Children, a program administered by the California Department of Social Services and the Child Care Resource & Referral Network to enhance trauma- and resilience-informed practices in child care settings in Los Angeles County.

Adolescence is another key developmental period. Numerous studies have shown that a strong relationship with an adult figure is among the most important determinants of positive outcomes for at-risk adolescents. Project STRIVE (Support to Reunite, Involve, and Value Each Other) was developed at UCLA in 2004 to reconnect homeless and runaway youth with a positive, caring adult. The program currently is being adapted for adolescents who are re-entering communities from the juvenile justice system.

The adolescents originally targeted by Project STRIVE face a litany of risks, notes psychologist

Above: Dr. Blair Paley: "In very young children, adversity can affect how the brain develops. The earlier we can support children and their families in overcoming adversity, the better the long-term outcomes for children."
Opposite Page: Dr. Patricia Lester: "Everyone faces stressors and challenges. The ability to navigate those challenges and stay on course is a critical skill."

Photos: Jessica Pons

Left: Dr. Norweeta Milburn: "We're trying to give both the young person and the adult the tools to rebuild their relationships."
Right: Dr. Peter C. Whybrow: "We have built an enormous technological reserve, but that doesn't change the fact that human beings have a long period of development, and unless that is thought through carefully, many of our children are not going to grow up resilient."

Photos: Jessica Pons

Norweeta Milburn, PhD, who heads the Nathanson Center-based program. Many leave home because of unresolved family strife, conflicts around sexual identity and problems with peer relationships. "The longer these youth are not stably housed, the greater their risk for mental health problems, substance use, risky sexual behavior, victimization and exploitation and becoming chronically homeless adults," Dr. Milburn says. "Building resilience is a way to either prevent these problems from occurring or lessen their long-term impact."

Project STRIVE was developed as a five-session intervention to address family conflict and promote positive interactions between the adolescent and adult (most often a family member), while the adolescent is still in a shelter and/or being served by a community agency, as well as during the transition back home. The program facilitator models appropriate behaviors and teaches strategies for identifying and resolving conflicts. Participants learn emotional regulation skills through a "feeling thermometer" — red means emotions are elevated, green is for calm. "The idea is that you don't want to problem-solve when you're in the red zone," Dr. Milburn says. "You want to calm down before having some of those difficult conversations." As part of rebuilding the relationship, Project STRIVE also uses a behavioral economy approach, with adult and adolescent participants handing out tokens to affirm positive interactions.

"We're trying to give both the young person and the adult the tools to rebuild their relationships," Dr. Milburn says. The results of a randomized controlled trial found that the intervention was successful in improving mental health outcomes and reducing substance use and HIV risk behaviors. In addition to adapting the program for youth reentering communities from the juvenile justice system, Dr. Milburn and her colleagues are in the process of scaling up Project STRIVE and embedding it in systems most likely to encounter at-risk youth, training providers in delivering the intervention.

Evidence that resilience is modifiable and dynamic isn't lost on Natalia Ramos, MD (RES '15, FEL '17), MPH, assistant clinical professor of psychiatry and biobehavioral sciences and a child, adolescent and adult psychiatrist. As part of the Semel Institute's Stress, Trauma, and Resilience (STAR) Clinic, Dr. Ramos founded the UCLA EMPWR Program to promote well-being and resilience in LGBTQ children, teens and young adults. EMPWR delivers individual, group and family interventions; collaborates with community groups; and offers clinical training for mental health professionals.

Dr. Ramos has developed resilience classes for LGBTQ adolescents, with funding from the American Academy of Child and Adolescent Psychiatry, and is studying the impact of the intervention on depression

and anxiety. Grounded in evidence from the field of cognitive behavioral therapy, the class curriculum is designed to be easily delivered by nonprofessionals in community-based settings.

In the group, teens learn practical strategies to manage stress, such as relaxation techniques, assertive communication and ways to identify support and build social networks. In addition to internal coping methods, participants are advised on connecting with external resources, such as community groups and mentors that can help them, particularly in the absence of family support. "We can't predict what adversity these adolescents will face throughout their lives, but we can assume that there will be some degree of discrimination, stigma, shame, micro-aggressions and family rejection," says Dr. Ramos, who is in the process of analyzing the results of her pilot study. "The idea is to provide a toolbox they can carry with them, so that they can apply concrete strategies to get through the inevitable hard times — whether it's drawing, reaching out to a friend or listening to a favorite song."

Aside from the concrete coping skills, the group has shown Dr. Ramos the power of peer support. "At first the teens complained to their parents about having to come, but after a couple of classes, they didn't want to leave and were exchanging phone numbers," she says. "Having a community space for a teen who has felt alienated or isolated can be extremely powerful."

AT THE NATHANSON CENTER, DR. LESTER AND HER COLLEAGUES are looking to go beyond the individually targeted programs to focus on building systems. "Through a multi-level, multi-system approach that involves not just families, but also schools, health systems and other institutions, the ultimate goal is to have an entire community take on a common language and methods for developing these resilience capacities," Dr. Lester says. Toward that end, Dr. Lester's team is leading the recently funded UCLA-DMH Prevention Training Center of Excellence, which aims to build a trauma/resilience-informed system in Los Angeles County through sustainable workforce development, training, coaching and consultation for county providers.

One of the reasons there is such a dire need for FOCUS and its Nathanson Center offshoots is that the level of trauma and stress is so high in modern U.S. society, says Peter C. Whybrow, MD, executive chair of UCLA's Department of Psychiatry and Biobehavioral Sciences and director of the Semel Institute. In his 2015 book *The Well-Tuned Brain: Neuroscience & The Life Well Lived* (W.W. Norton & Company), Dr. Whybrow makes the case that for all of the remarkable technological and material advances in recent decades, humans are at their core social beings — and by failing to maintain a strong social infrastructure, modern U.S. society is producing a less-resilient population.

"We have built an enormous technological reserve, but that doesn't change the fact that human beings have a long period of development, and unless that is thought through carefully, many of our children are not going to grow up resilient," Dr. Whybrow says. "We must ask ourselves why, despite being such a wealthy country, our social indicators are so poor. The answer may be that we don't pay enough attention to the fundamental human interactions that build resilience or to the social institutions that would contribute to building more resilient children and young adults."

AFTER HER EXPERIENCE WITH FOCUS, Melissa Comeau decided to make some changes, foremost among them leaving her career as an accountant to devote her time to assisting families going through the hardships she and her husband had endured. Today, she is director of the Military and Veteran Caregiver Network, a program of the American Red Cross that trains spouses, parents, children and other loved ones of service members or veterans to provide peer support or serve as peer mentors or peer-group facilitators. She was appointed to the Federal Advisory Committee for Veteran's Family, Caregivers and Survivors of the U.S. Department of Veterans Affairs, and she published a book, *Sleeping with the War* (War Writers' Campaign), in 2014. Her husband Stephen Comeau was medically retired in 2013 and is involved with the Wounded Warrior Project Independence Program. The couple now live outside of Houston, Texas, where "we've just been trying to build our best life, one day at a time," Melissa Comeau says.

