



## ON THE ROAD TO HEALTH CARE EQUALITY

Many LGBTQ patients struggle to find sensitive and compassionate health care. UCLA is working to change that.



A publication of  
UCLA Health and  
David Geffen School of Medicine at UCLA

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## Departments



Photo: Ann Johansson

### 02

#### Leadership

Remembering one of the greatest leaders I've ever known.

BY DR. JOHN C. MAZZIOTTA



Photo: iStock

### 04

#### The Cutting Edge

A decade in review.



Photo: Jessica Pons

### 16

#### Conversation

Dr. Michelle A. Bholat: Understanding the essential role of immigrants in health care.



Illustration: Dieter Braun

### 20

#### Spotlight

Dr. Heather Christofk answers a few questions.



Photo: Nick Carranza

### 48

#### Epilogue

Unraveling a medical mystery to save a young boy's life.

BY DR. MANISH J. BUTTE

## Features



Illustration: Anna & Elena Balbusso

# 22

## On the Road to Health Care Equality

Many LGBTQ patients struggle to find sensitive and compassionate health care. UCLA is working to change that.

BY DAN GORDON



Photo: David Geffen School of Medicine at UCLA Special Collections

# 30

## Sherm

As the 100th birthday of Dr. Sherman M. Mellinkoff approaches, a colleague and friend reflects on UCLA medical school's transformative second dean.

BY DR. CLAIRE PANOSIAN DUNAVAN

## News + Notes



Photo: (Emmylou Harris) Dr. Richard M. Ehrlich

# 36

## Faculty

A surgeon focuses his camera on music icons.



Photo: Gregg Segal

# 38

## Friends

Another landmark gift to the David Geffen School of Medicine at UCLA.



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## Lessons from Sherm

Dr. Sherman M. Mellinkoff was a visionary leader, a humble man of quiet greatness who put UCLA's medical school on its path to excellence. On the occasion of his 100th birthday, we honor his memory.

Leadership is the title for this section of *U* Magazine, and within this space I would like to tell you about a leader who was among the most influential in my life. Dr. Sherman M. Mellinkoff was dean of the school of medicine when I first came to UCLA as a trainee in the late 1970s. He had been dean — the second in the history of what was then still a very young medical school — since 1962 and had achieved such stature that he was known among his peers in academic medicine as the “Dean of Deans.”

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While he was “Dean of Deans” on the national stage, to those of us who knew and worked with him every day, he was simply Sherm, a one-of-a-kind leader of immense integrity, unassuming yet worldly, a true statesman.”

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While he was “Dean of Deans” on the national stage, to those of us who knew and worked with him every day, he was simply Sherm, a one-of-a-kind leader of immense integrity, unassuming yet worldly, a true statesman.

After completing my training, I joined the UCLA faculty and then took on leadership roles. I had many interactions with Sherm, and he and I became good friends. He was fond of jotting down his thoughts and sending notes to me and other faculty. Sherm retired as dean in 1986. In the eight years before his death, in 2016, at the age of 96, I'd walk past his house on my way home after work and sometimes would stop in, and we would have tea and cookies — always tea and cookies — and talk. Despite his frail physical state, his mind was sharp and inquisitive, and our talks were filled with references to mythology or the Peloponnesian War — subjects I hadn't contemplated since college — the classics of literature and wide-ranging discussions of so many other topics. I still cherish those visits with Sherm.

When he was dean, I would occasionally go to his office to talk about a problem or to ask for resources, and after I would leave feeling calm and relaxed. It really was remarkable. You could be fuming over something, and in the end, you came away mesmerized by his graciousness and his ability to defuse the emotional part of any issue. Whether the answer was “We can do that” or “We can't do that” or “We can do part of that,” he would help to solve the problem, always with a strategic goal in mind. Ninety-nine percent of what he did

was getting you back to a place where you could hear and accept the answer, whatever it was. That is a great skill to have as a leader, to be able to separate the emotion and other factors from the specifics of the decision.

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For Sherm, being dean was never about him. He believed that the purpose of a dean was to serve the faculty and trainees, and he devoted his life to those goals.

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For Sherm, being dean was never about him. He believed that the purpose of a dean was to serve the faculty and trainees, and he devoted his life to those goals. He sought to foster greatness in others. He was friendly and at ease and always appeared to have an infinite amount of time to share with you. On what would be the occasion of Sherm's 100th birthday in March, another UCLA colleague, Dr. Claire Panosian Dunavan, writes more about these qualities and shares memories of the man she knew as a close friend ("Sherm," page 30).

Sherm served the UCLA School of Medicine as dean for nearly a quarter-century — an incredible feat, considering that the median tenure for first-time deans of medical schools in the U.S. is around six years. Truly, he was the "Dean of Deans." Under Sherm's extraordinary leadership, UCLA's medical school grew from a fledgling institution to one with a national reputation for outstanding medical education and groundbreaking research.

In 2015, UCLA Chancellor Gene D. Block asked me to take on the combined roles of dean, CEO of UCLA Health and vice chancellor for UCLA Health Sciences. As I thought about whether or not it was possible — or even desirable — to assume all those roles, I called Sherm for advice. "What do you think?" I asked him. He didn't answer right away. Then he said just one word: "Tea." We picked a day, and I went to see him. He wanted to understand what the jobs were like today; they are far different from when he was at the helm. Then, it was more of a mom-and-pop operation, a start-up

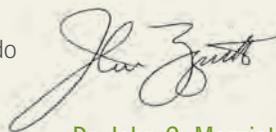
engaged in building and growth, as opposed to today's huge business enterprise that involves a massive medical school and an expansive health care system with hospitals and clinics throughout the region.

"I have a couple of suggestions for you," he said, after listening thoughtfully. "Number one, do it." Then he added, "Be yourself, do the right things and, most of all, make sure that every single day you're having fun doing it." I asked, "How would you advise me to optimize the fun part of this job?" "Be of good cheer," he said. That's what he always would say when parting ways, "Be of good cheer." Such was his constant refrain: Be upbeat. Be positive. Be a part of the solution. Enjoy what you are doing.

What are the lessons I learned from Sherm that serve me today as a leader? Here are five.

- Always be calm. Being calm is an essential quality for a leader to have. If you aren't calm, people worry that there is a crisis and that you are uncertain about what to do.
- Think strategically. Having a clear and well-articulated set of strategic goals that everyone understands simplifies leadership. We can't do everything, so have a framework for deciding, among all the good ideas, which ones to actually invest in.
- Separate decisions that are ethical or moral from those that are strategic or tactical. Ethical or moral decisions offer a binary choice — they either cross a line or they don't. Decisions that are strategic or tactical must be evaluated against a strategic plan.
- Separate the process and the decision from the emotion and the personalities involved.
- Do the job because you love it and you're having a good time.

The week after Sherm's death, all the department chairs, research unit directors and health system leadership met in the room in the Center for Health Sciences where the portraits of the past deans of the school of medicine were hung. We stood in silence and looked at Sherm's kind face and remembered who he was and what we all owe to him. I am grateful to continue to benefit from Sherm's vision and wisdom.



**Dr. John C. Mazziotta, MD (RES '81, FEL '83), PhD**  
Vice Chancellor, UCLA Health Sciences  
CEO, UCLA Health



Image: iStock

# A Decade in Review: 7 Exciting Health Care Breakthroughs

Over the course of the decade that just ended, a number of scientific discoveries and medical advances revolutionized disease treatment, enriched the quality of life for patients and set the stage for future innovations in research and delivery of care. From bench to bedside,

these breakthroughs offered promises beyond what was thought possible decades ago. To reflect upon the progress of the last 10 years, UCLA Health experts weigh in on the decade's most significant health care advances and posit what may be on the horizon.

## Cancer

“Over the last decade, we have seen a significant rise in effective immunotherapies for cancers that were once thought of as a death sentence. Immune checkpoint inhibitors and adoptive immune-cell therapies are generating great excitement and numerous clinical trials and are becoming a new ‘fourth leg’ of cancer therapy, in addition to surgery, chemotherapy and radiation. I expect to see more effective and broadly used anticancer vaccines, new designs in cell targeting against cancer and the use of additional immune-cell types in therapy.”

— **Michael Teitell, MD '93, PhD '91, director of the UCLA Jonsson Comprehensive Cancer Center**

## HIV/AIDS

“A significant development on the HIV/AIDS front is the development of HIV Pre-exposure prophylaxis (PrEP), a once-a-day pill that prevents HIV infection in at-risk populations. This strategy, if deployed, could prevent millions of new HIV infections. Looking ahead, there is hope for the development of new interventions to harness the immune system, allowing more people to control HIV without antiretroviral therapy (ART), and the development of safe and scalable, long-acting options for PrEP and treatment.”

— **Judith S. Currier, MD, chief of the UCLA Division of Infectious Diseases**

## Cardiology

“The development of transcatheter aortic valve replacement (TAVR) is one of most important advances in cardiovascular disease that has markedly changed clinical care. The field of TAVR continues to rapidly evolve, including the development of better devices, new approaches and new implantation strategies, TAVR has become much simpler and safer and can now reach an even broader population of patients.”

— **Gregg Fonarow, MD '87 (RES '90, FEL '93), Eliot Corday Chair in Cardiovascular Medicine and Science and director of the Ahmanson-UCLA Cardiomyopathy Center**

## Alzheimer's Disease

“Recent research, including work at UCLA, projects that the number of Americans with Alzheimer's or mild cognitive impairment, meaning early symptoms of the disease, will more than double by 2060. It could affect 15 million people. The impact of this disease could be huge.”

— **Ronald S. Brookmeyer, PhD, professor of biostatistics and dean of the UCLA Fielding School of Public Health**

## Sleep

“Over the past decade, we have uncovered that inadequate sleep may increase an individual's risk of Alzheimer's disease. In fact, a lack of deep sleep specifically relates to the accumulation of tau in the brain, which is one of the hallmarks of Alzheimer's disease. There is a potential opportunity to delay the progression of certain neurodegenerative conditions by recognizing and improving treatment for sleep disturbances. Improving how we address insomnia, for example, may be a proposed pathway to uncover and reduce the burden of dementia.”

— **Alon Avidan, MD, professor of neurology and the director of the UCLA Sleep Disorders Center**

## Multiple Sclerosis

“Over the last decade, we saw more than half-a-dozen new and more effective disease-modifying therapies for multiple sclerosis (MS). We are looking forward in the near future to the development and implementation of biomarkers that will enable more precise tracking of disease and prognosis and improved treatments. We will see more evidence-based recommendations on lifestyle and wellness strategies that can help manage MS, such as diet and exercise.”

— **Barbara S. Geisser, MD, professor of clinical neurology and clinical director of the Multiple Sclerosis Program at UCLA**

## Diet and Nutrition

“One of the biggest scientific revelations of the past decade in diet and nutrition is the deeper understanding of just how much lifestyle and dietary habits contribute to myriad chronic diseases around the world. The introduction of plant-based ‘meat’ options, which are close analogues in texture and flavor to the ‘traditional’ animal-based meats, is one example. We are at the starting line of a huge shift in eating patterns, and I anticipate that more people in developed countries will make a switch to a more whole-foods plant-based diet, both for their own health and for the health of the planet.”

— **Dana Hunnes, PhD, senior dietitian at Ronald Reagan UCLA Medical Center and adjunct assistant professor in the UCLA Fielding School of Public Health**

— *Alana Prisco*

# Can a “Battery Leak” Trigger the Onset of Type 2 Diabetes?

Could a leaky “battery” within our cells be at the core of the mechanism that sets off type 2 diabetes? New research by UCLA scientists may have opened a window to the answer.

A central question in diabetes research is why cells of the pancreas, known as beta cells, initially over-secrete insulin. The prevailing theory was that the body may be in the process of becoming “deaf” to insulin, so beta cells secrete more to compensate. But isolated beta cells still over-secrete insulin, which exposes a gap in that theory.

In the new study, researchers set out to understand what other mechanism beyond insulin resistance (that is, the body becoming “deaf” to insulin) and high glucose levels might explain why diabetes develops. The scientists found that a pathway independent of glucose, but sensitive to fatty acids, appears to drive insulin secretion in the early stages of diabetes.

The teams found that in beta cells from obese, pre-diabetic mice, a protein known as Cyclophilin D, or CypD, induced a phenomenon known as “proton leak,” and that this leak promoted insulin secretion in the absence of elevated glucose. The mechanism was dependent on fatty acids, which are normally incapable of stimulating insulin secretion in healthy animals.

“Beta cells are a remarkable sensor of glucose. They take the energy from the nutrients and store it in mitochondria, which are like miniature batteries,” explains Orian Shirihai, MD, PhD, professor of endocrinology and pharmacology. “Once the voltage in these batteries goes high, a unique combination of signals is transmitted to the cell membrane, leading to post-meal insulin secretion. For years, it has been known that beta cells from pre-diabetic humans and animals are very inefficient in delivering the energy from nutrients to secretion. The reason was attributed to a constant leak in their batteries, causing them to constantly lose energy.”

Once the team determined that the levels of leak closely predict the over-secretion of insulin, they decided to test what had not been previously considered: Perhaps in the pre-diabetic animal, it is the battery leak itself that produces an abnormal signal for secretion, even in the absence of elevated glucose. “Until that day,” Dr. Shirihai says, “we only considered a leak as a mechanism that will exhaust beta cells and impair their ability to respond to glucose. But we never tested the effect of such a leak in the absence of glucose. We were in for a big surprise that would require a significant shift in our thinking.”

The research further determined that obese mice who lacked the gene for CypD did not secrete excess insulin. The team confirmed the same process was taking place in isolated human pancreas cells. The results suggest new ways to prevent the development of insulin resistance and to treat diabetes, including halting its progression by blocking the proton leak in the beta cell.

— *Alice Walton*



“Mitochondrial Proton Leak Regulated by Cyclophilin D Elevates Insulin Secretion in Islets at Non-Stimulatory Glucose Levels,” *Diabetes*, November 2019

# Repairing and Reversing Damage Caused by Huntington's Disease

A new study examining the role that star-shaped brain cells called astrocytes play in Huntington's disease has identified a potential strategy that may halt the disease and repair some of the damage it causes. Astrocytes interact with and support neurons, or nerve cells, and other brain cells. Although astrocytes outnumber neurons, little is known about how they interact with synapses, the junctions between neurons that enable them to communicate and convey messages to each other. The study found that Huntington's disease damages astrocytes at the early stages of the disease, which contributes to the neuropsychiatric symptoms that develop as the disease progresses.

Huntington's is caused by a mutation in the huntingtin gene. People with Huntington's experience depression, irritability and other neurological and behavioral problems. They also may have difficulty processing information and controlling their body's movements. "It's likely that we will not understand brain diseases without also understanding what happens to the cells that actually form the brain, including astrocytes," says Baljit S. Khakh, PhD, professor of physiology and neurobiology at the David Geffen School of Medicine at UCLA.

Dr. Khakh led a team that previously pioneered a method that enables scientists to look inside the brains of mice to observe astrocytes' influence over nerve-cell communication in real time. The scientists are able to see how interactions between synapses and astrocytes change over time and as a result of neurological diseases.

For the recent study, researchers observed the progression of Huntington's disease in samples from the brains of deceased humans and in living mice that carry the gene mutation. They found that by suppressing the mutation in astrocytes, they were able to stop the disease progression in mice and repair some of the damage that can be seen when examining the cells closely. "We believe that if we are able to stop the progression of the disease in astrocytes and neurons, then we may be able to restore activity in the brain to what it was before the disease developed," Dr. Khakh says.

Blanca Diaz-Castro, PhD, a former UCLA postdoctoral scholar and member of Dr. Khakh's research team, said that while it is well-known that the mutation causes cell death in neurons, this is the first study to identify how the mutation affects astrocytes. "We believe the findings will lead to further studies on astrocytes in brain diseases," she says.

The study also established a database that can now be used for future studies of astrocytes in many neurodegenerative diseases. Dr. Khakh says the findings add to a growing body of evidence that suggests impaired astrocytes play a role in many neurological diseases, such as Huntington's, ALS, MS and Alzheimer's.

— Marrecca Fiore

 "Astrocyte Molecular Signatures in Huntington's Disease," *Science Translational Medicine*, October 16, 2019



The authors compared astrocyte gene expression from mouse models and human patients of Huntington's disease to better understand the functional consequences of mutant huntingtin expression in these cells.

Illustration: Dr. Blanca Diaz-Castro

# Father's X Chromosome May Yield Clues to Higher Rates of Autoimmune Disease in Women

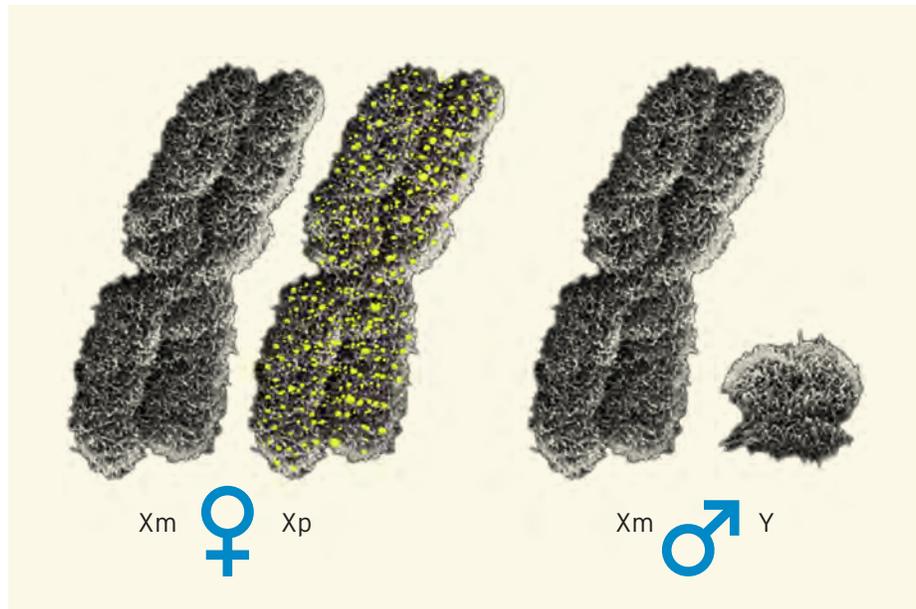
UCLA scientists have discovered one reason why autoimmune diseases are more prevalent in women than in men. While males inherit their mother's X chromosome and father's Y chromosome, females inherit X chromosomes from both parents. New research, which shows differences in how each of those X chromosomes is regulated, suggests that the X chromosome that females get from their father may help to explain their more active immune system.

It's been known for many years that women are more susceptible to autoimmune diseases than men are," says Rhonda Voskuhl, MD, Jack H. Skirball Chair in Multiple Sclerosis Research and director of the UCLA Multiple Sclerosis Program. "Figuring out why can help us develop new drugs to treat these autoimmune diseases."

Autoimmune diseases, such as multiple sclerosis and rheumatoid arthritis, are conditions that affect the body's ability to fight viruses, bacteria and infections. The problem causes a person's immune cells to attack the body instead. Women generally have stronger immune responses than men, with more robust responses to some vaccinations and infections. However, this heightened immune system also makes women three times more likely than men to develop multiple sclerosis and nine times more likely to develop lupus and more prone to a host of other autoimmune diseases, Dr. Voskuhl says. The effect of sex hormones — testosterone and estrogen — in these differences has been well-studied, but the role of sex chromosomes has been less clear.

Dr. Voskuhl and her colleagues focused on differences between the X chromosomes inherited from each parent. They first analyzed expression levels of genes in mice with the male (XY) and female (XX) chromosome set. They identified a handful of immune-system-related genes on the X chromosome that are expressed less — producing fewer corresponding molecules — in the immune cells of female mice.

To further study these differences, Dr. Voskuhl's team next compared mice that had just one X chromosome — either a maternal or paternal X chromosome. They determined levels of methylation — the addition of methyl chemical groups to DNA — in the X chromosomes. Methylation is known to turn down, or block, the expression of genes. And while the methyl groups aren't part of the DNA sequence itself, patterns of methylation can be passed from parent to child. The researchers discovered that there was more methylation on paternal than on maternal X chromosomes. Finally, they confirmed that



Increased DNA methylation when the X chromosome is of paternal origin compared to when it is of maternal origin. DNA methylation depicted in yellow.

Image: Courtesy of Dr. Lisa Golden

several genes on the X chromosome were expressed less when the X chromosome was of paternal as compared to maternal origin.

"What we're talking about here is not mutations that affect gene sequences, but instead signals that affect how the same sequence of genes is differentially expressed in females versus males. These differences would be missed in traditional genetic studies," Dr. Voskuhl says.

The findings suggest that the X chromosomes packaged into sperm and passed from father to daughter may have higher levels of methylation than the X chromosomes passed along in eggs from a mother to her offspring. This methylation dampens the expression of some immune system genes in females, making their immune activity different from males.

"If you can find regulators of methylation that target these differences, you might be able to reduce the immune responses of females to treat autoimmune diseases," Dr. Voskuhl says. "Going forward, when one considers sex as a biologic variable in diseases, it can lead to new treatment strategies."

— Sarah C.P. Williams

 "The X-linked Histone Demethylase *Kdm6a* in CD4+ T Lymphocytes Modulates Autoimmunity," *The Journal of Clinical Investigation*, August 12, 2019

# Cells' Mitochondria Work Much Like Tesla Battery Packs

For years, scientists assumed that mitochondria — the energy-generating centers of living cells — worked much like household batteries, generating energy from a chemical reaction inside a single chamber or cell. Now, UCLA researchers have shown that mitochondria are instead made up of many individual bioelectric units that generate energy in an array, similar to a Tesla electric car battery that packs thousands of battery cells to manage energy safely and provide fast access to very high current.

“Nobody had looked at this before because we were so locked into this way of thinking; the assumption was that one mitochondrion meant one battery,” says Orian Shirihai, MD, PhD, professor of endocrinology and pharmacology at the David Geffen School of Medicine at UCLA.

Mitochondria are one type of organelle — tiny structures that perform specific functions within a cell. All cells in the human body, except for red blood cells, contain one or more — sometimes several thousand — mitochondria. These organelles have a smooth outer membrane and a wrinkled inner membrane that has folds, called cristae, extending toward the mitochondrion’s center. Until now, researchers thought that the purpose of the inner membrane’s wrinkly texture was simply to increase the surface area for energy production.

“Electric vehicle engineers told me about the advantages of having many small battery cells instead of one large one; if something happens to one cell, the system can keep working, and multiple small batteries can provide a very high current when you need it,” Dr. Shirihai says.

Tesla vehicles, for instance, are powered by 5,000 to 7,000 small battery cells, depending on the car model. The small batteries, arranged in a large grid, let the vehicles rapidly charge, efficiently cool and quickly use a large amount of power to accelerate.

Dr. Shirihai, using conventional microscopy, had been seeing that cells function well with a small number of very long mitochondria, which did not match the idea of many small batteries. He started to wonder whether each mitochondrion really was a single large battery.

Dr. Shirihai and colleagues faced a difficult challenge to develop an approach to map the voltage on the membrane of mitochondria in living cells at a resolution never seen before. Two of Dr. Shirihai’s students optimized a form of high-resolution microscopy to visualize the interior of mitochondria and watch energy production and voltage distribution inside the organelle. “What the images told us was that each of these cristae is electrically independent, functioning

as an autonomous battery,” Dr. Shirihai says.

“One cristae can get damaged and stop functioning, while the others maintain their membrane potential.”

Between each cristae, where the inner membrane of the mitochondria loops back outward, clusters of proteins form the boundaries of each cristae.

Researchers knew that without these proteins, mitochondria were more sensitive to damage. Now, Dr. Shirihai

has explained why: The proteins normally divide each cristae from their neighbors, acting as electrical insulators. In cells lacking

those proteins, Dr. Shirihai found that each mitochondrion became one giant battery. “The

battery experts I had originally talked to were very excited to hear that they were right,” he says. “It turns out that mitochondria and Teslas, with their many small batteries, are a case of convergent evolution.”

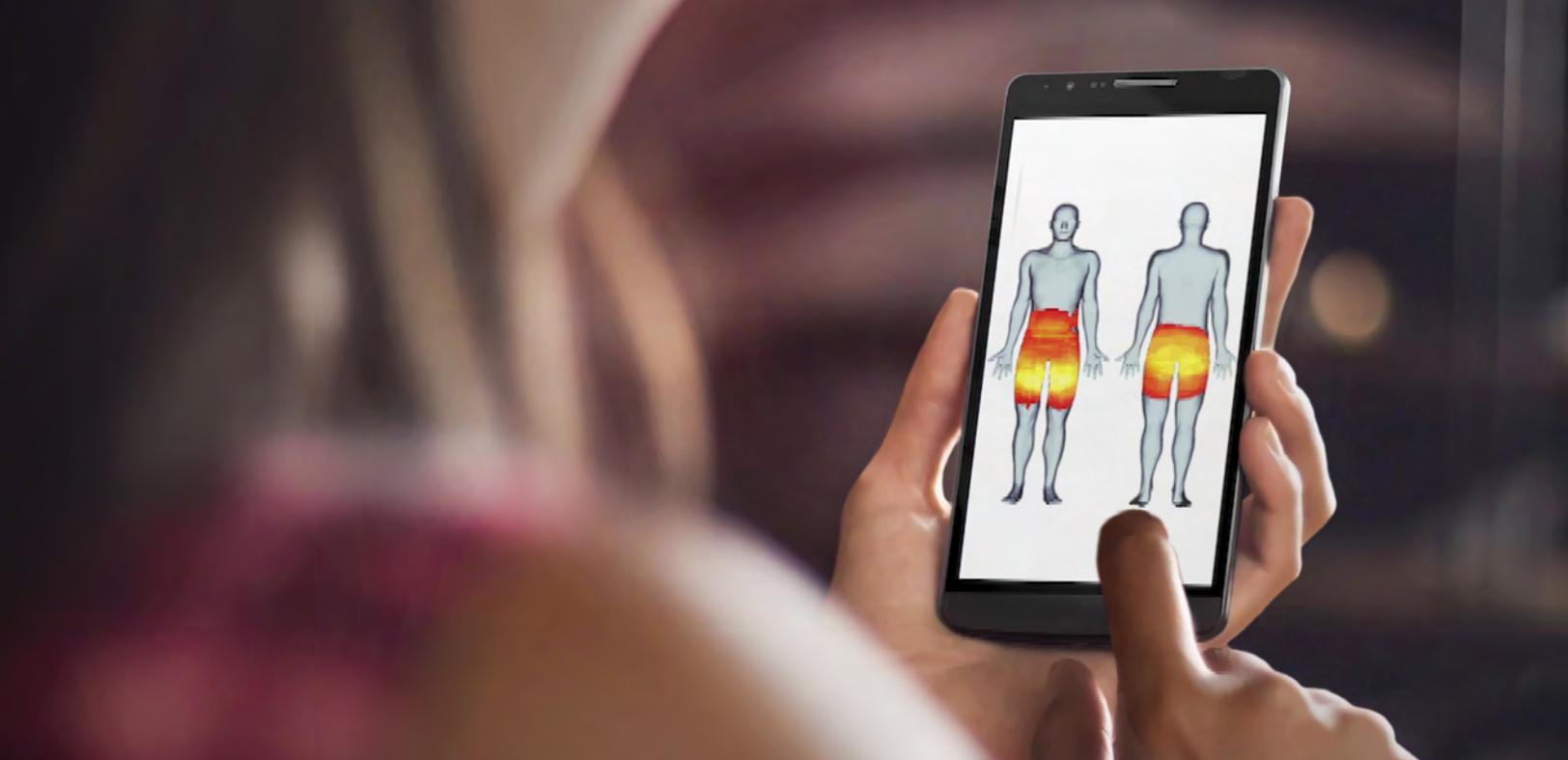
The discovery may help lead to a new understanding of the role of mitochondria in aging, disease and medical complications.

— Sarah C.P. Williams



Illustration: Scott Wild

“Individual Cristae within the Same Mitochondrion Display Different Membrane Potentials and Are Functionally Independent,” *The EMBO Journal*, October 14, 2019



A woman uses Somatomap's 2D manikin to indicate that her hips, buttocks and thighs are areas of concern.

Photo: UCLA/Laureate Institute for Brain Research

## Body Image Concerns Are Universal

When researchers from UCLA and the Laureate Institute for Brain Research in Tulsa, Oklahoma, wanted to test an app they created to measure body image perception, they went to the body image experts — fashion models. Sixty-five female models signed to professional modeling agencies in London were asked to step off the runway and into a laboratory to help researchers study Somatomap, a mobile and desktop app designed to research body image and ultimately to help doctors treat patients with eating and body dysmorphic disorders.

Researchers also recruited 38 women from the general population in the United Kingdom, using social media and fliers. Then, they put the two groups to the test to see which ones knew their bodies better. Participants used Somatomap's 3D avatar to estimate the overall size of their bodies, as well as the size of individual body parts. Measurements were taken to assess the accuracy of how the participants perceived their bodies versus their actual sizes and shapes.

They also were asked to highlight areas of concern — such as their face, abdomen, thighs and buttocks — using a 2D manikin in Somatomap. Participants then used words and emoticons to describe how the body parts made them feel.

Not surprisingly, the models more accurately estimated their overall body size than women who were not models, likely because models depend on their bodies to make a living, and they spend more time looking at themselves and being measured for clothes compared to other women.

What was surprising to the researchers was that the models, like many other women, had body image concerns. While models were

most concerned that their thighs and buttocks might be too large, the women who were not models were mostly concerned that their tummies were too large. Both groups described their body areas of concern as too “fat” or “bulgy.”

Jamie D. Feusner, MD '99 (RES '03, FEL '04, '06), director of the Eating Disorders and Body Dysmorphic Disorder Research Program at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, says it is possible that the models knew their bodies better because their brains have developed visual expertise beyond what other people have. “This is most likely something they acquired as a result of being in their profession, which provides hope that others with distorted body perception could, through training, become more accurate,” he says.

Although the models' bodies were longer and slimmer in comparison to the bodies of the non-models, the difference in the size of their shoulders and busts were not as significant — another finding that surprised researchers. “This would mean that the models' shoulders and busts are somewhat disproportionately large compared to the rest of their body parts,” Dr. Feusner says.

While the models estimated the size of their overall bodies and body parts more accurately than the other women did, both groups underestimated the overall size of their bodies, as well as certain body parts.

Ultimately, researchers hope Somatomap, which is hosted on the UCLA Chorus application platform developed by Armen Arevian, MD, PhD, director of the Innovation Lab at the Semel Institute, will help doctors better diagnose and treat people with eating and other body image disorders. Larger studies are underway, testing its use in individuals with anorexia nervosa and body dysmorphic disorder.

— Marrecca Fiore



“A Novel Mobile Tool (Somatomap) to Assess Body Image Perception Pilot Tested with Fashion Models and Nonmodels: Cross-Sectional Study,” *JMIR Mental Health*, October 29, 2019



Using a software program to analyze a patient's MRIs, UCLA Health researchers were able to measure the volume of different regions of the brain, identifying areas where shrinkage may have occurred.

Image: UCLA Health

## MRI May Help Doctors Differentiate Causes of Memory Loss

A UCLA-led study has found that MRI scans can help doctors distinguish whether a person's memory loss is being caused by Alzheimer's disease or by traumatic brain injury (TBI). The study, which also involved researchers at Washington University in St. Louis, is important because it could help prevent doctors from misdiagnosing Alzheimer's disease — a diagnosis that can be devastating for patients and their families, and can prevent them from receiving appropriate treatment. (A 2016 study by researchers affiliated with the University of Toronto found that up to 21 percent of older adults with dementia may be misdiagnosed with Alzheimer's.)

The current study involved 40 patients whose average age was just under 68 and who were being treated by UCLA neurologists. All of the patients had suffered traumatic brain injury and later developed memory problems. "We already knew that MRIs can reveal subtle abnormalities in patients with neurological disorders, such as Alzheimer's," says Somayeh Meysami, MD, PhD, a postdoctoral clinical research fellow in cognitive and behavioral neurology at the David Geffen School of Medicine at UCLA. "The purpose of our study was to evaluate whether MRI also could reveal distinct abnormalities in traumatic brain injury," Dr. Meysami says. "And, if we could identify such a pattern, it would lead to improved differentiation of TBI-related memory loss from other causes of dementia."

Using a software program to analyze the patients' MRIs, the researchers discovered that TBI caused the most damage to a region of the brain known as the ventral diencephalon, which is associated with learning and emotions. They also found that the least amount of

atrophy occurred in the hippocampus, which is involved in memory and emotions — and is the part of the brain that is most affected by Alzheimer's disease.

Dr. Cyrus Raji, MD, PhD, assistant professor of radiology at Washington University, says that one of the benefits of the approach is that it doesn't require specialized equipment beyond an MRI machine and the software the researchers used — so it could potentially be performed at many medical centers. "The method we used to measure brain volumes in these individuals is useful because it can be applied on the same type of MRI scans we obtain in the clinic with no special type of imaging required," Dr. Raji says.

The Alzheimer's Association estimates that up to 40 percent of dementias are caused by conditions other than Alzheimer's. And according to the U.S. Centers for Disease Control and Prevention, 2.87 million Americans experienced traumatic brain injury in 2014, with the rates highest for people age 75 or older. Children age 4 and younger and adults age 65 and older were most likely to suffer serious brain injuries after a fall.

"Our study offers further evidence that not all memory loss is caused by Alzheimer's disease," says Mario Mendez, MD (RES '82, FEL '84), PhD, professor-in-residence of neurology, psychiatry and biobehavioral sciences at the Geffen School of Medicine. "It can be attributed to TBI, as well as other dementias and neurodegenerative disorders."

— Marrecca Fiore



"MRI Volumetric Quantification in Persons with a History of Traumatic Brain Injury and Cognitive Impairment," *Journal of Alzheimer's Disease*, October 29, 2019

## Molecular Changes in Cells of Eye's Lens Predict Future Cataracts

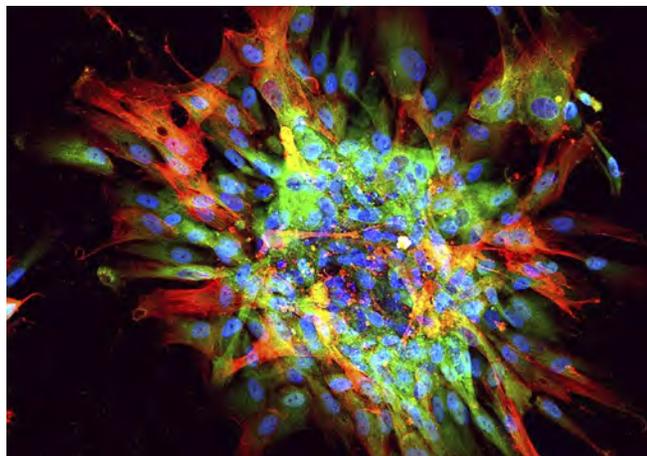
To learn how cataracts start, UCLA researchers Suraj Bhat, PhD, professor of ophthalmology at the UCLA Stein Eye Institute, and David Elashoff, PhD, professor of biostatistics and internal medicine and health services research at the David Geffen School of Medicine at UCLA, created an animal model for a type of hereditary cataract that occurs in infants and young

children. The team introduced genetic mutations for the human disease into mice and analyzed gene activity in each animal's developing lens, one cell at a time.

Cataracts cloud the lens of the eye, blocking the transmission of light and impairing vision, particularly in the aging eye. Children can be born with the condition, or a cataract may develop after eye

injuries, inflammation and other eye diseases. Surgical removal is the only solution. According to the World Health Organization, cataracts remain the leading cause of blindness and are responsible for 51 percent of world blindness. By 2050, the number of Americans with cataracts is expected to double from 24.4 million to nearly 50 million, according to the National Eye Institute.

# Researchers Create Accurate Model of Organ Scarring



Microscopic image of scarring in a dish, showing evidence of fibrosis (red, green) and nuclei of all cells (blue).

Image: Courtesy of UCLA Broad Stem Cell Research Center/*Cell Reports*

While every organ in the body is capable, to some extent, of repairing itself after an injury, the process creates scar tissue that, under some circumstances, can go rogue and continuously divide and spread until it strangles the organ it was intended to help heal. That progressive, out-of-control scarring, which can lead to organ failure, is called fibrosis. Fibrosis plays a major role in many diseases and conditions, including chronic kidney disease, liver cirrhosis, idiopathic pulmonary fibrosis, scleroderma and heart failure.