"For me," she adds, "resilience is knowing that I won't always be in a state of adversity, but that when I do face tough times, I have the skills and tools within me to move forward. That awareness is itself empowering."

Dan Gordon *is a regular contributor to* U *Magazine.*

"The longer these youth are not stably housed, the greater their risk for mental health problems, substance use, risky sexual behavior, victimization and exploitation and becoming chronically homeless adults."

Healing Is the Goal

By Nancy Sokoler Steiner

Before turning to medicine, Dr. Veronica Sullins pursued a career in professional soccer. She attended Stanford on a full soccer scholarship and played on women's national and pro teams.

Photo: Ann Johansson

Before pediatric surgeon Veronica (Ronnie) Sullins, MD (RES '16), began her career in medicine, she had one on the playing field as a professional soccer player.

Medicine was, in fact, hardly on her radar when she was an undergrad at Stanford University, which she attended on a full soccer scholarship. She was a biology major, and her advisors suggested that she take a few extra classes to satisfy pre-med requirements — just in case.

"I scoffed at the idea," Dr. Sullins says. But she took the classes anyways.

Soccer always was in her blood. As children growing up in Los Altos, California, she and her twin sister Lorrie idolized their older brother Greg. "We got into most sports because he did," she says. Ronnie and Lorrie Fair began playing AYSO soccer when they were 4 years old, and they started playing club soccer in the seventh grade. Their team won the state and regional titles for the under-14 age group and went on to win the national championship.

The sisters also were part of the Olympic Development Program, a feeder system for the United States National Team. In 1992, Lorrie made the regional team, comprised of 14 western states; Ronnie didn't. "I was moping — but deep down I knew that Lorrie spent more hours with a soccer ball than I did," she says.

Still, she kept practicing and playing and went on to earn a scholarship to attend Stanford and play for the Cardinal, then earned spots on the U.S. under-21 women's national soccer team and the U.S. Women's National Soccer Team. In 1997, she was called in to play in a game against England in which Lorrie also was playing; it was the first time that two sisters played together for the women's national team.

She graduated from Stanford in 2000 and was drafted by the New York Power for the inaugural season of the Women's United Soccer Association (WUSA). After two seasons — during which she started in every game, 42 total — she went to the San Diego Spirit. That lasted another year, until the WUSA suspended operations due to financial deficits.

What to do? She had completed her pre-med requirements and so decided to take an MCAT class. "I was one foot in, one foot out," she says. "I thought, 'If I don't do well on this exam, I won't apply.'"

But soccer had taught her how to win, and she did well and applied to medical school. When she did her clinical rotation in surgery, Dr. Sullins knew that she had found her new calling.

"I loved it," she says. "I loved the immediacy of repairing something and making someone better."

Dr. Sullins considered becoming a trauma or orthopaedic surgeon — she had two surgeries on her ankle when she was 14, and she was impressed by the surgeon who treated her — but opted instead for

pediatric surgery. "Children are so resilient and so innocent," she says. "Most of the time, parents don't know what to do, and they are thinking, 'Why my child? Why not me?' It's very emotionally gripping."

As the mother of two boys, she understands the feeling on more than just an intellectual level. When her firstborn was 6 weeks old, he required laparoscopic surgery to correct an obstruction of the stomach. "I was a total wreck," Dr. Sullins says. "I tell families, 'It doesn't matter how big or how small the procedure, it's still a surgery.'"

She appreciates the variety that comes with her role. "While general surgery in adults has been whittled away by all the subspecialists, pediatric surgery is one of the last bastions of true general surgery. We are dealing with everything from head to toe — other than orthopaedic and intracranial surgery. We really operate everywhere."

Dr. Sullins sees several parallels between her roles as a pediatric surgeon and as a former professional soccer player. For one, there's nothing like experience. "There's a technical aspect to the game that comes from hours of working with a soccer ball," she says. "In surgery, also, it boils down to how many hours you have spent in the operating room. In soccer, there's no substitute for game-time experience. In surgery, simulation is important, but there's no substitute for the pressure to perform when it's really happening."

And as a surgeon, she also functions as part of a team — just as she did on the soccer field. To succeed, a player depends on the skills of her teammates, and she knows that her teammates depend on her skills. As a physician, Dr. Sullins looks to other specialists to assist her in her work, at the same time knowing that they rely on her expertise in pediatric surgery.

Dr. Sullins no longer plays soccer; injuries while playing semi-professionally during medical school put an end to that. But she still enjoys competition and plays beach volleyball. And she loves to watch her sons play soccer. "I don't want to be a tiger mom," she says. "I'm happy to be a cheerleader for whatever sport they want to play."

And if that sport is soccer? "I'll think about if I might want to coach them," she says.

It's still in her blood.

Nancy Sokoler Steiner *is a freelance writer in Los Angeles.*

Dr. Veronica Sullins — then known as Ronnie Fair (left) of the New York Power — moves past Mandy Clemens of the Philadelphia Charge during a Women's United Soccer Association game in June 2001. Dr. Sullins's team won, 2-1.

Photo: Rick Stewart/ALLSPORT

Awards & Honors

Dr. Ronald W. Busuttil (RES '77), Distinguished Professor and Executive Chairman of the UCLA Department of Surgery and William P. Longmire, Jr. Chair in Surgery, received the Fr. Pat Traynor Award from St. James Inn, which provides lodging to families whose loved ones are being cared for at UCLA and other area hospitals.

Dr. Willy Hugo, adjunct assistant professor of dermatology, received the Daneen & Charles Stiefel Investigative Scientist Award for Melanoma Research by the American Skin Association.

Dr. Linda M. Liau (RES '97, FEL '98, PhD '99), chair of the Department of Neurosurgery, received the Abhijit Guha Award for her work on treating brain tumors.

Dr. Folasade P. May (FEL '15), assistant professor-in-residence of medicine and director of quality improvement in gastroenterology for UCLA Health, was selected as a 2019-2020 scholar by the American Gastroenterological Association for its new program to help promote diversity in the field of gastroenterology.

Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA, co-chaired a state advisory committee that has issued recommendations on how to improve the health of Californians through precision medicine.

Dr. Michael K. Ong, professor-in-residence of medicine, was reappointed to a two-year term on the California Tobacco Education and Research Oversight Committee.

Dr. Peipei Ping, professor of physiology, medicine and bioinformatics, is co-recipient of the 2018 Clinical and Translational Proteomics Award from the Human Proteome Organization.

Dr. Antoni Ribas (FEL '98, '01), professor of medicine, director of the tumor immunology program at UCLA Jonsson Comprehensive Cancer Center and member of the UCLA Broad Stem Cell Research Center, was named president-elect for the American Association for Cancer Research.

Dr. Dennis J. Slamon, director of the Revlon/UCLA Women's Cancer Research Program and of clinical and translational research at the UCLA Jonsson Comprehensive Cancer Center, is co-winner of the 2019 Sjöberg Prize by the Royal Swedish Academy of Sciences and Sweden's Sjöberg Foundation for his research leading to the development of successful targeted cancer therapies.