For decades, researchers have sought a therapy that can halt or reverse fibrosis, but replicating the complex, progressive nature of the disease in the lab has been problematic. A team led by Brigitte Gomperts, MD, a member of the Eli and Edythe Broad Center of Regenerative

Medicine and Stem Cell Research at UCLA and the UCLA Jonsson Comprehensive Cancer Center, now has developed a “scar in a dish” model that uses multiple types of cells derived from human stem cells to closely mimic the progressive scarring that occurs in human organs. The researchers used this model to identify a drug candidate that stopped the progression of and even reversed fibrosis in animal models.

The model was created using induced pluripotent stem cells, which can generate any cell type. The resulting mixture contained many types of cells that are thought to play a role in fibrosis. All of the cells in the mixture retained a degree of plasticity, meaning they had the capacity to change cell types, from an epithelial cell to a mesenchymal cell, for example.

The cell mixture then was introduced to a rigid hydrogel that recreated the approximate stiffness of a scarred organ. The cells responded in the same way that they respond to injury in the body, by producing signals of injury or damage and activating a molecule called transforming growth factor beta, or TGF beta, which serves as the spark that sets off the roaring fire of fibrosis.

In the past, researchers in the lab used one type of cell to which they added TGF beta to provoke scarring. But those experiments produced models that tended to heal on their own, which made it difficult to discern whether possible treatments were working or the model was simply “healing” itself. By using the hydrogel to simulate injury and provoke TGF beta production, Dr. Gomperts’ team ensured their model was not able to heal itself; as long as the cells remained on the hydrogel, they perceived an “injury” and continued to progressively scar. That gave the researchers the opportunity to test drug candidates on a scar that wasn’t actively engaged in healing itself.

The team then set out to identify drugs that could halt or reverse the process. After testing more than 17,000 small molecules — organic compounds that are often used to create pharmaceutical drugs — they identified a small molecule that stopped progressive scarring and even healed the damage it had caused. The researchers suspect the molecule works by activating the cells’ inherent wound-healing processes.

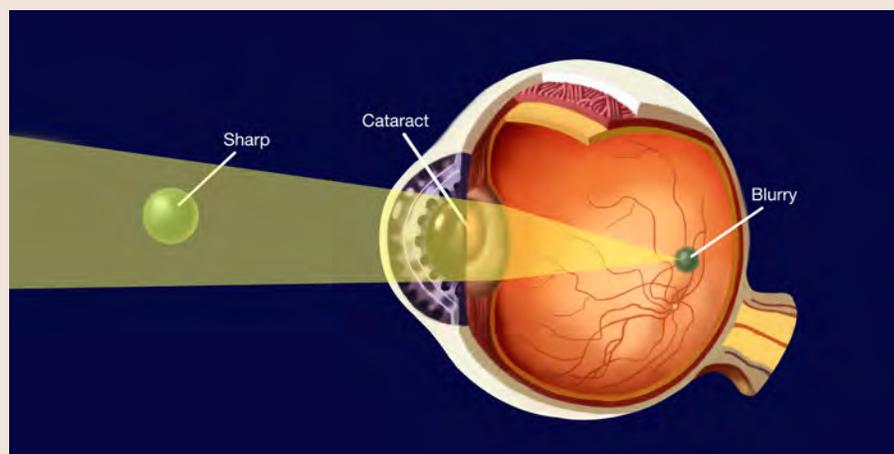
— Tiare Dunlap

 “Modeling Progressive Fibrosis with Pluripotent Stem Cells Identifies an Anti-fibrotic Small Molecule,” *Cell Reports*, December 10, 2019

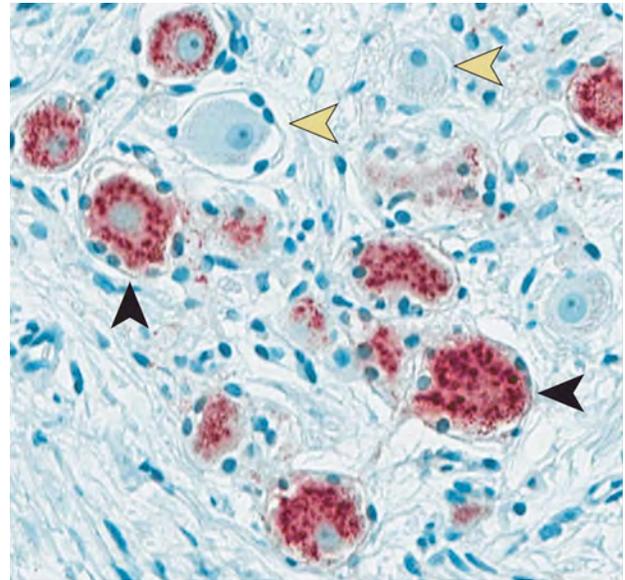
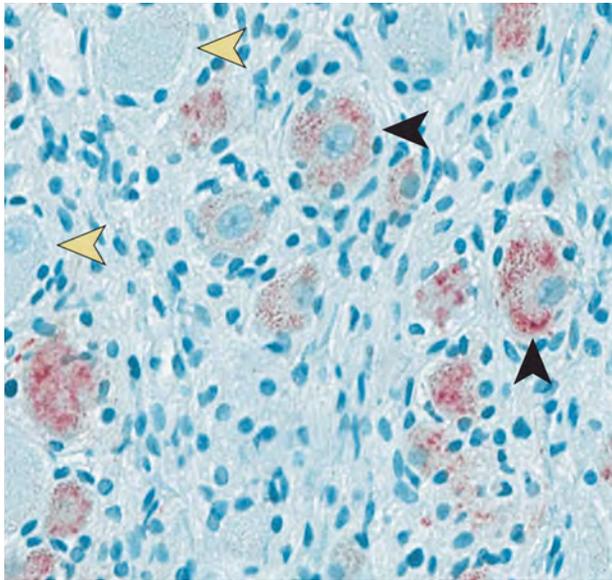
Drs. Bhat and Elashoff uncovered molecular changes that occurred before the cataract became visible in the developing eye, suggesting a new biomarker for future disease. The UCLA findings deepen the understanding of how a cataract starts at the molecular level and reveal how disrupted gene activity could precede the disease.

— Elaine Schmidt

 “Transcriptional Profiling of Single Fiber Cells in a Transgenic Paradigm of an Inherited Childhood Cataract Reveals Absence of Molecular Heterogeneity,” *Journal of Biological Chemistry*, September 13, 2019



## Biomarker Predicts Which Heart-failure Patients at Higher Risk of Death within One-to-three Years



Neurons from patients with heart failure (left) have lower neuro peptide Y content (brown) than those from control patients (right), due to increased release into the heart and circulation during severe heart failure.

Images: Courtesy of Dr. Olujimi A. Ajjola

A UCLA-led study revealed a new way to predict which patients with “stable” heart failure — those who have heart injury but do not require hospitalization — have a higher risk of dying within one-to-three years. Although people with stable heart failure have similar characteristics, some have rapid disease progression while others remain stable. The research shows that patients who have higher levels of neuro peptide Y, a molecule released by the nervous system, are 10 times more likely to die within one-to-three years than those with lower levels of neuro peptide Y.

About half of people who develop heart failure die within five years of their diagnosis, according to an American Heart Association report, but it hasn’t been understood why some live longer than others despite receiving the same medications and medical-device therapy. The researchers set out to determine whether a biomarker of the nervous system could help explain the difference. To date, no other biomarker has been identified that can so specifically predict the risk of death for people with stable heart failure.

UCLA cardiologist Olujimi A. Ajjola, MD (FEL ’13, ’14), PhD, and his research colleagues analyzed blood from 105 patients with stable heart

failure, searching for a distinct biomarker in the blood that could predict how likely a person would be to die within a few years. They found that neuro peptide Y levels were the clearest and most significant predictor. The scientists also compared nerve tissue samples from patients with samples from healthy donors and determined that the neurons in the people who were most at risk for dying from heart failure were likely releasing higher levels of neuro peptides.

The results could give scientists a way to distinguish very-high-risk patients with stable heart failure from others with the same condition, which could inform which patients might require more aggressive and targeted therapies. The study also highlights the need for heart-failure therapies that target the nervous system. Further studies could help determine whether or not a patient’s risk for death can be ascertained through less invasive measures, such as a simple blood draw, and whether or not early aggressive intervention in these people could reduce their risk of death.

— Alana Prisco

 “Coronary Sinus Neuro peptide Y Levels and Adverse Outcomes in Patients with Stable Chronic Heart Failure,” *JAMA Cardiology*, December 26, 2019

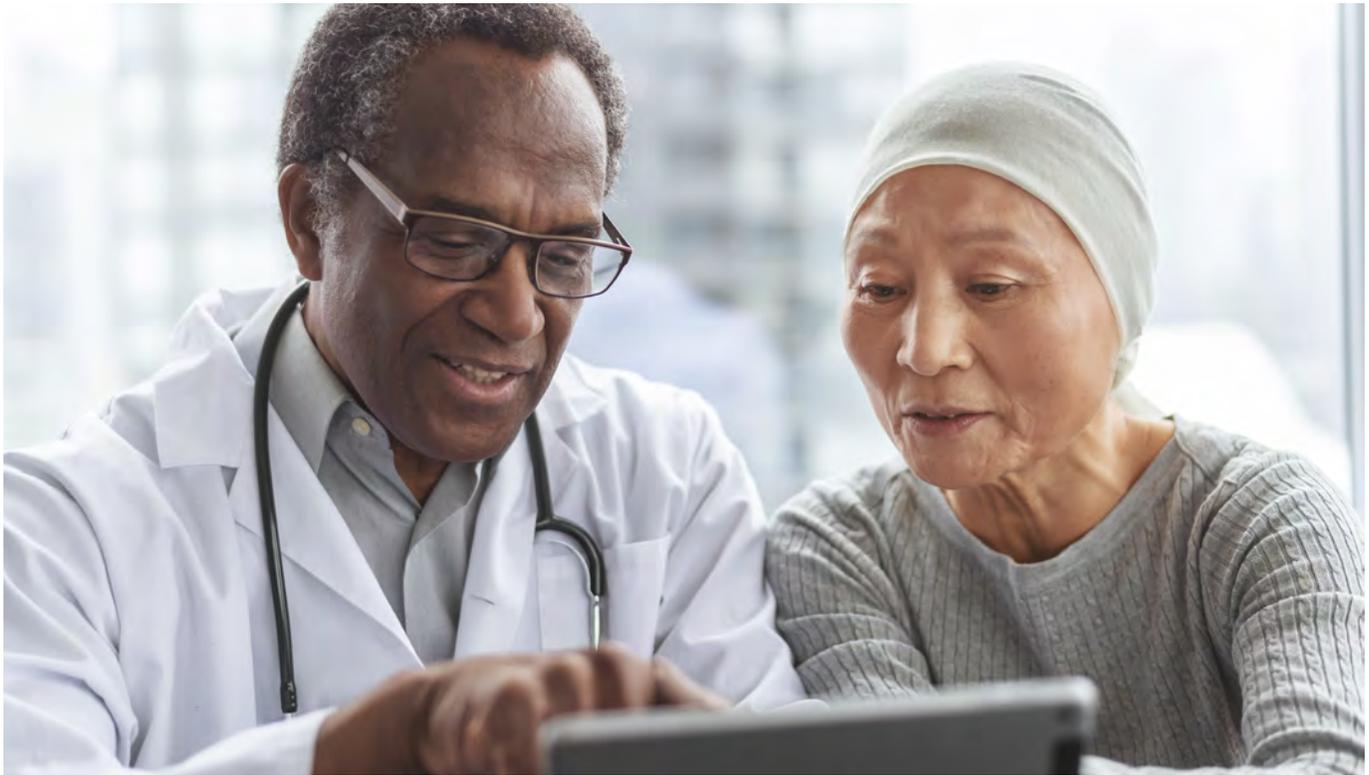


Image: Getty

## Targeted Therapy Drug Extends Lives of Women with Aggressive Breast Cancer

A study led by UCLA researchers found that adding the targeted therapy drug ribociclib to standard hormone therapy significantly improves overall survival in postmenopausal women with advanced hormone-receptor positive/HER2- breast cancer, one of the most common types of the disease. The findings also show the combination treatment is beneficial at the time of recurrence and should become a first-line option in postmenopausal women with HR+/HER2- advanced breast cancer.

“Many people argue that the first type of treatment women with this type of metastatic cancer should receive is some other form of hormonal therapy and then wait to see if they respond to that treatment,” says Dennis Slamon, MD (FEL ‘82), chair of hematology-oncology and director of clinical and translational research at the UCLA Jonsson Comprehensive Cancer Center. “But we found there’s a significant difference when you use the combination of ribociclib with hormone therapy as the first line of therapy. There is absolutely no reason to wait to give women this treatment. This should be the new standard.”

Ribociclib is a drug that belongs to a class of inhibitors that works by blocking the activity of proteins called cyclin-dependent kinase 4/6 (CDK4/6) enzymes, which promote cell division and cancer growth. The current results build upon data previously reported by Dr. Slamon and colleagues that ultimately helped lead to the Food and Drug Administration’s (FDA) approval of ribociclib. There are now three CDK4/6 inhibitors that have been approved by the FDA for combination treatment with standard hormone therapies.

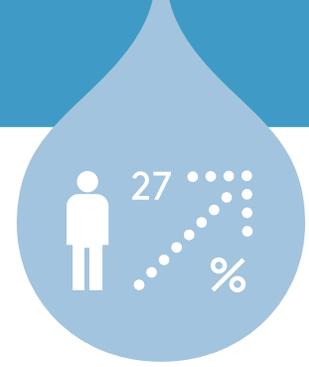
The double-blind clinical trial involved 726 postmenopausal women who had advanced hormone-receptor positive/HER2- breast cancer. The trial included women who had not previously received endocrine therapy, as well as women who were in the first-line or second-line setting. The results demonstrated a statistically significant improvement in survival, with a 28 percent reduction in risk of death. At 42 months, the estimated rates of survival were 58 percent for the drug combination treatment and 46 percent for women who were treated with the hormone therapy alone. The median progression-free survival with ribociclib in the first-line setting is the longest reported in a phase III trial in hormone-receptor positive/HER2- breast cancer — 33.6 months as compared to 19.2 months for those in the hormone-therapy-only group.

This is the first demonstration of an overall survival advantage for postmenopausal women and the second study confirming that the drug increases overall survival — something very few trials are able to accomplish. “Increasing overall survival is the hardest endpoint to move,” Dr. Slamon says. “We’re also seeing that the time of progression-free survival is the longest yet reported for any of the drugs in this class. And even when patients are off the drug, the effect seems to be long-lasting in terms of the benefit. It’s important because this means we are helping women live longer and have a better quality of life.”

The team is now evaluating these drugs in women with early-stage breast cancer in an international clinical trial.

— Denise Heady

 “Overall Survival with Ribociclib Plus Fulvestrant in Advanced Breast Cancer,” *The New England Journal of Medicine*, December 11, 2019



# UCLA Addresses Increasing Demand with New Master's in Genetic Counseling

As the use of genetic testing to diagnose disease increases, so does the demand for counselors trained to interpret results and guide patients facing complex genetic disorders. To meet the increasing need, the David Geffen School of Medicine at UCLA is introducing a new master's of science degree in genetic counseling. Housed within the Department of Human Genetics, the two-year program aims to broaden underserved populations' access to genomic medicine in Los Angeles, one of the most ethnically and racially diverse cities in the nation. A close alignment with the UCLA Institute for Precision Health and Institute for Society and Genetics will enhance cross-disciplinary training for students in the program.

"Training the next generation of practitioners in this new era of precision health is a critical component of our educational mission," says Kelsey C. Martin, MD, PhD, dean of the Geffen School of Medicine. "As a leading academic medical center and university, UCLA offers a unique environment for collaboration that prepares students to become innovators in genetic counseling research and clinical medicine."

Genetic counselors play a vital role on health care teams, providing risk assessment, education and support to individuals and families at risk for — or diagnosed with — a wide range of inherited diseases. They also interpret genetic test results, provide counseling and serve as patient advocates during the diagnosis and treatment process. They are "an important part of the precision health ecosystem and play a vital role in the delivery of patient-centered care," says Clara Lajonchere, PhD, deputy director of the UCLA Institute for Precision Health.

"When we're talking about translational medicine, this is a beautiful extension from the basic to the clinical, which is an important part of our department's mission," says Leonid Kruglyak, PhD, chair of human genetics.

The U.S. Bureau of Labor Statistics projects employment of genetic counselors to grow 27 percent from 2018 to 2028, much faster than the average for all occupations. *U.S. News & World Report* ranks genetic counseling as No. 11 of the top health care support jobs.

According to the American Board of Genetic Counseling, 5,000 genetic counselors are certified in North America. Assuming one counselor per 100,000 people, the demand for genetic counselors in patient care is estimated to exceed supply until 2024. California and 23 other states offer licensure for genetic counselors.

The program aims to train a cadre of counselors that reflects California's diversity. "As a microcosm of the world, Los Angeles offers a rare setting for advancing what we know about genetic diseases," says Daniel Geschwind, MD (RES '95, FEL '97), PhD, associate vice chancellor for precision health. "Diversity is critical to understanding genetic variations among all populations in order to accurately deliver targeted treatments."

"I recently gave a diagnosis to a young man who had been our patient for 17 years. Seventeen years with no diagnosis!" says genetic counselor Naghmeh Dorrani, associate program director. "There's currently no treatment for his condition, but the hope is that there will be. Once you have a name, that's where things start."

— Elaine Schmidt



For more information about the new genetic counseling master's program, go to: [medschool.ucla.edu/gcprogram](https://medschool.ucla.edu/gcprogram)



Illustration: Maja Moden

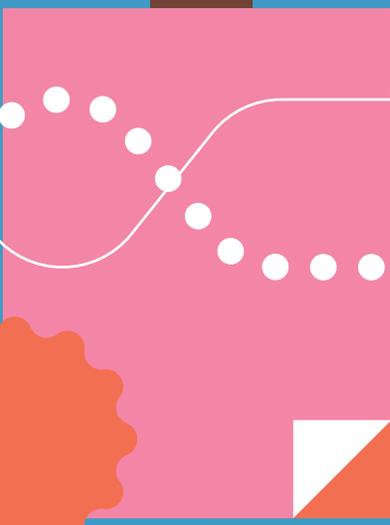
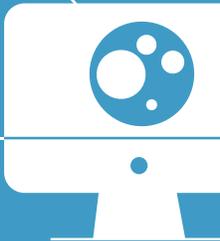


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# “We Do Better with Diversity”

*As the U.S. population becomes increasingly diverse, foreign-born doctors, nurses and associated care givers are essential to address the needs of growing immigrant communities. Michelle Anne Bholat, MD (RES '95, FEL '96), MPH, and her colleagues in UCLA's International Medical Graduate Program are working at the intersection of immigration and health care to train the next generation of providers.*

**Dr. Michelle Anne Bholat**  
Executive Vice Chair,  
Department of Family Medicine  
Executive Director,  
UCLA International Medical  
Graduate Program

Immigration is changing the face of American health care. This is especially true in California, where more than a quarter of residents were born outside the United States. While public attention tends to focus on the challenges of such demographic change, Michelle Anne Bholat, MD (RES '95, FEL '96), MPH, executive vice chair of the Department of Family Medicine, prefers to talk about “solutions and contributions — ways in which immigrants are strengthening the health care system.” “International providers — including physicians, nurses and home health aides — are a great resource for this nation,” says Dr. Bholat, who also is executive director and cofounder of UCLA's International Medical Graduate (IMG) Program, which has the goal of helping doctors from Spanish-speaking countries to obtain their medical license to practice in California and provide care in medically underserved communities. “They bring language and cultural diversity, as well as different perspectives that lead to better treatment, not just

for immigrant patients, but also for all patients” in often overlooked areas of the state. Dr. Bholat spoke with *U Magazine* contributor Karen Stevens about “immigration's beneficial impact on health care” and “keys to serving a diverse community.”

## **What role do foreign-born providers play in today's health care workforce?**

**Dr. Michelle Anne Bholat:** They are filling a great need that will keep growing as the population ages. Nationwide, they make up about one-sixth of medical professionals. The numbers are even higher in California. In 2017, they made up 36 percent of physicians, 35 percent of registered nurses and 42 percent of nursing, psychiatric and home health aides. Even with such a strong presence, we have to raise representation in certain areas. One reason we started the IMG program is that we realized 38-to-39 percent of California's population is Hispanic, but the percentage of Hispanic physicians in California is small; it is now about 6 percent.



Dr. Michelle Anne Bholat.

Photos: Jessica Pons

### **What are the benefits of a physician or other health care provider being able to communicate in a patient's language?**

**Dr. Bholat:** It improves outcomes and helps reduce errors of communication and misdiagnoses. It also helps patients feel more at ease and may encourage them to give more information and to follow their treatment plan. One thing we have come to emphasize in the relationship between the patient and the health care provider is health literacy, which means giving context, not just terminology. We want patients to understand what is going on. It really is about communication, and that involves more than just language. We can hire health care providers who speak Spanish, or we can teach them to speak Spanish, but that's not everything. We also must find the best method to communicate with each patient. It has to go in both directions — we don't want anyone to feel confused or degraded. Often, for instance, a patient will try to respond in English, but it is difficult for them, and that won't provide us, as physicians and health care providers, with the best information to assess their needs and provide the right help.

Of course, with so many different languages spoken in Los Angeles, and throughout California, we may not always have the right fit in terms of someone who can translate. We may have a Spanish-speaking patient or one who speaks Tagalog or Russian. So, we have to try to be aware of how people are feeling. I remember a Chinese couple for whom we had a Mandarin translator, but both the patient and his wife were looking quite quizzical, and I could tell something was wrong. We switched to a Cantonese translator, and the couple's expressions immediately changed to relief.

### **Establishing a cultural connection also is important.**

**Dr. Bholat:** Knowing a patient's culture helps us increase compliance and decrease emergency room visits. It also gives us the opportunity to provide the patient better quality of care and for them to have a better quality of life. I recall one woman who came in with a horrible infection. She was undocumented and had undiagnosed diabetes — she had no idea she had it. Every time the nurse was going to give her insulin, the family said, "No, it's very dangerous."

"One reason we started the IMG program is that we realized 38-to-39 percent of California's population is Hispanic, but the percentage of Hispanic physicians in California is small; it is now about 6 percent."

“At UCLA, we are a melting pot, and you can see the strength of our diversity at work throughout our system, from physicians to residents and fellows to nurses and staff.”

Fortunately, I know that in Mexico there are certain cultural beliefs about insulin, so we were able to address those and make her comfortable enough to take it. Sometimes, families have many decision-makers and there’s a pecking order. A study of cultural anthropology must take place at the bedside. Who is going to speak on behalf of the patient if he or she can’t speak for themselves? As a physician, I always have to be aware of not only what the patient is doing, but also what I am doing. For example, if I am seeing someone from Cambodia, do I smile? Do I look stern? How does the family expect me to behave? These are things we have to be cognizant of, so people will participate in their treatment.

**How have international providers at UCLA made a difference?**

**Dr. Bholat:** At UCLA, we are a melting pot, and you can see the strength of our diversity at work throughout our system, from physicians to residents and fellows to nurses and staff. Being able to meet the language and cultural needs of our patients has been wonderful. I recently was on inpatient service, and one of the doctors said she could speak Spanish but not well enough to communicate with a patient, so she had the chief resident, who is a native Spanish speaker, join her. They were able to get a better differential diagnosis and better treatment.

**Let’s talk about the IMG program.**

**Dr. Bholat:** Since its inception in 2007, the IMG program has graduated 140 family physicians,

and those physicians have increased access to care by more than 1.5 million encounters. Dr. Patrick T. Dowling, the chair of family medicine, and I started the program because we wanted to increase the number of bilingual and bicultural physicians who could serve the Hispanic community. We also wanted to stop “brain waste.” Many medical school graduates from Latin America find it difficult to make the transition to practice here. They may experience financial difficulties or have trouble learning our system. We help physicians who trained in Latin America who are legal residents pass U.S. medical exams and obtain family medicine residencies. In return, they promise to practice in underserved areas in California for at least two years. These are smart, motivated people. There is some bias that foreign-trained doctors are not as good as those trained in the U.S., but that is changing. The physicians who come through our program are sought after.

**You have said that you understand the struggles that immigrants face because you also had to overcome challenges to become a doctor.**

**Dr. Bholat:** I’m a Latina from Los Angeles. My grandparents came from the Aguascalientes region of Mexico. From a very early age, I wanted to be a doctor. I figured I could do it in spite of the fact that no one in my family had even been to college. When I was about 16, I wrote to UCLA and said I would like to apply to medical school. They sent a brochure and told me what I had to do. I thought maybe I could cobble together my education and do it.



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“There is some bias that foreign-trained doctors are not as good as those trained in the U.S., but that is changing. The physicians who come through our program are sought after.”

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I say “cobble” because I was a teen mom, and in my family, education was valued, but hard work and getting a paycheck were probably more important. There were times when it was difficult, but my husband, who is an immigrant from Myanmar, told me I should keep going, and he helped by taking care of our family. I went to Cal State Long Beach and then to medical school at UC Irvine. When I got to medical school, I realized that I was very different from my classmates because of my age and experiences. All that I went through to get to this place has led me to value diversity in ways that are personal.

**When you think about immigration and health care, what concerns you?**

**Dr. Bholat:** The contributions that immigrants make in medicine, science and technology are vast. But current immigration policies create an environment in which people don’t feel welcomed and don’t want to come. I fear that will set us back an untold number of years in regard to health care delivery in this country. I am proud to be a member of the UCLA Advisory Council on Immigration Policy. We celebrate our DACA (Deferred Action for Childhood Arrivals) students. I am fortunate to have in my own department a former DACA student, who now is a faculty member. Current national policies also affect patients — those who are here legally and those who are not. People may forgo care out of fear about what may happen to them or their relatives. By not seeking treatment, they may end up with more serious conditions that could cost lives or more money to the health care system.

We have to make sure everyone has access to things like preventive care, including something as simple as a vaccine. In terms of what do I wish for in the future, the International Medical Graduate Program is a prototype of a solution that could be replicated elsewhere. It also would be great for our medical school students to exchange ideas with students in, say, Mexico. I am very proud of our ambulatory care nursing program, where we have helped a diverse group of individuals become medical assistants at UCLA Health. I would like to see us develop a program for home health aides, many of whom are immigrants.

**The demand for care in such areas will continue to grow.**

There are people who complain that immigrants take up resources. But it likely will be immigrants who will be taking care of them when they are aging or hurt or will be taking care of their mothers and fathers as they grow older. Immigrants are primary care doctors, specialists, nurses, aides and other providers who fill very important roles in our health care system. They also are doing tremendous research. One study shows that more than 40 percent of researchers at our top cancer centers come from other countries. We should remember that we do better with diversity. We can learn from one another. We are all in this together.

“Since its inception in 2007, the IMG program has graduated 140 family physicians, and those physicians have increased access to care by more than 1.5 million encounters.”



For more information about the UCLA International Medical Graduate Program, go to: [uclahealth.org/family-medicine/img-program](https://uclahealth.org/family-medicine/img-program)

# Truth Seeker

**Heather Christofk, PhD**  
**Associate Professor, Biological Chemistry**

ILLUSTRATIONS BY DIETER BRAUN



Metabolism, Dr. Heather Christofk says, plays a role in everything, from the normal development of cells to diseases like cancer and infection. Thus, understanding how metabolism is regulated can influence our understanding of normal health and disease. In the case of tumors, understanding how tumor metabolism contributes to cancer growth and spread in patients can lead the way to new therapies.

Dr. Christofk steps into the *U* Magazine spotlight

## When did you first start to think seriously about science?

I've always been interested in nature. As a kid, we had horses and goats and chickens and ducks, along with cats and dogs. And each spring, we had ducklings and baby chicks and kittens, and I remember being very interested and always involved in the process. I entered college undeclared, but in my first year, I gravitated toward the sciences when I realized that in math and science, unlike in the social sciences, there are clear and true answers. That appealed to me. I like seeking truth.

## Where are you happiest?

When I am surrounded by nature. I love going on hikes with my dog and with my family and friends. And I love being in the snow.

## What has been your finest achievement?

Building my lab. I am very proud of the culture of the lab. Our lab is very inclusive and open-minded and creative. I am proud of the scientific discoveries we've made and are working on right now, and I'm hopeful that our best scientific discoveries are still ahead of us.

## What characteristic most defines you?

Open-mindedness. I always strive to listen to everybody and to be open to unexpected results and to pursue new directions if that's where our results take us. I think that my open-mindedness has actually shaped my lab; we wound up studying metabolism in many different contexts, in cancer and in stem cells and in

virus infection, largely because of our open-mindedness to how metabolism might be regulated differently and contribute in different ways in different systems.

## Who is your science hero?

I have so many, but one of my science heroes is my PhD mentor, Lew Cantley. He has an unending and contagious love of science and scientific discovery — a real joy for science and discovery.

## What is your motto?

If I had a motto, it would be, I have the choice to be where I'm at.

## What are the qualities of a great scientist?

A great scientist is creative and objective and has perseverance, excellent communication skills and unending curiosity.

## What do you value most in your colleagues?

The sense of community. I have become friends with many of my colleagues through open sharing of ideas and willingness to collaborate on new ideas.

## What is your greatest virtue?

Perhaps my optimism. I am always an optimistic person. I choose to see the best in people and hope for the best in the future.

## What is your greatest fault?

My terrible memory, unfortunately.



### Who do you most admire?

All of the women scientists who came before me. They often worked as scientists in a much more challenging environment than I have, and they did it because they loved science and loved scientific discovery and really paved the way for a better situation for female scientists today. I am very grateful to them.

### When don't you think about science?

In the mornings, I'm thinking about my children and getting them out the door for school, and in the evenings, when I'm with them again, I'm asking them about their day at school and what's coming up. I don't think about science at all in those moments. I also love reading about all sorts of things unrelated to science. I think taking a break from science enables me to bring my thoughts back to science with fresh eyes.

### If not a scientist, what would you be?

A venture capitalist, because I could still have a role in guiding the development of new medicines and new technologies to help people.

### What is your most treasured possession?

Time. I have limited time, being a working mom and having big aspirations for my research.

### What has been your biggest aha! moment?

My biggest aha! moment came while sitting in terrible traffic on the 405, and I realized that our work on how viruses change metabolism can actually be really informative for our cancer research. Some of our knowledge of oncogenes and tumor-suppressor genes, the genes that, when mutated, cause cancer, came from early studies on viruses and how they coopt genes in cells to propagate themselves. And so I had this aha! moment on the 405 realizing that how viruses change metabolism is going to be very similar to how cancer cells change metabolism. It has turned out to be a very powerful approach for my lab.

### Where does your inspiration come from?

Much of it comes from my curiosity about how things work and from my joy of scientific discovery and figuring things out. But another part of my inspiration comes from being exposed to tragedy through illness. When I was a kid, a friend of mine died of brain cancer when we were only 8 years old. It is meaningful for me to do cancer research in my lab now because of that experience.

### What is the best moment in your day?

Hugging my kids every morning is definitely the best moment of the day. Nothing feels better than hugging your kids.

### What is your idea of happiness?

Being with family and friends surrounded by nature.

### What is your idea of misery?

Having a debilitating illness with no cure. My dad has ALS, and I've watched him struggle with it. While this has been difficult, it also has been a source of motivation for me, a reminder of how important our research is, along with the research of others.

### What music do you listen to while you work?

I don't listen to music while I work because I love music too much, and it's distracting to me.



# On the Road to Health Care Equality

By Dan Gordon • Illustration by Anna & Elena Balbusso

Many LGBTQ patients struggle to find sensitive and compassionate health care. UCLA is working to change that.

**F**rom their earliest childhood memories, Cyrus Dunham knew they weren't a girl. Assigned female at birth and given the first name Grace, Dunham — who now identifies as gender non-binary and prefers the pronouns they/them/their — grew up feeling like they were playing parts in a movie in order to fit in socially. “I tried really hard to perform girlhood, always with a big gap between my internal sense of self and my external sense of self,” Dunham says. The struggle weighed heavily on their mental health, and Dunham suffered from both anxiety and depression.

In Dunham's book *A Year Without a Name* (Little, Brown & Company), published in October 2019, they take readers along their path of self-discovery, a journey they started as Grace and ended as Cyrus. Dunham, 27, says a turning point came when they were in their early 20s and began meeting and making friends with individuals who had either transitioned or were identifying as non-binary. “It was a massive relief when I got to know people who, whether they were non-binary, trans men or trans women, were making the choice to reject the categories they had been placed in — to know it didn't have to be that way,” Dunham says.

That realization was liberating, but Dunham continued to reckon with their identity. Ultimately, they decided to undergo top surgery and hormone therapy. “While I still strongly feel neither category, woman or man, can totally hold me, I realized it was taking up so much space in my life to be dealing with this gender dysphoria, to not feel good in my body,” Dunham explains.

They also became more acutely aware of the limitations of the health care system in meeting the needs of people like them. The 2015 U.S. Transgender Survey, conducted by the National Center for Transgender Equality, found that one-third

of transgender individuals who saw a health care provider in the last year reported having at least one negative experience related to being transgender. Four years later, Dunham says, even in a region as diverse as Southern California, finding health care professionals who are knowledgeable about gender diversity and gender health can be challenging.

“I have so many friends who have gone to doctors and been asked, ‘How do you know you're trans? Are you sure?’” Dunham says. “Even if doctors are well-meaning, there is little fluency, and it can feel exhausting to think about having to do that basic education. I think that leads a lot of trans people to avoid dealing with the medical system as much as they can. If you get sick, you might avoid going to the drop-in clinic, because you never know whom you're going to get or how you will be treated.”

These experiences are not unique. For many LGBTQ individuals, health care settings have, at one time or another, felt less than welcoming. In 2010, Lambda Legal published *When Health Care Isn't Caring*, a landmark report that was the first to examine barriers to health care among LGBTQ and HIV-positive communities on a national scale. More than half of all respondents said they had experienced at least one of the following from a health care professional: refusing to touch them or using excessive precautions; blaming them for their health status; using harsh or abusive language; being physically rough or abusive; or simply refusing them care. And, despite substantial progress over this decade in societal attitudes toward LGBTQ individuals, such experiences remain anything but rare, says Tari Hanneman, director of the Health Equality Project for the Human Rights Campaign Foundation, the education arm of the nation's largest civil rights organization advocating for LGBTQ equality.

“Discrimination is still a huge issue in LGBTQ care, and, unfortunately, when people face discrimination or hear about discrimination against others, they’re more likely to avoid seeking care.”

“Discrimination is still a huge issue in LGBTQ care, and, unfortunately, when people face discrimination or hear about discrimination against others, they’re more likely to avoid seeking care,” Hanneman says.

People who are transgender or gender diverse face particularly high levels of discrimination, Hanneman notes. Even when providers are well-intentioned, they often still have a lack of understanding that can lead to both insensitive conversations and poor care.

### AMONG INDIVIDUALS WHO IDENTIFY AS TRANSGENDER OR GENDER DIVERSE, NEGATIVE EXPERIENCES are all too common.

“Many people have stories about providers or institutions that are ignorant, in large part because there hasn’t been much education of health care providers about gender transition or about general health care delivered through the lens of a person’s gender experience,” says Amy K. Weimer, MD, assistant clinical professor of medicine and an internal medicine and pediatrics specialist who co-directs the UCLA Gender Health Program with Mark Litwin, MD (FEL ’93), chair of the UCLA Department of Urology. “Many patients also feel actively discriminated against or are reluctant to speak about their gender status because of discomfort.” Transgender patients have complained that too often providers will make gender the exclusive focus of a visit, even when they are seeking care for an unrelated health issue, Dr. Weimer adds.