Johnese Spisso, president of UCLA Health, CEO of UCLA Hospital System and associate vice chancellor of UCLA Health Sciences, was honored by *Modern Healthcare* as one of 2019's Top 25 Women Leaders.

Dr. S. Lawrence Zipursky, Distinguished Professor of Biological Chemistry and a Howard Hughes Medical Institute investigator, received the 19th Perl-UNC Neuroscience Prize by the University of North Carolina School of Medicine for the discovery of cell-surface proteins that control circuit assembly in the visual system.

In Memoriam

Loretta Jones, associate director of the UCLA Clinical and Translational Science Institute, died November 22, 2018. She was 77 years old. Jones received The UCLA Medal, the university's highest honor, in 2017. She was a passionate health policy advocate, who, for four decades committed her life to eliminating racial and ethnic disparities in health care outcomes. She is best known for co-developing methods that gave underserved communities a greater role in planning and implementing academic research. She, with Kenneth Wells, MD, MPH, in the UCLA Department of Psychiatry and Biobehavioral Sciences, published the model in 2007 in *JAMA*. In doing so, she demonstrated a tenet of her model — that community members co-author research publications alongside academics. A foster child herself, Jones was foster mother to more than 20 children, including teen mothers with their babies and youth with mental disabilities. She was awarded two honorary doctorates, including one from Charles R. Drew University of Medicine and Science.

HOSTs Extend Help to Medical Students Interviewing for Residency

Class of 2019 students (from left) Michael Yang, Benjamin Lin, Jacqueline Ngo, Brandon Vu, Connie Chung and Amy Do-Nguyen after opening their Match Day letters.

Photos: Courtesy of UCLA Medical Alumni Association

Interviewing for residency is a stressful and often expensive experience. Students can spend thousands of dollars on travel and lodging. The newly initiated Helping Our Students Travel (HOST) program helps to alleviate some of the financial burden by matching randomly selected students with medical school alumni in Boston, New York and San Francisco – three pricey cities where many UCLA medical students interview for their residencies.

A 2015 study from the University of Vermont found that students apply to an average of 36 residency sites and interview with 12. Association of American Medical Colleges (AAMC) data report that, on average, students spend $3,900 on travel and lodging for their interviews. Costs are even higher in major cities; some students report spending nearly $8,000 during their interview process. In Boston and San Francisco, where UCLA students were

hosted during the 2018-2019 interview cycle, students could expect to pay around $400 per night for a hotel room. According to the AAMC, at least half of the 50 largest medical schools in the United States have a HOST program to offset these costs.

UCLA medical student Amy Do-Nguyen interviewed at eight residency sites. "It's important to try to save money during the process, because it is really expensive," she says. Do-Nguyen and her classmate Jason Chen both interviewed in Boston. "For my interview dates, the cheapest hotels were $450 a night," Chen says.

Albert Cha, PhD '99, MD '01, saw opening his home in San Francisco to students as a way of giving back to UCLA. "We have an extra guest room and are conveniently located to Stanford University, and we know how expensive hotels are in our area," Dr. Cha says.

Saving students money during the interview process was the initial factor that led students and hosts like Dr. Cha to participate in the program, but the benefits of being in a home and forming lasting connections are why future residents will encourage their friends to apply to the HOST program, and alumni will continue to open their homes to students.

Do-Nguyen stayed with Meghan Beattie, MD '12, in Boston. Dr. Beattie is completing her residency at the same hospital where Do-Nguyen interviewed. "It's nice to talk to people and meet people who work there and to see how they feel about the area," Do-Nguyen says. "My host was originally from California, like me, and it was nice to talk about how she adjusted to Boston."

Chen, who was hosted by Dr. Cha in San Francisco and Ethan Brovman, MD '13, in Boston, also enjoyed how relaxing his HOST experiences were. "It was a great being able to be in the area of my interview and have a nice setup, but it was even better to be able to talk with my hosts after my interviews," Chen says.

Dr. Cha also valued the conversations he and his family had with Chen. "We have three children, two of whom are in high school, and they were interested in hearing about his experience applying for college and why he chose to go to the school he did." Chen plans to keep in touch with his hosts.

All of the hosts who participated in the program this year said they are likely to host students again, and Chen and Do-Nguyen both would recommend participating in the HOST program to other students. "Having a comfortable home and hearing the experiences of people from a similar place is really valuable," Do-Nguyen says. Chen echoed the sentiment. "It was relaxing, and it was a privilege."

"Having our fourth-year students who are dispersed across the country and staying with alumni in their own homes is truly a hands-on approach to keeping our graduates informed on the current state of the medical school and helping our students save money on travel costs, while connecting one-on-one with alumni," says Alumni Affairs Director Dana Schmitz.

The goal for next year's interview cycle is to open up the HOST program to all students in the Class of 2020 applying to residency in Boston, New York and San Francisco.

"Having our fourth-year students who are dispersed across the country and staying with alumni in their own homes is truly a hands-on approach to keeping our graduates informed on the current state of the medical school and helping our students save money on travel costs, while connecting one-on-one with alumni."

HOST Program pilot student Amy Do-Nguyen (left) with classmate Connie Chung.

UCLA Celebrates the Philanthropy of Laurie and Steven Gordon




Top Left: (From left) Laurie Gordon, Judy and Bernard (seated) Briskin and May and Richard Ziman. **Top Right:** (From left): Johnese Spisso, Dr. Kelsey C. Martin, Chancellor Gene D. Block, Steven and Laurie Gordon and Dr. John C. Mazziotta. **Middle Left:** (From left) Taylor Walpert, Stacey Gordon, Saree Solanki, Steven Gordon, Florence Gordon, Laurie Gordon and Charlie Gray. **Middle Right:** (From left) Meyer Luskin, Steven Gordon and Ralph Shapiro. **Bottom Left:** (From left) Shari and Garen Staglin. **Bottom Right:** (From left) Henry Gluck, Tracey Gluck, Arline Gluck and Candy Spelling.

Photos: Jessie Cowan

On March 18, 2019, longtime UCLA friends **Laurie and Steven Gordon** were honored for their $25 million commitment to fight Parkinson's disease. Held at the newly named UCLA Laurie and Steven C. Gordon Neuroscience Research Building, the celebratory event was attended by family, friends, loyal UCLA supporters and UCLA campus leadership — including UCLA Chancellor Gene D. Block; Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health; Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair; and Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences.

"The Gordons are influential advocates for families affected by Parkinson's disease, and we are grateful for their dedication to improving the lives and health of people suffering from the disease," Dr. Mazziotta said.

This gift complements previous giving by the Gordons to support Parkinson's research at UCLA. "I have seen Parkinson's strike people I love and many more. This is a cause I am passionate about and proud to champion," Steven Gordon said.