Because medical education traditionally has spent little, if any, time on transgender health care, many providers are left uncertain about basic issues, such as how medical gender transition affects routine patient care or what questions are important to ask and what questions are inappropriate. “As a group, physicians are very uncomfortable in situations where we feel we might make a mistake,” Dr. Weimer says. “When I’m teaching students and residents about caring for this population, the biggest barrier I encounter is the fear that they’re going to say something insensitive. If we get that kind of feedback, we need to take responsibility and then learn from it, apologize and move forward.”

Dr. Weimer points out that when patients are steering clear of health care settings, it means they aren’t obtaining vital preventive care services, such as cancer screenings and vaccinations, and they may be more likely to engage in unhealthy behaviors.

Transgender individuals who feel uncomfortable in the health care environment might delay seeking hormones, surgeries and other gender-affirming services, which can contribute to poor mental health outcomes. “We know that people who are prevented from expressing their gender in what feels to be an authentic way have catastrophically high rates of depression and suicidality,” Dr. Weimer says.

**UCLA HEALTH HAS UNDERTAKEN PROACTIVE STEPS** to right these historic and current shortcomings and ensure equitable, affirming and supportive environments for LGBTQ patients and their families. The effort has been recognized by the Human Rights Campaign Foundation, which, in its 2019 Healthcare Equality Indexes, awarded UCLA Health’s four hospitals — Ronald Reagan UCLA Medical Center, UCLA Mattel Children’s Hospital, Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA and UCLA Medical Center, Santa Monica — the distinction of “LGBTQ Healthcare Equality Leader.” (UCLA Health and its hospitals have received the distinction every year since it was inaugurated in 2014.)

Drs. Weimer and Litwin launched the UCLA Gender Health Program in 2016 after Dr. Weimer heard compelling stories about the need for such a program from patients who were either transgender or had transgender family members. “I kept hearing that they were grateful to receive health care in a place where they felt comfortable,” she says. “It became clear that this needed to be formalized, so that people could find the care they need.”

At the program’s flagship primary care clinic in Santa Monica, children, adolescents and adults who are transgender or gender diverse receive primary care and chronic disease management, as well as care specific to their gender or gender-transition issues, in an environment where health care providers and staff are knowledgeable and sensitive to patients’ needs. (Transgender generally refers to people whose gender identity is different from the sex they were assigned at birth; gender diverse recognizes the growing number of people who don’t identify as strictly male or female, instead adopting such terms as gender non-binary, gender queer or gender fluid.)

The program is rooted in primary care, providing comprehensive services, including vaccinations, health-risk assessments, disease screenings, nutrition counseling and chronic-disease



Dr. Amy Weimer: "As a group, physicians are very uncomfortable in situations where we feel we might make a mistake. When I'm teaching students and residents about caring for this population, the biggest barrier I encounter is the fear that they're going to say something insensitive."

Photo: Ann Johansson

management, as well as health services specific to the needs of transgender and gender-diverse patients. The center's physicians also coordinate care with a network of UCLA surgeons, obstetrician/gynecologists, urologists, endocrinologists and behavioral-health professionals as appropriate. "In the past, it's been on patients to do all of the footwork in trying to find providers who specialize in the services they need," Dr. Weimer says. "Our goal is to offer as much as we can within the walls of UCLA, so that we can help patients navigate their care." Gender-specific services include hormone

management; sexual-health services, including reproductive and fertility counseling; counseling on gender-transition issues, whether it's specific treatment needs or issues such as depression or anxiety; and gender-affirming surgeries and procedures that modify the body to align more closely with the patient's gender identity.

**AT THE UCLA CENTER FOR CLINICAL AIDS, RESEARCH AND EDUCATION (CARE)**, which provides state-of-the-art care to people who are HIV-positive or have AIDS, the vast majority of

"We know that people who are prevented from expressing their gender in what feels to be an authentic way have catastrophically high rates of depression and suicidality."



Dr. Emery H. Chang: “Even though society is more accepting today, many people still go through an internal struggle in the coming-out process, and so it’s important that they feel comfortable with their physician.”

Photo: Ann Johansson

patients are gay and bisexual men, says Emery H. Chang, MD, assistant clinical professor of medicine and an internal medicine- and pediatrics physician and HIV specialist at the center.

The enduring stigma around HIV and LGBTQ issues results in many patients not feeling comfortable disclosing information that would be important to their care, Dr. Chang says. He notes that as recently as two years ago, he was at another federally qualified health center where

he discovered that a woman, after waiting hours to see a doctor about an abnormal Pap test, was ultimately turned away when it was learned she was HIV-positive. “There still are cases of outright, unethical discrimination,” Dr. Chang says. “And there are many other instances where LGBTQ people are not being turned away, but they are not receiving competent care.”

That sub-optimal care can manifest in a number of ways, Dr. Chang explains. One couple, who had

# Learning to Listen



Masumi Umezaki stood before a group of UCLA medical students assembled in the auditorium of Geffen Hall, her voice quavering slightly as she recounted her journey of self-discovery as a transgender woman and the interactions with physicians that ensued. The first time she brought up her gender dysphoria in a health care setting had been disastrous. In the course of a routine physical, the doctor asked Umezaki if she had any health complaints. “I told him I felt trapped in my body,” recalled Umezaki, one of eight transgender individuals who spoke with students as part of the David Geffen School of Medicine at UCLA’s Caring for the Transgender Community module. “His face soured. He said, ‘That sounds like a psychological issue. What do you want from me?’ As soon as I left, I broke down and cried.”

Umezaki found a new physician, but when she mentioned wanting to begin hormone therapy, the response was terse: “I can’t help you, but I wish you luck.”

The third time was different. Asked if she had any health complaints, Umezaki mentioned not only her gender dysphoria, but also that she was suicidal, not sleeping, barely eating and having panic attacks. “Oh my god, we need to get you some help,” the doctor said. He spent the next half hour sitting with Umezaki as she sobbed. After acknowledging that he lacked experience with the type of care she needed, he vowed that if he couldn’t find someone who could help, he would learn himself.

Umezaki looked out at the students. “If someone comes out to you, consider that you might be the first person who has ever listened,” she said. “This doctor had no more knowledge about trans care than the other two, but he listened, and he saved my life.”

Few practicing physicians are well-versed in the lived experiences of their transgender patients, and fewer still have been educated during their medical training about transgender health care needs. UCLA was among the first to address that shortcoming, when, in 2015, it added Caring for the Transgender Community to the second-year doctoring course, which covers non-scientific aspects of medical practice — from effectively communicating with patients to addressing social determinants of health such as poverty, education and discrimination.

Arthur G. Gomez, MD ’86 (RES ’89, FEL ’90), professor of clinical medicine and director of the second-year doctoring program, was inspired to add the module by his experience with a longtime patient, Larry, “a gruff Marine who had lived a hyper-masculine life and told off-color jokes.”

Gradually, Dr. Gomez recalls, Larry began to offer clues — a feminine earring, painted toenails — suggesting he might be concealing his identity. “I teach my students that if you observe something that might be relevant, you should ask, so I did,” Dr. Gomez says. “That’s when Larry introduced me to Linda, the woman she had been her whole life.”

Working within the VA health care system, Dr. Gomez advocated for Linda, who had advanced lung disease, to obtain gender-affirming hormone therapy and surgery before her death.

This year’s Caring for the Transgender Community module began with a lecture by Amy K. Weimer, MD, co-director of the UCLA Gender Health Program. In addition to discussing gender-specific health issues and the disproportionate risk faced by transgender and gender-nonconforming patients — often related to their societal marginalization — Dr. Weimer advised the students on their interactions with a population that is too often treated poorly in health care settings. “We are raised in a binary society and will make mistakes,” Dr. Weimer said. “[When that happens] own it, apologize and move on.”

The lecture was followed by a panel discussion. In an effort to capture the diversity of experiences among the transgender population, Dr. Gomez and his doctoring colleagues have partnered with Transgender Talent, a talent management and production company for transgender performers and artists, to bring in transgender individuals to discuss their life experiences and interactions with health care providers, as well as to answer students’ questions.

“This module is a huge help to destigmatize the trans community for doctors,” says Ann Thomas, who founded Transgender Talent and presented as a member of the panel. “Too often, much of society confuses us with drag queens and assumes we are all sex workers and have AIDS. That’s far from the truth.”

At the close of the module, student Kevin Ding reflected on what he had learned. “It hadn’t dawned on me how much trust someone who is transgender is putting in you and the power the physician has to either make them feel like a million bucks or tear down their world with just a few words,” he said. “That’s a privilege but also very sobering. And it was a reminder of why I decided to go into medicine — to treat everyone, regardless of their identity, with unconditional love.”

— Dan Gordon



Dr. Natalia Ramos: “Changes that the health system is prioritizing — including correct pronouns and names, making sure staff and providers avoid stereotyping and that forms are not binary but open and inclusive — send messages to patients that go a long way in determining whether or not a patient will access care.”

Photo: Ann Johansson

“Numerous studies have found that sexual- and gender-minority youth are at elevated risk for poor outcomes, such as depression, suicidality, substance use and trauma.”

just moved to a college town in the Midwest and sought his advice on finding a new primary care provider, complained that they needed to “train” their new physician on the basics of pre-exposure prophylaxis (PrEP) therapy. Dr. Chang has heard from HIV-positive patients about doctors who made assumptions about their lifestyle or blamed them for their disease status. In some cases, he says, patients who have experienced homophobia and discrimination might feel reluctant to share relevant information, such as their sexual history, potentially compromising the ability of an otherwise competent and well-meaning physician to provide important counseling and testing.

At CARE and elsewhere, Dr. Chang says, UCLA is taking extra measures to ensure that interactions with LGBTQ patients at both the staff and provider levels are inclusive and welcoming. In the CARE hiring process, he notes, candidates are vetted to ensure that they are not only well-versed in issues of importance to their LGBTQ patients, but also able to connect in a way that allows them to provide compassionate services. “When patients see these efforts,” Dr. Chang says, “it sets a tone that not only improves their experience, but also allows us to deliver higher-quality care.”

He offers as an example a recent visit from a new patient, a middle-aged man who said he

had been looking for a gay physician, then went on to disclose for the first time that he was gay. “He said it was so hard to say those words out loud to someone, especially someone he had never met,” Dr. Chang recalls. “Even though society is more accepting today, many people still go through an internal struggle in the coming-out process, and so it’s important that they feel comfortable with their physician.”

Dr. Chang notes that throughout UCLA Health, efforts are being made to be more inclusive, even in ways that are seemingly minor but that send an important message — for example, in both forms and interactions, not assuming that when patients indicate they are married it necessarily means that spouse is an opposite-sex person.

“The environment you create for your patients is extremely important,” says Natalia Ramos, MD (RES ’15, FEL ’17), MPH, assistant clinical professor of psychiatry & biobehavioral sciences and a UCLA child, adolescent and adult psychiatrist. “Changes that the health system is prioritizing — including correct pronouns and names, making sure staff and providers avoid stereotyping and that forms are not binary but open and inclusive — send messages to patients that go a long way in determining whether or not a patient will access care.”

Dr. Ramos directs the recently launched EMPWR (“empower”) Program, which aims to provide a safe, open environment for LGBTQ youth with mental health concerns. Numerous studies have found that sexual- and gender-minority youth are at elevated risk for poor outcomes, such as depression, suicidality, substance use and trauma. “Often, this is a cumulative effect of various stressors — discrimination, harassment, micro-aggression, family rejection, issues with peers and not having supportive environments,” Dr. Ramos says. EMPWR delivers a range of evidence-based services through the lens of understanding minority stress and an affirmative model — the belief that any expression of gender identity or sexual orientation is normative. A teen resilience group teaches cognitive behavioral therapy skills that have been shown to help with mood, emotional regulation and finding positive supports.

“LGBTQ populations, both adults and children, are frequently underserved,” Dr. Ramos says. “Studies show that LGBTQ individuals face more

barriers in seeking mental as well as physical health care. By improving training and services, as well as awareness and visibility in the community, UCLA Health is sending the message that we are welcoming and inclusive and that we have specialists and services built around the needs of LGBTQ patients.”

**AS PART OF AN EFFORT TO CREATE A NATIONAL STANDARD FOR LGBTQ HEALTH CARE**, the Human Rights Campaign Foundation, in partnership with GLMA: Health Professionals Advancing LGBTQ Equality (previously known as the Gay & Lesbian Medical Association), created the Healthcare Equality Index (HEI). The HEI aims to establish standards particularly around policies and practices in hospitals. “One of the benefits of this is that we’re taking the temperature of organizations around the country and then sharing results and best practices that institutions can use as a roadmap to improve their LGBTQ care and policies,” says Hanneman, the HEI’s author.

Hanneman believes that a top priority for health care institutions should be to ensure that staff receive appropriate training in LGBTQ-specific care. “Most physicians get very little education about LGBTQ care in medical school, though that’s beginning to change,” she says. “And beyond the health care providers, the training needs to cover everyone in the system, from the front-line staff to the cafeteria workers and security guards.”

That imperative is a core tenet of the UCLA Gender Health Program, whose entire team, including office staff, is trained on an ongoing basis to ensure a respectful environment. “We want to earn the trust of our patients, as well as to educate providers about transgender and gender-diversity issues to remove the mystery, so everyone can focus on providing the best individualized care for each patient,” Dr. Weimer says.

**AFTER DUNHAM REACHED THEIR DECISION TO MEDICALLY TRANSITION**, they became frustrated with the shortage of health care professionals available to provide the care. Even in Los Angeles, finding a clinic that was experienced in working with trans people proved difficult, and when they did find one, there was always a long

waiting list. Dunham was feeling frustrated when a friend told them about their positive experience with the UCLA Gender Health Program. Dunham began seeing Dr. Weimer for hormone treatment and primary care in April 2018.

Dunham was immediately struck by the warmth and sensitivity they encountered. “Immediately, they asked me for my pronoun preferences, what names I preferred to be called and how I identified,” Dunham says. “I felt able to explain that I was making the choice to start hormones but didn’t necessarily identify as a man and that I wanted to take it slow and see how things felt. UCLA is really far along with understanding what it means to work with people who don’t identify as men or women. Dr. Weimer always answers my questions from a place of understanding. I’ve never felt like I have to explain things to her.”

Starting on the hormone therapy had the effect of controlling Dunham’s anxiety in a way that no medication had before. “Whether it was the testosterone itself or the fact that I was finally ready to let myself be the way I wanted to be, I don’t know, but it has been profound in how it has affected my mental health,” says Dunham, who says they have referred a number of their friends to the UCLA Gender Health Program.

Before becoming a patient at UCLA, Dunham says, they wouldn’t disclose their gender identity to their health care providers. “My body wasn’t visibly trans yet, and I didn’t know how to have that conversation,” Dunham says. “Now that I look to the world like a man and have what is considered female genitalia, it’s scary to think about going to any doctor who isn’t fluent in trans health care. I’m grateful that UCLA has these doctors, where if anything comes up, I don’t have to worry about going in for treatment.”

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



For more information about LGBTQ health care at UCLA, go to : [uclahealth.org/lgbtq](http://uclahealth.org/lgbtq)

“We want to earn the trust of our patients, as well as to educate providers about transgender and gender-diversity issues to remove the mystery, so everyone can focus on providing the best individualized care for each patient.”

# Sherm

By Claire Panosian Dunavan, MD

As the 100th birthday of Dr. Sherman M. Mellinkoff — the second dean of the UCLA School of Medicine — approaches, a colleague and friend shares memories of the man who guided a young institution to become a world leader in medical education and research.

*“From as early as I can remember, I remember him sitting in his chair at night... He was in that chair with a book and a light, and he was reading. And on the weekends, he was in that chair reading.*

*“In the living room, there were also two wooden stands with dictionaries permanently open. And those were like holy books, you know? He’d often look things up in the dictionaries or the encyclopedia and get the facts just right.*

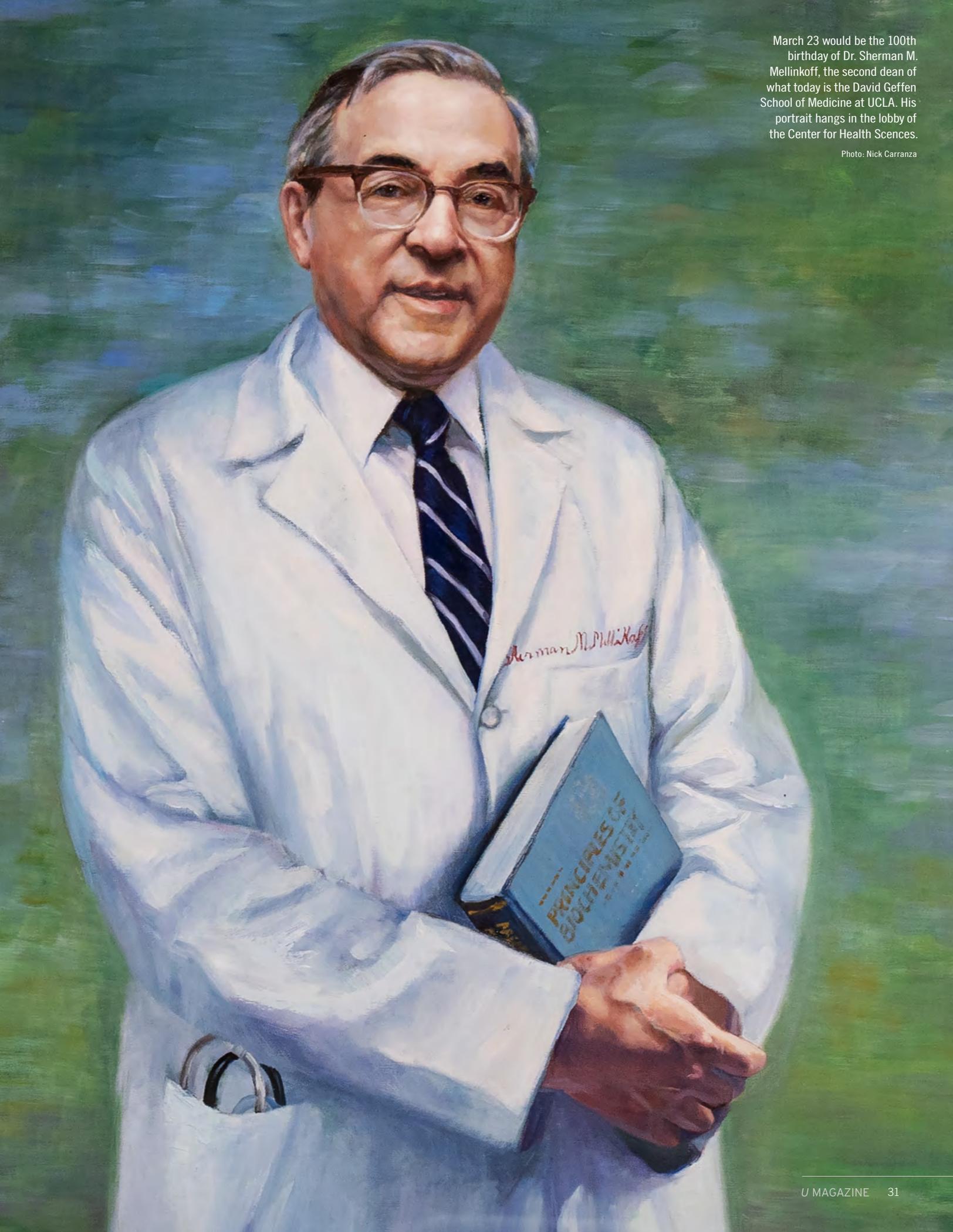
*“I took it for granted, but he always had a quote for every situation from the Bible or Shakespeare, or from history or politics or literature. When you’re little, you think: Well, every kid grows up this way.*

*“What I know now is that he loved it. That’s all — he just loved it.”*

— Albert Mellinkoff, December 2018

In my home office in Pasadena, a pleated, cardboard file bulges with UCLA paraphernalia, including dozens of letters from Sherman M. Mellinkoff, MD, the second dean of the UCLA School of Medicine. For 24 years, from 1962 to 1986, he led the medical school with wisdom, kindness and a verve that was unmistakably “Sherm.” In 1987, one year after Dr. Mellinkoff retired as dean, I arrived on campus. By then, I was also a medical writer at Lifetime TV, a swerve that was totally unplanned.





March 23 would be the 100th birthday of Dr. Sherman M. Mellinkoff, the second dean of what today is the David Geffen School of Medicine at UCLA. His portrait hangs in the lobby of the Center for Health Sciences.

Photo: Nick Carranza

**This Page:** Dean Mellinkoff and son Albert at Lake Tahoe in 1962 and with wife June in London in 1973, atop a correspondence with the author.

**Opposite Page:** Dean Mellinkoff with Albert shortly after his birth on November 18, 1958, the 14th anniversary of June and Dr. Mellinkoff's wedding, and a copy of a book by the cartoonist Don Marquis, for whom both Dean Mellinkoff and the author shared an affection.

Images: (photos) Courtesy of the Mellinkoff Family; (letter and book) Courtesy of Dr. Claire Panosian Dunavan

By 1990, Sherm and I were friends — another unplanned-but-wonderful serendipity.

Now, 34 years have passed since Sherm went emeritus, and almost four years have passed since he died, at the age of 96. As we close in on this year's centenary of his birth, I've started to wonder, what exactly sparked our rapport? Yes, we had overlapping history: families rooted in Los Angeles, the same alma mater (Stanford), witnessing UCLA Medical Center's birth.

But here's the real answer, as I see it: What cemented my friendship with Sherm was a shared love of literature and human story. The two of us also shared a curious path. While still in high school, we both were drawn to everything *but* science, yet somehow got caught in medicine's spell.

If I had taped my conversations with Sherm, I could write a book. But, of course, I never recorded my friend and mentor — nor do I plan to write that book. So here, instead, is a nostalgic tribute laced with words straight from the source.

**ALBERT MELLINKOFF, SHERM AND JUNE'S SON,** is a former New York-based actor who now

practices as a clinical psychologist. One day, while he was visiting our house, I asked Albert if he could recall one of his father's favorite quotes. Albert laughed, then quickly recited, "How sharp as the serpent's tooth it is to have a thankless child!" from *King Lear*, while searching for something more elusive. "Into the lives of all men, a little folly now and then?" Does that ring a bell for you?" he asked. Indeed it did. Sherm was formidably intellectual, but he also loved humor.

Need more proof? Soon after Sherm and I got to talking, we discovered our joint affinity for Walt Kelly, the creator of the comic strip *Pogo*; James Thurber; Damon Runyon; and, my personal favorite, Don Marquis, a popular 1930s columnist who channeled a literary cockroach named Archy who communicated by nightly jumping on the keys of a typewriter belonging to a small-town reporter in Dobbs Ferry, New York. This explains one of my early notes to Sherm, which included a classic Archy riff ("i have noticed that when chickens quit



quarreling over their food that there is often enough for all of them i wonder if it might not be the same with the human race”), along with some trivia. Sherm wrote back: “Thank you for sharing with me Damon Runyon’s birthday — not to be compared with Beethoven’s [they fell on the same date] but still evoking memories. ... The delightful quotation from Don Marquis ... had long disappeared from my declining temporal lobes, but it is particularly handy to have now when it applies so poignantly to so many places on earth.”

Newspaper scribes aside, Mark Twain was Sherm’s all-time favorite pundit and writer, bar none, with the possible exception of Anton Chekhov. But what may surprise even Sherm’s closest friends was his favorite title by Twain, namely, a late, funny-yet-dark work serialized in *The Century Magazine* in 1893 and published as a novel the following year. Naturally, as soon as Sherm recommended *Pudd’n’head Wilson*, I quickly read and admired its striking weave of farce, dastardly deeds and pointed messages about race and identity. Seen through modern eyes, this story of a master and slave switched at birth also evokes what now are called “social determinants of health.” Simply put, the book spoke deeply both to Sherm’s wit and his strong sense of fairness.

Which brings me to something biographical. While living in Baltimore in the mid-1940s and early-1950s, Sherm himself witnessed racism countered by valor and grace. One of his all-time heroes at Johns Hopkins Hospital (where, after serving two years in the U.S. Army Medical Corps, he completed his residency and was chief resident), was the former janitor Vivien Thomas, an African American who was, by then, surgeon Alfred Blalock’s indispensable associate. After decades of brilliant innovation, Thomas ultimately earned an honorary doctorate for the many contributions he made to Dr. Blalock’s pioneering operations for infants born with congenital heart disease.

Moving from a provocative book by Twain to a discussion of modern medical history and social

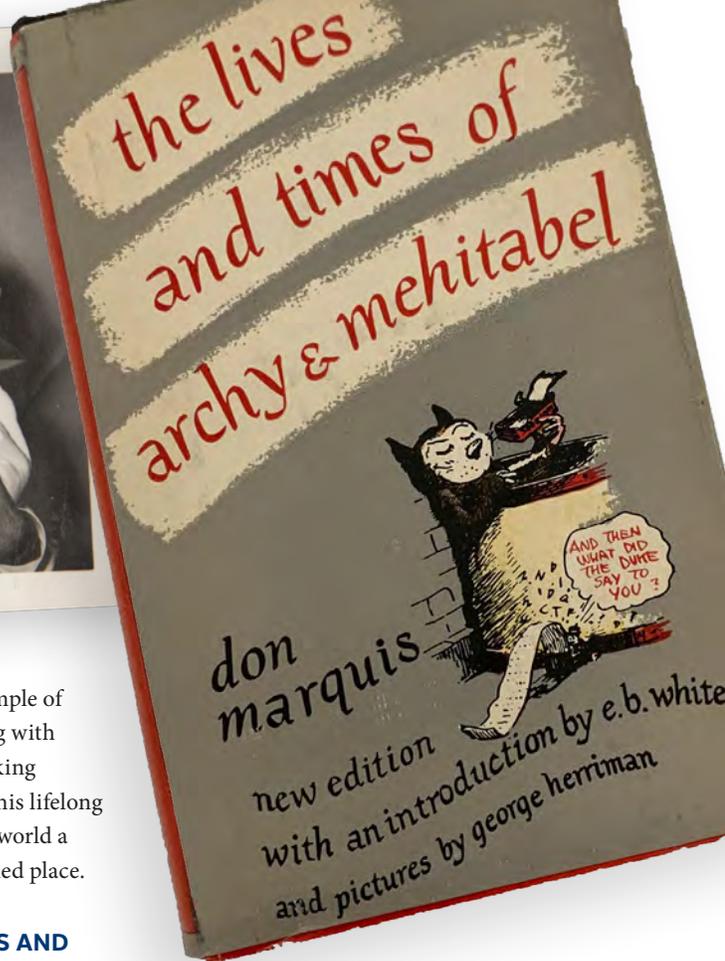


justice is just one example of the richness of visiting with Sherm, whose unblinking realism never sapped his lifelong zeal to help make the world a better, more enlightened place.

**CLOSE YOUR EYES AND PICTURE A SUITE IN 200 MEDICAL PLAZA CIRCA 2000.**

On its counters are charts and articles, a printer, a coffee pot and condiments, and at its center table a rotating throng of doctors, nurses and staff. On this Thursday, however, a close-knit medical band including Sherm has gathered to discuss perplexing woes from high-spiking fevers to sudden attacks of incapacitating pain to ominously elevated levels of urinary protein. The mysterious disease in the clinic’s cross-hairs on this day? Familial Mediterranean fever (FMF). Sherm loved the Sherlock Holmes-ian side of medicine. And never were his own skills of detection more fully revealed than in the 1950s, when he identified UCLA’s first FMF patient. It started when our future dean, then a young gastroenterologist, arrived at UCLA’s fledgling ER to settle a bet between a medical intern and a surgical resident. Did their 36-year-old patient truly have peritonitis or was he malingering?

As it turns out, neither was true. After Sherm spoke with the man, who, since childhood, had endured thousands of attacks of fever and pain, the words of a former professor echoed in his ear: “Nobody knows what this disease is, but in Lebanon, it is called the Armenian Disease.” Bottom line: Both trainees lost their wager, and the grateful patient recruited many more FMF sufferers to



Sherm loved the Sherlock Holmes-ian side of medicine. And never were his own skills of detection more fully revealed than in the 1950s, when he identified UCLA’s first FMF patient.



SHERMAN M. MELLINKOFF, MD  
1049 SELBY AVENUE  
LOS ANGELES, CALIFORNIA 90024-3105

July 5, 2010

Dear Claire,  
June and I are always cheered by your phone calls, letters and reports - all things reminding us of how to be a gifted writer. The exception.  
I find an expert in any science, who writes both for the public with the character-insight and, crisp style of the New England Journal reminded me of diagnosing this fascinating illness in regions where the fungus for at Hopkins was the first to be diagnosed with cocci, after a patient for a disorder she never had. Some had hemoptysis and never been out of the region to visit her cousin in less than 24 hours.  
The England Journal published her out of Massachusetts  
-OVER-



**Above:** Dr. Mellinkoff in 1963, one year into his position as dean of the UCLA School of Medicine (top) and in 1967 (bottom), perhaps at a school of medicine function. The handwritten note is one of the many correspondences shared between Dean Mellinkoff and the author.

**Opposite page:** Dean Mellinkoff's son Albert remembers his father as an avid reader in his favorite easy chair. The binoculars may have been from Dean Mellinkoff's time in the Army during the Korean War. At home, they were a treasured accompaniment during regular hikes. The book is a history of UCLA's school of medicine, published in 1992 and given by Dr. Mellinkoff to the author.

Images: (1963) David Geffen School of Medicine at UCLA Special Collections; (1967, sleeping and binoculars) Courtesy of the Mellinkoff Family; (letter and book) Courtesy of Dr. Claire Panosian Dunavan

UCLA, which soon excelled at treating the rare, genetic disorder.

More evidence of Sherm's love of medical detail and patient story can be found in sentences he wrote after reading one of my own "medical mysteries" published in Discover magazine. The disease it depicted was the inhaled fungal blight known as Valley fever.

"Your article about coccidiomycosis reminded me of the great difference between diagnosing the illness in California and recognizing it in regions where the fungus doesn't grow," Sherm neatly penned on a fine piece of stationery. "At Hopkins, a patient I helped care for was the first person on the Osler Service ever to be diagnosed with cocci. After she spent a bad year in a TB sanitarium for a cavity in the right upper lobe, severe hemoptysis led to her transfer to Hopkins. She had never been out of the Maryland-Virginia region except once, to visit her cousin in El Paso, Texas [another cocci-endemic locale] for less than 24 hours. Several years later, the *New England Journal [of Medicine]* published a topper: A patient who had

never left Massachusetts was, after long travail, found to have cocci. He was an avid stream-trout fisherman and used horsehair lures made in California." (In this case, the horsehairs themselves carried the fungal spores.)

Sadly, Sherm's years of face-to-face meetings with patients ended in 2006 after he fell while crossing his lawn to deliver some errant mail to a neighbor and suffered multiple injuries. There was, however, one silver lining for me: The many convalescent hours during which we co-wrote a treatise on lead that later was published in the medical journal *The Pharos*. In it, we spanned medical and industrial history, groundbreaking biochemical research and global policy. But, once again, as reflected Sherm's medical credo, our piece began with the story of a single, unforgettable character with cryptic symptoms:

*Some years ago, at a teaching conference in Long Beach, California, Dr. Mellinkoff discussed the case of a middle-aged Cambodian man who presented to the emergency room with severe*

episodic abdominal pain. Anyone could tell he was in agony from his facial expression and constant shifting motion. However, his physical examination showed no evidence of peritoneal irritation or bowel obstruction, nor did his radiographs or blood tests suggest any gastric, duodenal, pancreatic or biliary disorder. Even a porphyria test proved negative. Then, just as mysteriously as it had begun, the man's pain resolved, and he left the hospital, only to return weeks later in the same distressed state. This time, however, some of his red cells contained subtle blue inclusions. A bell rang, and a blood specimen was sent for a lead level. When it returned unequivocally high, discussions through a translator finally solved the mystery. Before arriving in the United States, while he was still living in a refugee camp, the patient had been charged with procuring alcohol for use in religious ceremonies. Being an enterprising fellow, he built a still from a car radiator and produced what was needed. Periodically, he also drank the spirits."

And thus another human riddle was solved and shared.

### ANY ARTICLE THAT TOUCHES ON SHERMAN MELLINKOFF'S LOVE OF LITERATURE

would be wanting if it did not mention Anton Chekhov, the Russian physician, author and playwright. Although never an academic luminary, even as a student, Chekhov excelled at listening to patients, and he understood how profoundly doctors impacted their lives. During his own far-too-brief life, Chekhov also was a noted humanitarian, caring for the poor and advancing public health until weeks before his death from tuberculosis at the age of 44.

Like Chekhov, Sherm mirrored truth, heart and compassion and shared generously, both in word and deed. In my personal archive, a final revealing excerpt can be found in a note he mailed not long after my mother's death. Did Sherm express similar thoughts to others over his long, expressive life? Of course he did. On the other hand, even now, reading his frank, empathetic message reminds me just how lucky I was to be his friend.

Dear Claire,

You mentioned that you were glad to have had June and me to hear your sad story. From our perspective, we felt honored that you trusted us to listen. No friendship is more fastened to trust than in the sharing of sorrow. Perhaps you remember a short story by Anton Chekhov in which the driver of a horse-drawn cab tries in vain to recount the loss of his wife and son and ends up telling his story to his horse!

June joins me in sending our love.

— Sherm

**Dr. Claire Panosian Dunavan** is a UCLA infectious diseases specialist and a medical writer. Her writing has been published in the Los Angeles Times, The New York Times, The Washington Post, Discover magazine and Scientific American, among others.

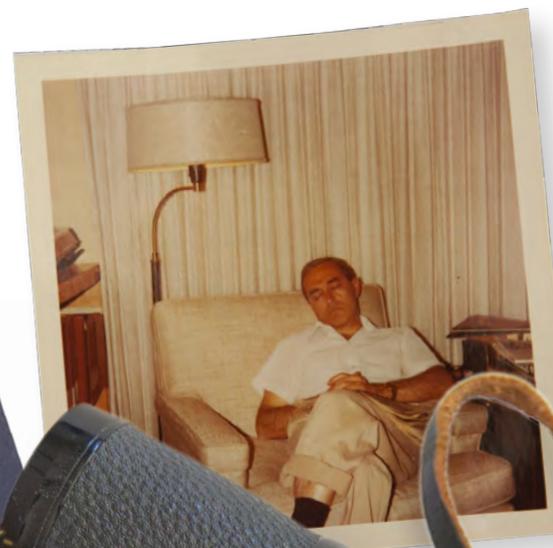


"The Lead Files: A Chronicle of Ignorance, Avarice, and Progress," *The Pharos*, Autumn 2007



To read an In Memoriam for Dr. Sherman M. Mellinkoff following his death in 2016, go to: [uclahealth.org/u-magazine/a-humble-leader](http://uclahealth.org/u-magazine/a-humble-leader)

Like Chekhov, Sherm mirrored truth, heart and compassion and shared generously, both in word and deed.



# Photo Synthesis

By Nancy Sokoler Steiner

Quincy Jones, his eyes closed, exudes a sense of calm and serenity. Sheryl Crow brings her hands together as if in prayer. Metallica drummer Lars Ulrich clasps his hands behind his head, his open mouth forming a perfect O.



Dr. Richard M. Ehrlich says that photographing iconic musical artists for his *Face the Music* project “was an incredibly fulfilling once-in-a-lifetime opportunity.”

Photo: Rebecca Sapp/Courtesy of the Recording Academy

These, and 38 other images of artists captured as they listened to their favorite music, are the work of UCLA physician and fine-art photographer Richard M. Ehrlich, MD. They were displayed at an exhibit, *Face the Music*, which ran for three months at the end of last year at the Grammy Museum in Los Angeles, and published in a book of the same name.

“Rick’s ability to convey emotion and music and how music is impactful on so many different levels encapsulates what we do here,” says Nicholas Vega, director of curatorial affairs for the Grammy Museum, during the show’s opening reception in September. “He’s got a great eye.”

This was not the first exhibit, nor photography book, for Dr. Ehrlich, whose day job is as a pediatric urologist. His photographs are in the permanent collections of 17 museums worldwide, including the J. Paul Getty Museum, Smithsonian National Museum of American History, Los Angeles County Museum of Art and the United States Holocaust Memorial Museum. Approximately 100 of his

donated works adorn the UCLA campus. One photograph displayed in UCLA’s Luskin Conference Center is of Royce Hall taken with a camera that was made in 1880. Another of Dr. Ehrlich’s pictures, of Powell Library, is a photomontage of 3,000 images from slides belonging to UCLA’s Department of Art History.