The contribution created the UCLA Laurie and Steven Gordon Commitment to Cure Parkinson's Disease, which will accelerate research into the disorder that affects more than 10 million people around the world and fund essential imaging equipment. It also will establish five endowed chairs in fields related to Parkinson's, bringing the couple's total to six endowed chairs in this area.

The Gordons hope other philanthropists will join them in their quest to improve the understanding of Parkinson's and develop new treatments. "One of the most fulfilling aspects of our philanthropy is its ability to inspire hope in families who have been affected by diseases of the brain," Laurie Gordon said.

The Gordons are steadfast supporters of programs across the UCLA campus, including depression and neuroscience training and research.

For more information, contact Karen Colimore at:
310-267-0496

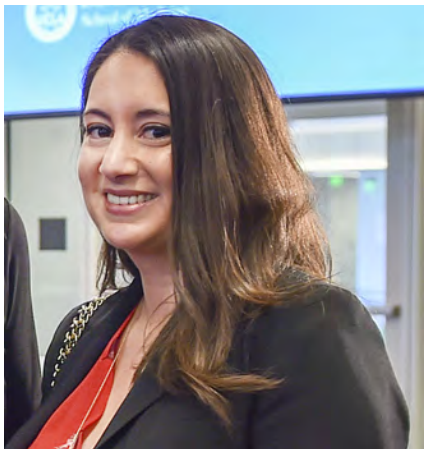
A Fitting Tribute: The Garry Shandling Learning Studio

Friends and family of the late entertainer Garry Shandling gathered on February 4, 2019, for the dedication of the **Garry Shandling Learning Studio** in Geffen Hall. Joined by UCLA faculty and medical students, they celebrated the life and legacy of Shandling, who died in March 2016, as a man who will be remembered not only for his brilliant career, but also for his generosity and kindness. UCLA received a bequest of $15.2 million from Shandling's estate, which will advance work in the UCLA Division of Endocrinology, Diabetes and Hypertension; the Division of Infectious Diseases; and the UCLA Agi Hirshberg Center for Pancreatic Diseases. It also will help accelerate research at the David Geffen School of Medicine at UCLA.

Judd Apatow, director and producer of the 2018 HBO documentary *The Zen Diaries of Garry Shandling*, served as event emcee. Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health, and Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair, spoke about the impact of Shandling's gift on the future of science and medicine and the importance of the 6,400-square-foot learning studio that now bears his name. "That a man with such a gift for comedy, for touching people's lives and for making us laugh by telling us the truth would pay tribute to us in this way is deeply meaningful to us," Dr. Martin said.

Comedians Suliman McCullough, Kevin Nealon and Sarah Silverman also delivered heartfelt remarks framed by signature humor, and spoke about Shandling's role as a leader, mentor and friend. Family member Michael Shandling spoke about his cousin's compassion and caring philanthropy. A reception followed the dedication ceremony.

For more information, contact Gretchen McGarry at:
310-794-4746



Top Left: Dr. John C. Mazziotta (left) and Judd Apatow. **Top Right:** (From left) Comedians Kevin Nealon, Sarah Silverman and Suliman McCullough. **Bottom Left:** Michael Shandling. **Bottom Center:** Sophia McCrocklin (left) and Shandling trustee Bill Isaacson. **Bottom Right:** Shandling trustee Stacey Davy.

Photos: Jessie Cowan

Project to Improve the End-of-Life Experience Marks Its First Anniversary

To commemorate the first anniversary of the **3 Wishes Project,** a reception was held on March 20, 2019, at the **UCLA Meyer and Renee Luskin Conference Center** for families served by the program and the donors and staff who made it possible. The program, launched in December 2017, fulfills wishes for patients who are in their final days or hours of life. The 3 Wishes Project has served more than 150 patients and has transformed the dying process into an opportunity to honor a patient's wishes and autonomy, celebrate their life and create positive memories for families during final moments.

Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences, gave the opening remarks and expressed her hope that the program will expand systemwide. She also recognized Ronald Katz, Jodi and Greg Perlman, Anne and Arnold Porath, Pamela and Robert Krupka and Vitas Healthcare for their philanthropy and continued support of the 3 Wishes Project. Co-founders Dr. Thanh Neville (MD '05, RES '08, FEL '11) and Dr. Peter Phung reflected on how the program epitomizes patient-centered care and reminds them of why they chose their profession. "Being able to do nice things for patients and their families when medicine has reached its limits — this is a true privilege," Dr. Neville said. Anita Amos, whose mother died in the Medical Intensive Care Unit (MICU) at Ronald Reagan UCLA Medical Center last year, shared how the program gave her mother a peaceful, dignified death. Families of prior 3 Wishes patients remembered their loved ones by sharing memories on heart-shaped notecards, which will be memorialized as part of a Memory Tree in the MICU.

For more information, contact Lauren Davis at:
310-267-1844

Top Left: (From left) 3 Wishes Project donors and leadership Ronald Katz, Johnese Spisso and Madelyn Gordon. **Bottom Left:** (From left) Dr. Peter Phung, patient family member Anita Amos and Dr. Thanh Neville. **Right:** The 3 Wishes Memory Tree.

Photos: Jessie Cowan

UCLA Center for East-West Medicine Celebrates 25 Years

Top Left: (From left) Dr. Ka-Kat Hui with longtime CEWM supporters Gail Oppenheimer, Gerald Oppenheimer and Shirley Hui in 2005. **Top Right:** (From left) CEWM cofounders Wing N. Pang and Elaine C. Pang and Dr. Hui. **Bottom Left:** Beryl Weiner (left) and Dr. Hui. **Bottom Center:** Joan Prestine (left) and Dr. Hui. **Bottom Right:** Robert Teselle (left) and Joyce Abbott.

Photos: Max Lin and Courtesy of CEWM

On December 15, 2018, alumni, friends and faculty gathered at the UCLA Meyer and Renee Luskin Conference Center to celebrate the 25th anniversary of the UCLA Center for East-West Medicine (CEWM). The event highlighted the center's history by honoring the 40-plus years of CEWM founder and director Dr. Ka-Kit Hui (MD '75, RES '78), Wallis Annenberg Endowed Chair in Integrative East-West Medicine, as a UCLA physician. Distinguished guests, supporters, leadership and team members who played diverse and pivotal roles in the center's success were recognized, and milestones were highlighted.

Dr. Hui presented the history of the CEWM and thanked UCLA leadership who mentored him and supported his efforts to launch the center in 1993. "My dream during medical school was to create a new medical model by blending the best of both modern Western medicine and traditional Chinese medicine to make health care more effective, safer, affordable and accessible to all," Dr. Hui said. "I am greatly indebted to many of my patients, who have entrusted their lives to me and helped teach not only me, but also our trainees, and to those who provided philanthropic support."

Other UCLA CEWM team members spoke about their programs, including Drs. Edward Hui, director of the CEWM Santa Monica Clinic; Andrew Shubov, of the CEWM Inpatient Hospitalist Program; Lawrence Taw, director of the CEWM Torrance and Palos Verdes clinics; and Annie Zhang, who spoke on behalf of Dr. Malcolm Taw, director of the CEWM Westlake Village clinic.