“Photography has sort of taken over my life,” Dr. Ehrlich says. “I think about taking pictures all the time.”

Dr. Ehrlich has published more than a dozen photography books on subjects as diverse as the sand dunes of Namibia, close-up studies of sculptural surfaces, impressionistic sunsets over the Pacific Ocean and artistic interpretations of radiological images. He spent two years with his cameras to chronicle the construction of Ronald Reagan UCLA Medical Center. The prestigious German fine-art publisher Steidl published *Face the Music*, and later this year it will release *Arolson Archives*, images of artifacts and vast caches of documents that make up the Holocaust archives at the International Tracing Service in Bad Arolson, Germany. Another book, *Faces of Promise*, features portraits of children with autism.

“I’m always looking for new things that haven’t been done before,” Dr. Ehrlich says. “Today, with the cell phone being so ubiquitous, everybody is a photographer. So to do something different is hard.”

Dr. Ehrlich pursued photography as a youth and had a dark room in his childhood home in Westchester, New York. But he gave up the pursuit to focus on baseball, at one time hoping to become a professional ball player. He returned to photography about 15 years ago, he says, “in a serious way, not just as a hobby. I said, ‘If I’m going to get back there, I’m not going to do it superficially. I’m going to do it really seriously, so I studied and I read and I went out and took a million photographs.’”

Capturing images of the 41 musicians and composers featured in *Face the Music* proved both gratifying and taxing. As a lover of music — jazz in particular — Dr. Ehrlich enjoyed meeting some of his favorite artists. Convincing managers to give access to their musician clients, however, often proved challenging. The endeavor took five years, and there were times when he considered quitting.

Highlights of the project included snagging Ringo Starr as a subject, photographing Renee Fleming in the former Manhattan studio of fashion photographer Irving Penn and spending a day with Dave Brubeck, who passed away several months later.

Dr. Ehrlich also found the artists' choices of music revealing. Each was asked to choose three songs to listen to as they were being photographed. The Who frontman Roger Daltrey chose Edith Piaf, country artist Rosanne Cash selected The Beatles, trumpeter and music producer Herb Alpert listened to Luciano Pavarotti and Esperanza Spalding was transported by Nina Simone.

"It was an incredibly fulfilling once-in-a-lifetime opportunity, personally and professionally, to capture some of the world's most iconic musicians while they listened to their favorite songs,"

Dr. Ehrlich says.

After completing his medical training in New York — MD and surgical residency at Cornell University Medical College and urology residency at Columbia Presbyterian Medical Center — Dr. Ehrlich served for two years as a major in the U.S. Air Force. In 1971, he joined the faculty of UCLA, where he performed the medical center's first pediatric laparoscopic procedure.

His most recent photography book, *Out of the Fire — Abstract Truth*, features images of patterns

formed on the sides of cars burned during the 2018 Woolsey Fire, which destroyed more than 1,600 structures and scorched 96,949 acres in the Santa Monica Mountains. A resident of Malibu, Dr. Ehrlich had to evacuate during the fires. When he finally was able to return to his home, which was spared, he was struck by the sight of the burnt cars.

Dr. Ehrlich says that medicine and photography both require skill, discipline and attention to detail. He recalls a specific instance when his two passions coalesced. "One day I went to the room of a patient I'd operated on, and in the room was one of my photographs. I thought that was really cool — to see the patient, in bed post-op, and the photograph that I shot on the wall."

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



To see more photographs by Dr. Richard M. Ehrlich, go to: [ehrllichphotography.com](http://ehrllichphotography.com)



To watch a video of Dr. Ehrlich photographing musicians and composers for *Face the Music*, go to: [tinyurl.com/ehrllichfacethemusic](http://tinyurl.com/ehrllichfacethemusic)



Quincy Jones (top) and Sheryl Crow (bottom) are among the 41 musical icons Dr. Richard M. Ehrlich photographed for *Face the Music*. Others include Esperanza Spalding, Graham Nash, Emmylou Harris and Joel Grey.

Photos: Dr. Richard M. Ehrlich

## Awards & Honors

**Dr. Denise Aberle (RES '85)**, professor of radiology and bioengineering and vice chair for research in radiological sciences, was elected to the National Academy of Medicine. Dr. Aberle also received the Joseph W. Cullen Prevention/Early Detection Award from the International Association for the Study of Lung Cancer.

**Dr. Susan Bookheimer**, the Joaquin M. Fuster Chair in Cognitive Neuroscience in the David Geffen School of Medicine at UCLA and director of the UCLA Intellect and Developmental Disabilities Research Center at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, received the 2020 Zenith Award from the American Alzheimer's Association.

**Dr. Steven Dubinett (RES '84)**, professor of medicine, pathology and laboratory medicine, and molecular and medical pharmacology, received the 2019 William S. Middleton Award from the Veterans Health Administration and the Biomedical Laboratory Research and Development Service.

**Dr. David Glanzman**, professor of neurobiology, was named a fellow of the American Association for the Advancement of Science.

**Dr. Shafali Jeste**, associate professor of psychiatry, neurology and pediatrics and director of the UCLA Care and Research in Neurogenetics Clinic, received the 2019 Presidential Early Career Award for Scientists and Engineers.

**Dr. Amar Kishan (RES '17)**, vice chair of clinical and translational research and chief of the genitourinary oncology service at the David Geffen School of Medicine at UCLA and the UCLA Jonsson Comprehensive Cancer Center, received the 2019 ASTRO — PCF Career Development Award to End Prostate Cancer from the Prostate Cancer Foundation.

**Dr. Linda Liau (RES '97, FEL '98, PhD '99)**, chair of neurosurgery, was appointed chair of the American Board of Neurological Surgery, the first woman to lead the organization in its 80-year history.

**Dr. Carol Mangione**, Barbara A. Levey & Gerald S. Levey Professor of Medicine and Public Health and chief of the Division of General Internal Medicine and Health Services Research, was elected to the National Academy of Medicine.

**Dr. James McGough (FEL '91)**, codirector of the ADHD Clinic at the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA, received the Elaine Schlosser Lewis Memorial Award for Research on Attention Deficit Disorders from the American Academy of Child and Adolescent Psychiatry.

**Dr. Antoni Ribas (FEL '98, '01)**, director of the tumor immunology program at the UCLA Jonsson Comprehensive Cancer Center, received the 2019 William B. Coley Award from the Cancer Research Institute.

**Dr. Jeremy Shelton (RES '11)**, assistant professor of urology, received the 2019 Igor Tulchinsky — PCF VALOR Young Investigator Award from the Prostate Cancer Foundation.

**Dr. Stephen Smale**, vice dean for research at the David Geffen School of Medicine at UCLA and Distinguished Professor in the Department of Microbiology, Immunology and Molecular Genetics, was named a fellow of the American Association for the Advancement of Science.

## In Memoriam

**Dr. Barbara Levey**, retired assistant vice chancellor for biomedical affairs and adjunct professor of medicine and of molecular and medical pharmacology, died October 29, 2019. She was 84 years old. Throughout her career, Dr. Levey was a strong advocate of clinical pharmacology. She received National Institutes of Health grants to support training and research in clinical pharmacology, which a UCLA colleague called "her academic passion" that she supported "with every ounce of her being."

**Dr. Wallace William Tourtellotte**, emeritus vice chair of neurology at UCLA and emeritus chief of neurology at the West Los Angeles VA Medical Center, died July 29, 2019. He was 95 years old. Dr. Tourtellotte joined the UCLA faculty in 1971 as professor and vice chair of neurology and the VA as chief of neurology. Dr. Tourtellotte devoted much of his career as a physician and scientist to understanding the cause of and discovering a potential cure for multiple sclerosis.

# David Geffen Adds \$46 Million to Landmark Medical Scholarships Program



David Geffen.  
Photo: Bruce Weber

**Longtime UCLA supporter and legendary entertainment visionary David Geffen** has made an additional \$46 million gift to the David Geffen Medical Scholarship Fund at UCLA, a reinvestment that brings the amount of the fund to \$146 million. The latest gift will enable 120 more students at the David Geffen School of Medicine at UCLA to benefit from the scholarships, bringing the total number of students expected to receive awards to 414 over a 10-year period

The medical school was named in Geffen's honor after a \$200 million gift in 2002. In 2012, he created the scholarship fund with a \$100 million gift. The full-ride scholarships, consisting of full tuition and a living stipend, have helped UCLA attract a broader array of exceptional medical school candidates. The number of

applications increased more than 50 percent between 2013 and 2018, when the school received an all-time high of more than 14,000. Nearly one of every four United States medical school applicants applies to UCLA.

"Mr. Geffen's groundbreaking contributions have inspired others across the nation to assist more students with the cost of their medical education," UCLA Chancellor Gene D. Block said. "His support has made it possible for UCLA to lead the way."

Reducing debt enables graduates to pursue additional paths of study that help them become leaders in their fields or devote themselves fully to patient care. That is significant in California, where physician shortages are a growing challenge. Dr. Allen Rodriguez (MD '18) was among the Geffen Scholars who graduated in 2018. "Without looming debt from medical education, I was able to choose to go into family medicine, a field I find to be extremely challenging, but one that positions me to provide care for the greatest number of people with the greatest number of issues — and pursue it in a location where my work is very much needed," he said.

At a time when higher-education debt is a subject of great concern and debate, the percentage of UCLA medical students graduating debt-free has nearly tripled since Geffen gave the inaugural gift, from 17 percent in June 2013 to 45 percent in 2019. "The Geffen Scholars program is helping our medical students enhance their training with research and scholarly activities that prepare them to be leaders in health care," said Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health. "In addition to practicing medicine, they will be game changers for their profession and experts in areas such as health care policy, medical innovation and community well-being."

"The Geffen Scholars program is life-altering for our students and their future patients," said Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair. "Mr. Geffen's generosity has remarkable ripple effects."



For more information, contact Emily McLaughlin at: 310-794-4763

# Nearly 2,000 Guests Attend Party on the Pier for UCLA Mattel Children's Hospital

A steady stream of children and their families filled Pacific Park on the Santa Monica Pier on November 3, 2019, to play, ride, sing, dance, create and enjoy a fun-packed day at the **20th Annual Party on the Pier**, benefiting UCLA Mattel Children's Hospital. The event, which generates unrestricted funding for high-priority programs serving children locally and around the world, has become a time-honored tradition, thanks to the dedication of the UCLA Mattel Children's Hospital Board, event-planning committee, sponsors, supporters and volunteers. Loris Lunsford and Hillary Milken served as co-chairs.

To the delight of attendees, Mattel, Inc. provided premium toys to fill the game booths, and the Los Angeles Dodgers Foundation helped make the VIP tent a home run with hat and T-shirt giveaways, star athletes to meet and greet and the Dodgers' mascot spreading team spirit, sharing high fives and showing off dance moves.

The Power of Play area, sponsored by the Goldhirsh-Yellin Foundation, offered a shady retreat for all guests, with a variety of craft activities, including glitter tattoos, and space for children



(From left): Dr. Sherin U. Devaskar, physician-in-chief of UCLA Mattel Children's Hospital and Mattel Executive Endowed Chair in Pediatrics; event co-chair Hillary Milken; event co-chair Loris Lunsford; Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences; and event committee members Melissa Mitchell, Rebecca Khorshidi and Bobby Khorshidi.

Photos: Jessie Cowan Photography

to move and groove during a performance by The BeatBuds. Elsewhere in the park, a beauty makeover station, hosted by Petite N' Pretty, and a celebrity photo booth where guests could take selfies with stars from favorite children's TV shows and movies, were additional highlights. Volunteers from the UCLA People-Animal Connection brought furry friends again this year to add some *paw-someness* to an already incredible day.

UCLA Mattel Children's Hospital ranks among the best children's hospitals in the nation in all 10 specialties assessed in 2019-20 by *U.S. News & World Report*.



For more information, contact Danielle Dietz at: 310-267-4098



**Top Left:** (Top, from left): Danit Marquardt, Mattel, Inc.; Steve Totzke, Mattel, Inc.; Jeffrey H. Cohen, UCLA Mattel Children's Hospital board member; Amy Thompson, Mattel, Inc.; Hillary Milken; PJ Lewis, Mattel Inc.; Johnese Spisso; Dr. Sherin U. Devaskar; Tanya Andreadis, UCLA Health chief of marketing. (Bottom, from left): Loris Lunsford; Monique Rosenthal, UCLA Mattel Children's Hospital board member; Janet Hsu, Mattel, Inc.; Marissa Beck, Mattel, Inc.; and Lindsey Williams, assistant vice chancellor of UCLA Health Sciences. **Top Right:** (From left): Dodger alumni Mickey Hatcher, Dennis Powell, Billy Ashley, Lee Lacy, Matt Luke and Derrel Thomas. **Bottom Left:** At the Party on the Pier game booths, filled with Mattel toys, everyone is a winner. **Bottom Center:** Guests and teen celebrities with Gus from the UCLA People-Animal Connection. **Bottom Right:** The L.A. Dodgers' mascot made the rounds.

Photos: Jessie Cowan Photography

# Golden Visionary Ball Raises More than \$1 Million for UCLA Neurosurgery

The 2019 Golden Visionary Ball, held on October 10, 2019, at the Beverly Wilshire Hotel, raised more than \$1 million to support the UCLA Department of Neurosurgery. Thanks to generous support from the Lauren B. Leichtman and Arthur E. Levine Family Foundation, Lynda and Stewart Resnick, Wallis Annenberg and the Annenberg Foundation and many others, the evening garnered vital funds to educate the next generation of neurosurgeons and advance innovative research to cure brain cancer, reverse stroke and brain aneurysms, repair spinal cord and brain injuries and improve treatments for an array of life-altering neurological disorders. The gala, co-chaired by Susan Dolgen, Edie Baskin Bronson, Ted Gagliano and Loic Bailly, was hosted by Renee Bargh, weekend co-host and longtime correspondent for *Extra*.

Dr. Linda M. Liau (RES '97, FEL '98, PhD '99), chair of the UCLA Department of Neurosurgery and W. Eugene Stern Chair in Neurosurgery, David Geffen School of Medicine at UCLA, welcomed more than 500 guests to the special celebration during

UCLA's centennial year. The UCLA neurosurgery board combined two signature events — the Visionary Ball and the Golden Portal Awards — to create the first Golden Visionary Ball.

The evening honored extraordinary leaders and pioneers and included inspiring stories from courageous patients and family members in a segment known as Points of Light. “Our patients drive us to continue advancing science and medicine. You illuminate our purpose and are at the heart of all we do,” Dr. Liau said. The program also featured video tributes to each honoree: World-renowned architect Frank Gehry received the Luminary Award; Elizabeth Gabler, president of Sony 3000 Pictures, received the Icon Award; Lauren B. Leichtman and Arthur E. Levine, founding partners of Levine Leichtman Capital Partners, received the Visionary Award; and Dr. Ronald W. Busuttil (RES '77), Distinguished Professor, executive chairman of the UCLA Department of Surgery and William P. Longmire, Jr. Chair in Surgery, was honored with the Medical Visionary Award.

Dr. Liau and guest neurosurgeon Dr. J. Patrick Johnson shared a special tribute to Dr. Donald P. Becker, an esteemed professor emeritus, who first joined the UCLA community in 1968 and subsequently served as chief of neurosurgery. During his tenure, Dr. Becker developed a comprehensive neurosurgical brain tumor program, leading to what is now known as the UCLA Brain Tumor Center, one of only six brain cancer programs in the nation to be designated as a Specialized Program of Research Excellence, or “SPORE,” by the National Cancer Institute. Thanks to support from committed donors, such as Patricia and Peter Neuwirth, Dr. Liau announced that UCLA has raised \$1 million to establish an endowed term chair in honor of Dr. Becker.

Angel City Chorale, *America's Got Talent* semifinalist known for its signature blend of musical styles and commitment to community, engaged the audience with an interactive performance that prompted a standing ovation. The UCLA Department of Neurosurgery is one of the top neurosurgery programs in the nation, ranked No. 6 nationally by *U.S. News & World Report*.



Visionary Award recipients Arthur E. Levine (left) and Lauren B. Leichtman.

Photos: Vince Buccia



For more information, contact Samantha Lang at:  
310-351-9806



**Top Left:** Icon Awardee Elizabeth Gabler (left) with UCLA Neurosurgery Board of Advisors member Ted Gagliano. **Top Right:** Medical Visionary Award recipient Dr. Ronald W. Busuttill (left) and Medical Visionary Award presenter Erich Lauffs. **Middle Left:** (From left) Event co-chair Susan Dolgen, UCLA Neurosurgery Board of Advisors member; Dr. John C. Mazziotta, (RES '81, FEL '83) vice chancellor of UCLA Health Sciences and CEO of UCLA Health; co-chair and UCLA Neurosurgery Board of Advisors member Edie Baskin Bronson; and Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair. **Middle Right:** Co-chairs Gagliano (left) and Loic Bailly, founders of the Golden Portal Awards. **Bottom Left:** Berta Isabel Aguilera (left) and Luminary Award recipient Frank Gehry. **Bottom Right:** UCLA neurosurgeon Dr. Marvin B. Bergsneider (RES '94) (left) and Dr. Linda Liau.

Photos: Vince Buccì

# Annual UCLA Health System Board Meeting Turns Its Focus to Cardiac Care

The **UCLA Health System Board** convened for its eighth annual meeting on September 10, 2019. The evening was hosted by Dr. John C. Mazziotta (RES '81, FEL '83), vice chancellor of UCLA Health Sciences and CEO of UCLA Health; Johnese Spisso, president of UCLA Health, CEO of the UCLA Hospital System and associate vice chancellor of UCLA Health Sciences; and Henry Gluck, chairman of the UCLA Health System Board. The meeting, themed "Innovations in Cardiology," informed audience members about how to protect themselves and their family members from heart disease, which claims more lives each year than all cancers combined.