Honored for their philanthropy and continued support were Wing N. Pang and Elaine C. Pang, CEWM co-founders; Beryl Weiner; Cathleen Mitchell; and Joyce S. Abbott. Dr. Ming-Dong Li, CEWM clinician and director of Chinese Medicine Education, was recognized for 15 years of distinguished leadership. Other honorees who have supported the center but who were unable to attend included Gail and Gerald Oppenheimer, Peggy and Andrew Cherng and Louise Sylvia Danelian. Testimonials also were shared by those who have benefited from the center's work through the years.

Since its inception, the CEWM has been at the forefront of what has become a global movement toward the development of a patient- and society-centered model that emphasizes preventive health care. In the next decade, the CEWM aims to continue improving access to its health care model within UCLA and through collaborations with international nonprofit organizations.

For more information, Ellen Haddigan-Durgun at:
310-206-3878

Philanthropy Advances Stroke Care and Honors Dr. Wally Ghurabi






Top Left: (From left) Drs. John C. Mazziotta, Raffi Ghurabi and Wally Ghurabi, Hilda Ghurabi and Dr. May Nour. **Top Right:** (From left) Charles W. Smith, Renee Luskin, Meyer Luskin, Dr. Steve Maron, Hilda Ghurabi, Dr. Ghurabi, Jennifer Diener and Dr. Marshall A. Rockwell, Jr. **Middle Left:** (From left) Ahmed Yehia, Charles W. Smith, Dr. Mazziotta, Donald Goodman, Dr. Ghurabi, Kathy Volz, Becky Mancuso-Winding and Jennifer Diener. **Middle Right:** Dr. Ghurabi (second from right) with members of the Santa Monica Fire Department, (from left) Chief Bill Walker and Captains Dan Caldwell and Julian Zermano. **Bottom Left:** (From left) Dr. Jeffrey L. Saver, Henry Gluck and Drs. Nour and Rockwell (seated). **Bottom Right:** View of the Ghurabi Meditation Garden.

Photos: Jessie Cowan

A group of friends, family members, colleagues and philanthropists attended a reception on November 28, 2018, honoring **Dr. Wally Ghurabi,** medical director of the Nethercutt Emergency Center at UCLA Medical Center, Santa Monica and co-medical director of the hospital's Primary Stroke Center. Held in the Ghurabi Meditation Garden at UCLA Medical Center, Santa Monica, the event celebrated the opening of the garden and the funds raised to support the UCLA Arline and Henry Gluck Stroke Rescue Program and the UCLA Health Mobile Stroke Unit (MSU).

Drs. Ghurabi, John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health, and May Nour (RES '13, FEL '14, '15), medical director of the UCLA Arline and Henry Gluck Stroke Rescue Program, delivered remarks, followed by a ribbon-cutting to officially open the meditation garden. The garden offers patients and staff a peaceful place of retreat. Attendees had the opportunity to tour the MSU, a partnership with the Henry and Arline Gluck Foundation, the Santa Monica Fire Department, Los Angeles County Emergency Medical Services and the Los Angeles County Board of Supervisors. The first of its kind in California, the MSU is a specialized ambulance that is operated by highly trained personnel and is equipped with a CT scanner to provide the expedited delivery of brain-saving medications to stroke patients.

"Rapid response for stroke victims is essential to emergency care and leads to better outcomes for patients," said Dr. Ghurabi, who was instrumental in the launch of the MSU. "UCLA Health is at the forefront of bringing the UCLA Health Mobile Stroke Unit to Santa Monica and other Los Angeles communities. I am thrilled to be part of this lifesaving initiative. I am very grateful to the many friends and colleagues who have contributed to the Gluck Stroke Rescue Program in my honor. I will really enjoy spending time in the Ghurabi Meditation Garden with them." Dr. Ghurabi also serves as the medical director of the Santa Monica Fire and Police Departments, where he trains paramedics and other first responders on various aspects of emergency medicine.

For more information, contact Ellen Haddigan-Durgun at:
310-206-3878

Grey Matters Event Sheds Light on Memories

On November 29, 2018, UCLA physicians and neuroscientists shared their research on memory at **Grey Matters: The Lifetime of a Memory,** an event held at the Dr. S. Jerome and Judith D. Tamkin Auditorium in Ronald Reagan UCLA Medical Center. Grey Matters was presented by the UCLA Neuroscience Research Theme, a priority of the David Geffen School of Medicine at UCLA, comprising scientists and physicians from across the UCLA campus who collaborate to accelerate discoveries about the nature of the brain and brain-related diseases and disorders.

Dr. Larry Zipursky, Jerome J. Belzer Chair for Medical Research and chair of the UCLA Neuroscience Research Theme, welcomed the attendees and made opening remarks. Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair, served as the moderator of a panel discussion with three UCLA scientists who study memory from unique perspectives: Dr. Susan Bookheimer, Joaquin M. Fuster Chair in Cognitive Neuroscience, who uses brain imaging to study memory; Dr. Mayank Mehta, professor of physics and astronomy, who studies the electrical signals that neurons use to communicate with each other; and Dr. Alcino Silva, Distinguished Professor in the Departments of Neurobiology, Psychiatry and Biobehavioral Sciences and Psychology, and director of the UCLA Integrative Center for Learning and Memory, who studies the relationship between genes and memory.

Topics included how each panelist became interested in brain and memory research, where memory is located in the brain and if it can be measured, the techniques used in the panelists' labs to study memory, the study of genes in scientific models and in humans and what science can teach about a person's ability to improve how they learn and remember. A question-and-answer period followed the panel discussion. The program concluded with Dr. Elaine Hsiao, assistant professor of integrative biology and physiology, speaking about the UCLA Neuroscience Scholars program, an undergraduate summer program that trains aspiring neuroscientists.

Faculty members, program directors and department chairs were on hand at "Meet the Experts" stations during the reception that followed to field questions on memory and the teenage brain, memory and sleep, and memory and post-traumatic stress disorder.

For more information, contact Karen Colimore at:
310-267-0496

Top: (From left) Dr. Larry Zipursky, Steven Gordon and Laurie Gordon. **Middle:** (From left) Ralph Shapiro, Dr. Kelsey C. Martin and Carol Block. **Bottom:** (From left) Drs. Mayank Mehta, Susan Bookheimer and Alcino Silva.

Photos: Jessie Cowan

Left: (From left) Dr. Kelsey C. Martin and Dr. Michael Grunstein. **Right:** (From left) UCLA Chancellor Gene D. Block, Jane Semel and Meyer and Renee Luskin.

Photo: Jessie Cowan

UCLA Celebrates Lasker Award-recipient Dr. Michael Grunstein

On February 7, 2019, family, friends and faculty gathered at the Waldorf Astoria Beverly Hills to celebrate **Dr. Michael Grunstein** as recipient of the **2018 Albert Lasker Basic Medical Research Award.** Dr. Grunstein, Distinguished Professor Emeritus of Biological Chemistry in the David Geffen School of Medicine at UCLA, received the honor for his groundbreaking research on gene expression. He shares the award with Dr. C. David Allis of The Rockefeller University in New York.

"As dean of the David Geffen School of Medicine and a colleague of Michael's for the past 20 years, it is both a personal and professional honor for me to see his scientific creativity and unwavering pursuit of new biological insights recognized by the Lasker committee," said Dr. Kelsey C. Martin, dean and Gerald S. Levey, M.D., Endowed Chair. "His pioneering work fundamentally changed our understanding of one of the most basic aspects of biology — the regulation of which genes are turned on and off in each cell — and opened the door for new therapeutic approaches to disease."

The Lasker Awards are widely regarded as America's top biomedical research prize.

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

(Front row, from left) Azita Fatheree, board president of the Epilepsy Foundation of Greater Los Angeles; Dr. Kelsey C. Martin; Mark Borman, co-chair of the Epilepsy Foundation Care and Cure Gala; and Dr. Shaun Hussain, associate professor of pediatrics and Elsie and Isaac Fogelman Endowed Term Chair in Pediatric Neurology. (Second row, from left) Rebekkah Halliwell, executive director of the Epilepsy Foundation of Greater Los Angeles; Dr. Danilo Bernardo, fellow in pediatric neurology; Drs. Devaskar and Sankar; Dr. Hiroki Nariai (FEL '17, FEL '18), assistant professor of pediatric neurology; Don Nose, director of the Care and Cure Institute of the Epilepsy Foundation; and Raquel Gallegos, management services officer in the Division of Pediatric Neurology. (Back row, from left): Dr. Rajsekar Rajaraman (RES '15, FEL '16, FEL '17), assistant professor of pediatric neurology; Dr. Joyce Matsumoto (RES '06), director of the Pediatric EEG Lab at Ronald Reagan UCLA Medical Center and UCLA Medical Center, Santa Monica; Dr. Lekha Rao (RES '08, RES '11, FEL '12), assistant clinical professor of pediatric neurology; and nurse Oonagh Sankar, coordinator for the UCLA Liver Transplant Program.

Photo: Don Ponturo

Epilepsy Foundation Endows Fellowship Program in UCLA Pediatrics

On January 10, 2019, Epilepsy Foundation of Greater Los Angeles leadership and board members, along with UCLA faculty members and staff, gathered to celebrate the establishment of the **UCLA Care + Cure Pediatric Epilepsy Fellowship Program** and the **Care + Cure Pediatric Epilepsy Endowed Fellowship.** Care + Cure Fellows will undergo both clinical and research training in the specialized field of pediatric neurology and epileptology, which is a growing area for neurologists specializing in epilepsy.

"By funding the specialty training of new pediatric doctors and neurologists at UCLA, the Care + Cure Pediatric Epilepsy Fellowship will help patients and their families, getting us one step closer to helping end epilepsy," said Dr. Raman Sankar (RES '89, FEL '91), chief of the UCLA Division of Pediatric Neurology and professor of neurology and pediatrics.

The evening was hosted by Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair; Dr. Sherin U. Devaskar, chair of the UCLA Department of Pediatrics and Mattel Executive Endowed Chair in Pediatrics; and Dr. Sankar.

For more information, contact Molly Moursi at: 310-267-1826

TEDxUCLA Salon Tackles Depression

For the second year, the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA Board of Advisors hosted its annual **Community Conversations** as a TEDxUCLA salon. The event was held January 8, 2019, at the Dr. S. Jerome and Judith D. Tamkin Auditorium in Ronald Reagan UCLA Medical Center. Community Conversations, founded by the board, is an educational series that provides a forum for experts to share information on important mental health topics. The well-known nonprofit TED is devoted to spreading ideas, usually in the form of short, powerful talks with a goal of reaching and enlightening the global community. The TEDxUCLA Salon: Tackling Depression brought together nearly 200 attendees for presentations on depression, ranging from finding answers through genetics, treating depression in underrepresented communities, making a difference in the face of tragedy and defining resilience, all with the goal of ending the stigma surrounding depression, which is the leading cause of disability worldwide, according to the World Health Organization.

UCLA faculty presenters from the Depression Grand Challenge included Drs. Nelson Freimer, Maggie G. Gilbert Endowed Chair in Bipolar Disorders; Jonathan Flint, Billy and Audrey Wilder Endowed Chair in Psychiatry and Neuroscience; Michelle Craske; and Jeanne Miranda. Laurie Gordon, Resnick Neuropsychiatric Hospital Advisory Board chair and member of the Depression Grand Challenge Leadership Council, shared her personal story about turning pain into purpose. Clara Nguyen, a UCLA student and a certified Screening and Treatment for Anxiety and Depression (STAND) Peer with the UCLA Depression Grand Challenge's Resilience Peer Network (RPN), also spoke. The RPN increases accessibility to mental health resources on campus and connects students with the necessary help.

(From left): Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair; Charlie Gray; Laurie Gordon; Steven Gordon; Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences; and Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health.

Photo: Don Liebig

For more information, contact Jillian Flannery at:
310-267-5573

UCLA Cardiovascular Theme Hosts Innovations in Heart and Lung Transplantation Event

(From left) Speakers Jack McDonnell and Sean Keoni Craig, Dione Hagemann and Ryan Sanico.

Photo: Ivy Reynolds

As part of the UCLA Cardiovascular Theme's Community Research Update series, leaders in cardiovascular surgery and research hosted an evening highlighting **"Innovations in Heart and Lung Transplantation"** on January 31, 2019. The event featured a reception with heart-healthy appetizers and refreshments, followed by an in-depth presentation from Dr. Abbas Ardehali (RES '95, '97), director of the UCLA Heart, Lung, and Heart-Lung Transplant Programs and William E. Connor Chair in Cardiothoracic Transplantation. As a national leader in lung transplant and heart transplant, UCLA is the busiest thoracic surgery center in the west. Dr. Ardehali showcased the innovative nature of the heart/lung transplantation programs and pioneering advances in transplant research, surgical technique, organ procurement and patient care. In outlining his vision for the future of organ transplantation, he emphasized an *ex-vivo* perfusion approach, which keeps organs in a "near normal" state and improves the quality of donor organs, significantly increasing their availability. Special guests and transplant patients John McDonnell and Sean Keoni Craig spoke about how heart and lung transplants at UCLA have affected their lives.

For more information, contact Laurel Zeno at:
310-825-1980

Lunch with the Scientists Celebrates Research Accomplishments

Top Left: (From left) Arthur E. Levine; Dr. Janet P. Pregler; and Lauren B. Leichtman, board member of the Iris Cantor-UCLA Women's Health Center. **Top Right:** (From left) Board members Mary Ann Cloyd, Jan Cloyde, Julia Gouw, Patricia Dunn Grey, Kristin Barens and Josie Tong. **Bottom:** (From left) Board members Eileen Goodis and Patricia Dunn Grey; Dr. Gail A. Greendale; Susan Burnett, chair of the Executive Advisory Board for the Iris Cantor-UCLA Women's Health Center; and center board member Mary Ann Cloyd.

Photos: Jessie Cowan

The **13th Iris Cantor-UCLA Women's Health Center and UCLA Clinical and Translational Science Institute Lunch with the Scientists** took place on February 19, 2019, at the Beverly Wilshire Hotel. The annual event covered the center's research accomplishments and its current projects.

Dr. Janet P. Pregler, director of the Iris Cantor-UCLA Women's Health Center, introduced the afternoon program and announced the appointment of Dr. Gail A. Greendale, research director of the Iris Cantor-UCLA Women's Health Center, as the inaugural holder of the Lauren B. Leichtman and Arthur E. Levine Endowed Chair in Women's Health Research. Dr. Greendale, along with Dr. Andrea Hevener, associate research director of the Iris Cantor-UCLA Women's Health Center, provided updates on the center's research achievements.

A panel discussion followed on the innovative studies currently underway in the center, such as harnessing stem cells to treat infertility after cancer treatment in women, investigating fatty liver disease and how the condition presents differently in women than in men, using complementary and integrative therapies for women veterans with chronic pain, and understanding how the brain affects the strength of bones and puberty.

For more information, contact Silviya Aleksiyenko at:
310-206-9235

UCLA Head and Neck Surgery Celebrates Calcaterra Family's Philanthropy and the Inaugural Calcaterra Chair Holder

Dr. Thomas Calcaterra, UCLA professor emeritus of head and neck surgery, and his wife Ellen Calcaterra, an alumna of the UCLA Anderson School of Management, have established the Thomas C. Calcaterra, M.D., Chair in Head and Neck Surgery in the David Geffen School of Medicine at UCLA. On April 9, 2019, UCLA friends, donors, faculty members and family gathered at the Four Seasons Hotel in Beverly Hills to celebrate the Calcaterra family's gift and the appointment of Dr. Maie St. John (RES '05) as inaugural holder of the Calcaterra Chair.

(From left): Dr. Thomas Calcaterra; Ellen Calcaterra; Drs. Maie St. John and Kelsey C. Martin, and Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences.

Photo: Jessie Cowan

Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair, spoke about the Calcaterras' generosity. "Tom and Ellen's connections to UCLA run deep, and they wanted to secure a strong future for UCLA Head and Neck Surgery," Dr. Martin said. "We could not be more pleased to have the chair named in Tom's honor, which will inspire its holder now, and for generations to come."

A renowned surgeon, scientist and educator, Dr. St. John is chair of the UCLA Department of Head and Neck Surgery. Her research focuses on how tumors progress and metastasize in head and neck cancers and the identification of genes and pathways for future targeted therapies. This important philanthropic commitment from Mrs. Calcaterra and Dr. Calcaterra, who, during his tenure at UCLA, trained more than 175 surgeons, will help support Dr. St. John's educational and research efforts.

For more information, contact Gretchen McGarry at:
310-794-4746

Gifts

In December 2018, the UCLA Division of Geriatrics received a $2 million pledge from siblings **Cameron Draine** and **Janet Odell,** honoring the legacy and memory of their parents Patricia and Robert Draine. Their gift establishes the Robert and Patricia Draine Endowed Chair in Geriatrics. The funds will be dedicated to support the director of the UCLA Alzheimer's and Dementia Care (ADC) Program, to improve program services and offerings and to provide for sustainable funding to meet the needs of the ADC Program's growing patient population. The ADC Program began in 2012 as a shared vision among Bob Draine, Dr. David Reuben, chief of the UCLA Division of Geriatrics and Archstone Foundation Endowed Chair in Geriatrics, and the division.

Longtime supporters of UCLA **Carol Doumani** and her husband **Roy,** who passed away in March, have pledged more than $5 million through their estate to establish the Doumani Research Innovation Fund at the UCLA Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research. The fund will provide UCLA faculty with the opportunity to accelerate the pace of discovery in cancer and stem cell biology and lay the foundation to translate these discoveries into clinical practice. Under the direction of the stem cell center director Dr. Owen Witte, resources from the Doumani Research Innovation Fund will enable UCLA scientists to pursue ideas that have the potential to advance the treatment and care of cancer patients.

The **John Douglas French Alzheimer's Foundation,** an organization dedicated to funding innovative Alzheimer's research, has made a contribution to establish an endowed chair in Alzheimer's disease research in the UCLA Department of Neurology. Dr. John D. French was a distinguished neurosurgeon and the first director of the UCLA Brain Research Institute. Endowing a chair creates continuity of funding, allowing an esteemed faculty member the freedom to pursue novel investigations.

Researchers from the David Geffen School of Medicine at UCLA and the UCLA School of Dentistry have been awarded $5 million over five years from the **National Cancer Institute** to develop liquid biopsy tools to improve early detection methods for lung cancer, the leading cause of cancer deaths in both men and women in the United States. The award, one of only six given in the nation, will enable principal investigators Drs. Denise Aberle (RES '85), Kostyantyn Krysan and David Wong to further the UCLA-developed technology known as electric field-induced release and measurement liquid biopsy, created in Dr. Wong's lab.

Greg and Jodi Perlman.

Photo: Jessie Cowan

The **Perlman Family Foundation** has contributed $700,000 to support the current and urgent needs of UCLA Health's vulnerable populations. The gift established the Perlman Angel Fund, a partnership between UCLA clinical units and the UCLA Health Department of Care Coordination and Clinical Social Work and is making gifts that help patients and their families overcome out of hospital financial hardships caused by their illnesses. The funding also will benefit the UCLA Health Partners for Care fund and the 3 Wishes Project. Under the direction of critical care nurse Mary Noli, the Partners for Care fund helps families in need during their time at the hospital. The 3 Wishes Project, led by Dr. Thanh Neville (MD '05, RES '08, FEL '11) and Dr. Peter Phung, improves the end-of-life experience by fulfilling specific wishes unique to each dying patient and their loved ones in the hope of bringing peace.

The Thalians presented the first payment on its second $1 million pledge to UCLA Operation Mend.

Photo: Greg Doherty

Founded by the late Debbie Reynolds, **The Thalians** has raised more than $35 million for mental health charities through the years. Since 2011, The Thalians' main focus has been the well-being of America's wounded warriors of UCLA Health Operation Mend, established to treat U.S. military men and women severely wounded during post-9/11 combat or training. In 2014, The Thalians made a pledge of $1 million to support mental health programs for UCLA Operation Mend patients and their families. In December 2018, The Thalians renewed its pledge to Operation Mend for another $1 million.

For more information, contact Health Sciences Development at:
310-206-6484

In Memoriam

Anne Bodenheimer.

Photo: Zorana Ercegovac, UCLA Faculty Women's Club

Anne Bodenheimer, UCLA friend and coordinator of the Fulbright Scholars Enrichment Program at UCLA, died on June 21, 2018. She was 104 years old. Bodenheimer was born in Frankfurt, Germany, in 1914. After completing a baccalaureate degree in Germany in 1933, she was sent to Paris by her father. There, she completed a juris doctorate at the École de Droit in 1937, and she worked at the Institute of Comparative Law in Paris until 1939. She lost family members and her fiancé in the Holocaust, and she escaped twice from Nazi concentration camps. Following the war, Bodenheimer emigrated to the United States, where she married Fred S. Bodenheimer. She joined the UCLA staff in 1961 and coordinated the Fulbright Scholars Enrichment Program at UCLA for 29 years, continuing to work part-time for the program after her official retirement in October 1984. Eye problems prompted her to seek care at the UCLA Stein Eye Institute, where, for several years, she supported the research of Dr. Kevin M. Miller (RES '91), Kolokotrones Chair in Ophthalmology, and Dr. Michael B. Gorin (RES '86, FEL '83), Harold and Pauline Price Chair in Ophthalmology. Bodenheimer is survived by her son and daughter-in-law Howard and Michelle Bodenheimer, a grandson and a niece and nephew.

Mosquitoes, Malaria and Me

By Claire Panosian Dunavan, MD

The author's parents Carolyn and Captain Ernest J. Panosian on their wedding day, June 17, 1944. Capt. Panosian contracted malaria while serving in the Pacific in World War II.

GUADALCANAL, NOVEMBER 1942. Another night of war in the Pacific. Above-ground, the air buzzed with insects and enemy ordinance. In foxholes, weary Americans in boots, fatigues and steel helmets shifted restlessly and counted the hours until dawn.

For a soldier on Guadalcanal, a hole in the ground was the safest place to spend the night. But that safety came with a price: disease-bearing mosquitoes. One need only visit the hospital field tent for proof. There, by the light of flickering electric lanterns, medics tended patients whose blood swarmed with the delicate rings, crescents and clusters of malaria.

Nearly half-a-million U.S. servicemen contracted malaria during World War II. My dad was one of them. A UCLA graduate and newly minted officer, he probably got infected soon after arriving in the Solomon Islands. Nonetheless, he remained on Guadalcanal for nine months, periodically suffering — despite multiple doses of quinine — the recurrent fevers, racking chills and drenching sweats of malaria. Finally, a superior officer said "enough." With no time to say goodbye to his company, or even to collect his gear, my father was given the last seat on a plane leaving Henderson Field. Roughly a year later, after hospitalizations in the New Hebrides; Auckland, New Zealand; and Oakland, California, he married my mother and began a new military job in Los Angeles.

I share this story to answer the question: How did I find my way to tropical medicine? Looking back, my father's wartime illness clearly played a role. Like my dad, my

mother (who graduated from UC Berkeley, then worked at the 4th Bomber Command in San Francisco) also lost friends and classmates in the Pacific theater. As a young girl growing up in the 1950s, I was keenly aware of the hazards that my father and other World War II combatants had faced, especially when I gazed at an amber bottle on my father's bathroom shelf. By the time I actually could read its faded label, its contents should have been tossed, but instead, there were some remaining pills of quinine to remind me of a microscopic foe that almost felled my father and, indirectly, me. Even then, I knew that malaria had cast a long, dark shadow on history. In the 20th century alone, I later would learn, it killed between 150 million and 300 million people worldwide, accounting for 2-to-5 percent of all deaths.

When I got older, my dad mentioned that he also had contracted dengue fever on Guadalcanal and had met native Melanesians with advanced cases of lymphatic filariasis and that both diseases were transmitted by mosquitoes. Mulling this information, my fascination with tropical medicine grew, along with a desire to better understand exotic blights. Travel also was in my sights. Luckily, the second goal aligned with that of my adventurous parents. By the time I started high school, our family had already visited much of the United States and driven through Europe on two trips, each lasting several months.

Then came the summer of 1972, a brief window of freedom between college and medical school, when my brother and I worked as volunteers at the only hospital serving a rural department in the far north of Haiti. Of course, I had no idea what to expect until our camion (a creaky, colorfully painted bus stuffed with people, goats and chickens) lurched to a stop at L'Hôpital le Bon Samaritain, a simple compound on the outskirts of Limbé, a town that lacked both telephones and electricity. Once inside, we found the hospital's senior physician administering a shot of Demerol and sloshing disinfectant on an ugly, bloody wound before crudely reducing the jagged ends of a fractured tibia. Its owner had fallen from a mango tree, rolled in the dust and been carried for miles before receiving care.

That summer provided many things of value to a future tropical medicine doc, including an exposure to extreme poverty, epic humidity and giant cockroaches. But it also was fun. With my so-so high school French, I was able to speak with many local residents and hospital employees, surprising even myself with my ability to connect with people whose life experiences were vastly different from mine. On the other hand, the hospital's Ground Zero — its waiting room — always snapped me back to the reason I was there. Almost every morning, its wooden benches and cement floor quickly filled with children and adults suffering every kind of misery, from malnutrition, measles and diarrhea to end-stage tuberculosis and malaria.

A few months later, as a medical student in Chicago, my life was far removed from Haiti, but my mentors at Northwestern

Top Left: The author in a lecture hall of the London School of Hygiene and Tropical Medicine, 1979. **Top Right:** Student laboratory at the London School of Hygiene and Tropical Medicine, 1979. **Bottom:** Waiting room at L'Hôpital le Bon Samaritain, Limbé, Haiti, 1972.

encouraged my interest in tropical medicine. During my residency training, they even said yes to my plan to leave for a year to attend the London School of Hygiene and Tropical Medicine. In London, my hunger for a far deeper dive into parasitology, medical entomology and tropical public health finally was satisfied.

Amazingly, 40 years have passed, but tropical medicine continues to teach me about people, politics, economics and the environment, as well as about health and disease. Just one of the highlights along the way? In the mid-2000s, I spent two years working in Los Angeles, Washington, DC and Africa helping to conceptualize and author a report for the Institute of Medicine. In it, an international committee of experts chaired by a Nobel laureate economist recommended major global subsidies for insecticide-treated bednets and modern, lifesaving treatments for the many tropical poor still threatened by malaria.

Dr. Claire Panosian Dunavan is a past-president of the American Society of Tropical Medicine and Hygiene and a longtime UCLA faculty member.

Photos: Courtesy of Dr. Claire Panosian Dunavan

UCLA Health | it begins with U

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#7 in the Nation

U.S. News & World Report's Best Hospital Survey ranks UCLA No. 1 in Los Angeles and No. 7 in the nation.

Photo: Art Bello/ALLSPORT

Before she decided to pursue a career in medicine, pediatric surgeon Dr. Veronica Sullins was a determined soccer player who competed on college, national and professional teams. Here, Dr. Sullins — Ronnie Fair of the New York Power, No. 17 — fights for the ball against an opponent from the Bay Area Cyberrays in an August 2001 Women's United Soccer Association game at Mitchell Field in Hempstead, New York.