Jane Seymour, award-winning actress, artist, advocate, author and designer, was the special guest speaker, who shared, "My family has been affected by heart disease, which is why I am committed to promoting awareness, healthy lifestyles and other prevention strategies." Seymour is the artist behind Open Hearts by Jane Seymour, reflecting her mother's philosophy that only when you keep your heart open can you best give and receive love. In 2010, Seymour founded the Open Hearts Foundation, which is committed to empowering emerging and growing nonprofits.

Also featured were two faculty speakers from the UCLA Division of Cardiology who represent the institution's commitment to advancing research and patient care. Dr. Linda L. Demer, executive vice chair of medicine, spoke about coronary calcification and innovative imaging techniques that guide treatment and patient care. Dr. Tamer Sallam (PhD '14, FEL '14), presented on the new genetic insights into heart disease. At the conclusion of the meeting, those in attendance enjoyed a reception, where volunteers from the UCLA People-Animal Connection (PAC) program greeted board members and their guests.

 For more information, contact Jennifer Gray at: 310-267-0050



**Top Left:** (From left): Dr. John C. Mazziotta, Jane Seymour, Johnese Spisso and Henry Gluck. **Top Right:** (From left): Board members Tracey Gluck, Kimberly Friedmutter and Arline Gluck. **Bottom Left:** (From left): Todd Katz, chair of the Ronald Reagan UCLA Medical Center Board of Advisors; Dana Katz; Joe Sullivan and Carol Sullivan. **Bottom Center:** Meyer Luskin (left) and board member Les E. Bider. **Bottom Right:** PAC dog Oliver.

Photos: Jessie Cowan Photography



UCLA Health Operation Mend supporters in the Veterans Day parade.

Photo: Anna Watts

## UCLA Operation Mend Cheered on at New York City Veterans Day Parade

Eleven veterans treated through the **UCLA Health Operation Mend program** took a moment to reflect before beginning their 1.2-mile march in the 100th New York City Veterans Day parade on November 11, 2019. For many of the veterans, the day was a powerful milestone in their journeys toward healing their wounds of war. Nearly 100 family members, supporters, staff, friends and other veterans joined the Operation Mend vets as they paraded by thousands of people lining Fifth Avenue, cheering them for their service, sacrifices and resilience. Gen. (Ret.) James F. Amos, the 35th Commandant of the U.S. Marine Corps, and his wife Bonnie Amos, who are members of Operation Mend's founding Board of Advisors, joined the marchers.

Veterans also participated in events that included a guided tour of the 9/11 Memorial and Museum, a donor-sponsored evening at Bryant Park Grill that featured stories shared by veterans and their caregivers, an auction to raise money for Operation Mend and a performance by Scott Terry and Eric Hall of the band Red Wanting Blue. In addition, Operation Mend's first patient, Marine Cpl. Aaron Mankin, participated in a special Veterans Day ceremony at the Nasdaq stock exchange, which included U.S. Secretary of

Defense Mark Esper. The entire Operation Mend community ended Veterans Day with a celebration at P.J. Clarke's Sidecar, hosted by its owners, retired Marine and two-time Purple Heart recipient Phil Scotti and his wife Thea Scotti.

Founded in 2007, UCLA Health Operation Mend helps America's post-9/11 service members and veterans recover from their visible and invisible wounds of war. In addition to surgical care, the Operation Mend Intensive Treatment Program to treat post-traumatic stress disorder and mild traumatic brain injury is the only program in the nation that treats caregivers alongside their veterans as full participants. To further advance its mission, Operation Mend recently formed an outside Board of Advisors, the inaugural meeting of which took place in conjunction with the New York Veterans Day activities. Cpl. Mankin started the meeting and shared his perspective about the tremendous needs of service members and veterans still suffering. Summing up the weekend, he said, "It's all about the people. We come back each year, a little different, a little more healed. These types of events do my heart good."



For more information, contact Nicholas Middlesworth at: 310-206-2089

## The Who and Friends Rock Private Show for UCLA Health and Teen Cancer America



Left: (From left): Rebecca Rothstein, John Paul DeJoria and Jordan Kaplan.

On the heels of The Who's U.S. tour, the band joined the Foo Fighters, Pink and Kenny Loggins to raise millions for **UCLA Health and Teen Cancer America (TCA)**, the national nonprofit founded by Roger Daltrey and Pete Townshend. Held at a private residence in Los Angeles on October 25, 2019, the TCA Backyard Concert netted more than \$4 million for UCLA Health autism and breast-cancer programs and Teen Cancer America. "The goal for this evening, and for all of our Teen Cancer America fundraising activities, is to change the national standard of care in the U.S. for teenagers with cancer," Daltrey said.

Jordan Kaplan, who serves on the TCA board of directors, and his wife Christine Kaplan once again opened their home for the event, which featured Howie Mandel as auctioneer, Judd Apatow as master of ceremonies and all-star live performances. The event also was hosted by TCA board chairman Rebecca Rothstein, managing director of Merrill Lynch Wealth Management in Beverly Hills.

Attendees bid on rare rock 'n' roll memorabilia, such as an authentic replica of Buddy Holly's Gibson J-45 guitar autographed by Bob Dylan, Keith Richards, Mick Jagger, Ed Sheeran, Robert Plant, Dave Grohl, Brian Wilson, Brian May, Eric Clapton, Mark Knopfler, Linda Ronstadt, Bruce Springsteen, Dolly Parton, Don McLean, Peter Dinklage and others; an original oil painting of

Buddy Holly by guitarist Ronnie Wood of The Rolling Stones; concert experiences with KISS; a one-of-a-kind Bremont chronograph mechanical watch with the face hand-painted by Ronnie Wood; a Dodger-experience package auctioned off by Dodger Justin Turner; and a rare opportunity to play drums that evening with The Who on its classic song "Pinball Wizard."

"The Backyard Concert has become the marquee event for TCA and UCLA Health each year, and we're so grateful to The Who and all the amazing performers who donate their time to help our organization raise money," said Rothstein. "We're also deeply appreciative of the efforts of our wonderful partners, and, of course, all the patrons who help UCLA Health and TCA fulfill its mission."



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



Top: Roger Daltrey (left) with UCLA Health patient/adult and young adult cancer advocate Ali Newman. Bottom: Singer Pink performing at the event.

Photos: William Snyder/@jointogetherwiththeband

# Dr. Hans Gritsch Named Inaugural Chair in Kidney Transplantation

On November 7, 2019, members of the UCLA Department of Urology, philanthropists, friends and family gathered to celebrate the gift from the John Jergens Estate to establish the **Jergens Administrative Chair in Kidney Transplantation**. The evening also honored Dr. Hans A. Gritsch (RES '91), clinical professor of urology and surgical director of the UCLA Kidney Transplant Program in the David Geffen School of Medicine at UCLA, as the inaugural Jergens Chair holder. Dr. Gritsch has dedicated his career of more than 22 years to renal transplantation. A national and international speaker on kidney transplantation, he has trained



(From left): Dr. Kelsey C. Martin, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, M.D., Endowed Chair; Dr. Hans Gritsch; and Dr. Mark S. Litwin (FEL '93), chair of the UCLA Department of Urology and The Fran and Ray Stark Foundation Chair in Urology.

Photo: Jessie Cowan Photography

eight kidney transplant fellows and 61 multiorgan transplant fellows. Dr. Gritsch holds two patents and has authored 143 scientific publications and nearly 100 abstracts. Funding from the chair will enable him to continue advancing research.



For more information, contact Heidi Saravia at: 310-206-4565

## Nonprofit Heart of the Brain Fuels the Fight against Brain Cancer



Heart of the Brain co-founders Michael and Rebecca Neidorf with their daughter Isabel Neidorf (center).

Photos: Reggie Ige

Los Angeles-based nonprofit **Heart of the Brain** has made a \$2 million pledge to support the UCLA Brain Tumor Center, under the leadership of center co-directors Dr. Linda M. Liau (RES '97, FEL '98, PhD '99), chair of the UCLA Department of Neurosurgery and W. Eugene Stern Chair in Neurosurgery, and Dr. Timothy Cloughesy (RES '91, FEL '92), director of the UCLA Neuro-Oncology Program and professor of clinical neurology. This commitment, part of the \$4.2 billion Centennial Campaign

for UCLA, will speed the path to discovering ways to provide earlier detection of brain tumors and more advanced therapies.

Becky and Michael Neidorf started the Heart of the Brain Foundation because their daughter Isabel was diagnosed with an inoperable brain tumor. The couple's goal was to find a cure, saying, "Supporting the Brain Tumor Center and research efforts of Dr. Liau and Dr. Cloughesy was a natural fit. Our family has been involved with UCLA for more than 50 years and is honored to support these two brilliant doctors, along with the leading research institution in the fight against brain cancer."

The nonprofit held its second annual gala on the UCLA campus on September 7, 2019, to further advance support for the center. The evening, which raised more than \$400,000 for the center, included an award ceremony, with Erika Kaestle receiving the Judi Kaufman Award, honoring the spirit of the late Judi Kaufman. Dr. Robert Prins (FEL '02) received the Johnny Mercer Foundation Award in recognition of outstanding research on brain cancer and the dendritic cell-based vaccine. Lisa and Gregg Simon were presented with the Isabel Neidorf Award for their advocacy and support and Elliott Balbert was honored with the Special Award in celebration of his contributions as the inaugural Heart of the Brain executive director.



For more information, contact Samantha Lang at: 310-351-9806

# UCLA Supporters Raise Money for Duchenne Muscular Dystrophy

More than 350 people gathered at CBS Studios on November 3, 2019, to attend the annual **STARS (Science Technology and Research Support) fundraiser**. Hosted by UCLA donor Marilyn Silva Lund and co-chaired by Barbara Miceli, the event benefits the Center for Duchenne Muscular Dystrophy at UCLA. Also in attendance were center co-directors Drs. M. Carrie Miceli and Stanley F. Nelson.

Broadway to the Rescue, volunteer Broadway stars who raise money for various causes, provided the entertainment, performing songs from various Broadway shows.

Duchenne muscular dystrophy is one of the most common and devastating genetic diseases of childhood, causing progressive

muscle degeneration and affecting approximately one-in-5,000 boys. The Center for Duchenne Muscular Dystrophy at UCLA leads the nation in clinical care, translational science and clinical trials focused on Duchenne. “We are thrilled to be able to direct resources in support of Duchenne muscular dystrophy research and patient care at UCLA,” said Silva Lund. Funds will help advance research, clinical care and treatments for Duchenne that can improve, and potentially extend, the lives of those afflicted.



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

## Dancing for NED Fundraiser Fights Ovarian Cancer

On November 2, 2019, Melissa Rosenberg, Dana Baratta and Jennifer Fife hosted **Dancing for NED (No Evidence of Disease)**, an evening of food, fun and dancing under the stars that celebrates the gift of life. The event raised more than \$150,000 to benefit the ovarian cancer research efforts of Dr. Beth Y. Karlan (FEL '89), vice chair of women's health research in the UCLA Department of Obstetrics and Gynecology and director of cancer population genetics at the UCLA Jonsson Comprehensive Cancer Center. With philanthropic support from Dancing for NED and others, Dr. Karlan's studies have helped shift the standard of care for ovarian cancer toward a new era of targeted therapies. This year's event will have an immediate impact, bringing hope to women battling ovarian cancer by enabling Dr. Karlan to aggressively expand UCLA gynecologic oncology clinical trials, profile tumors, personalize therapies and offer new treatment options for inherited cancers.



For more information, contact Heidi Saravia at: 310-206-4565



Dr. Beth Karlan (left) and Dana Baratta.

Photo: Tori Time Photography

## Gifts

**Dunard Fund USA** has contributed \$2 million to the UCLA Depression Grand Challenge (DGC) to support its Screening and Treatment for Anxiety and Depression (STAND) system of care, which helps UCLA students who are at risk for depression or suicide and offers them treatment free of charge. Developed by the DGC, the program uses online screening and mobile technology, evidence-based treatment and ongoing assessment to deliver personalized care to more patients. The unique model made UCLA the first university to offer screening for students and an immediate connection to appropriate levels of care. The gift from the Dunard Fund USA will enable the DGC to enhance the program by incorporating real-time symptom- and behavior-tracking; adding new modules for sleep and substance-use disorders; assessing the impact of the environment, including diet, and extra resources for translating materials; training coaches; and exploring how to link participants to social services. The UCLA DGC

plans to expand among a new group in 2020 with STAND 2.0, which will be available to Los Angeles community college students.

UCLA alumnus **Dr. Emil Kakkis** has given \$100,000 to establish the Suzanne Eaton, PhD Memorial Prize Fund under the Graduate Programs in Bioscience in the David Geffen School of Medicine at UCLA. The gift honors Dr. Suzanne Eaton, a renowned, award-winning scientist and alumna, who received her PhD in microbiology in 1987. Dr. Eaton died in the summer of 2019, and the fund will support doctoral students and postdoctoral fellows following in her footsteps in the fields of microbiology, immunology, biological chemistry or molecular biology. Dr. Kakkis is joined by friends and family of Dr. Eaton in establishing this new fund.

**Lauren** and **Bobby Turner** have renewed their commitment to the UCLA Community Engagement Program in the David Geffen School of Medicine at UCLA with a \$250,000 gift to support the

Turner-UCLA Allied Health Internship Program. This transformational program is designed to offer high school students and recent graduates from underresourced communities career education and exposure to allied health pathways. Established in 2017, this gift will expand the Turner-UCLA Allied Health Internship Program size by 50 percent, advancing the program's efforts to address workforce shortages in allied health careers.



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

## In Memoriam



Barron Hilton.

Photo: Courtesy of the Conrad N. Hilton Foundation

**Barron Hilton**, son and successor to hotel pioneer Conrad N. Hilton, died on September 19, 2019. He was 91 years old. He was born in Dallas, Texas, and joined the Navy at age 17, serving at Pearl Harbor. Following his military service, Hilton began a successful 20-year career as an entrepreneur. Based on his growing success, his father invited him to join Hilton Hotels Corporation in 1954 as a vice president, while allowing him to continue to manage his outside

business interests. Hilton succeeded his father as president and chief executive officer in 1966 and served in that role until his retirement in 1996, after which he remained with the corporation as co-chairman of the board. Like his father, Hilton bequeathed 97 percent of his estate to the philanthropic work of the Conrad N. Hilton Foundation, one of the largest private philanthropic organizations in the world. The Hilton Foundation has supported myriad areas at UCLA, including the David Geffen School of Medicine at UCLA, the Fielding School of Public Health, the Luskin School of Public Affairs, the College of Letters and Science, the Anderson School of Management, the School of the Arts and Architecture, Chancellor's Greatest Needs, the School of Dentistry and the Graduate School of Education and Information Studies. A generous benefactor himself, Barron Hilton established the Marilyn Hilton MS Achievement Center at UCLA, named in honor of his late wife Marilyn. Hilton is survived by eight children, 15 grandchildren and four great-grandchildren.



Leonard Goldberg.

Photo: Jeffrey Mayer/WireImage/Getty Images

Longtime UCLA friend **Leonard Goldberg** died December 4, 2019. He was 85 years old. Goldberg graduated with an economics degree from the Wharton School of the University of Pennsylvania. A prolific producer and television executive, he began his broadcasting career with ABC's research department. Throughout his career, he held numerous executive positions at various networks and served as the head of programming for ABC and president of 20th

Century Fox. Most recently, he was executive producer of the CBS series *Blue Bloods*. An Emmy Award-winning producer, Goldberg also helmed his own production company and produced the *Charlie's Angels* films series, *Sleeping with the Enemy*, *Double Jeopardy*, *Unknown* and the Oscar-nominated movie *WarGames*. The iconic producer has a star on the Hollywood Walk of Fame and was inducted into the Television Academy Hall of Fame. Active philanthropists, Goldberg and his wife Wendy made a visionary gift to endow and name the UCLA Goldberg Migraine Program in the David Geffen School of Medicine at UCLA and to establish the Goldberg Head and Neck Fund. In recognition of the Goldbergs' support, UCLA named the Wendy and Leonard Goldberg Medical Building at 300 Medical Plaza. Goldberg is survived by his wife Wendy Howard Goldberg, daughter Amanda Goldberg Raskind, sons Richard Mirisch and John Mirisch, their spouses and five grandchildren.

# A Confounding Case

By Manish J. Butte, MD, PhD

## SOMETIMES IN MEDICINE WE ARE PRESENTED WITH A CASE THAT CONFOUNDS OUR YEARS OF TRAINING, EXPERIENCE AND EXPECTATIONS.

Not long ago, I was confronted with such a case. It began last year when a family traveled 150 miles to UCLA from their home in Santa Maria, along California's Central Coast, with their 4-year-old son Abraham, who was infected by *Coccidioides immitis*, the fungus commonly found in soil that causes Valley fever. Of the 8,000 Californians who contract Valley fever each year, most recover without treatment; those with more serious cases will require an antifungal medication that clears the infection. But a few patients will experience a life-threatening form of the disease that ravages the body for reasons unknown.

Abraham's case was the latter.

The child's infection was invasive, having spread throughout his soft tissue, skull, bones, arms, legs and spine. He could not walk and required around-the-clock pain medication. He was too sick to eat and had to be fed through a tube. To help Abraham's immune system clear the infection, our team administered a powerful combination of antifungal medications.

This therapy should have been enough, but the infection was persistent and continued to spread. It became clear that standard medications were

insufficient. To try to determine what was going on with the boy, our research lab began looking for clues about why Abraham's body had such difficulty fighting the infection. Using genome sequencing and RNA sequencing, our team performed experimental tests on Abraham's T cells and analyzed the genetic pathways that were turned on in his immune cells.

The results revealed that Abraham's immune response was not producing enough interferon gamma, an essential infection-fighting molecule. An inadequate supply of interferon gamma made Abraham highly susceptible to a host of bacterial and fungal infections and hindered his ability to fight them.

We treated Abraham with multiple injections of interferon gamma to supplement the deficiency and boost his immune system. The spread of the infection slowed, but even these treatments were not enough.



**Above:** Abraham was hospitalized for 11 months as doctors tried to control the Valley fever that was ravaging his young body. **Left:** A nurse gives a high-five during a post-hospitalization appointment with Drs. Manish J. Butte (left) and Maria Garcia-Lloret (right). **Middle Top:** Chase Child Life Program specialist Alysha Sandalow helps Abraham pass out cookies to staff as a final farewell after his long hospital stay. **Middle Bottom:** Abraham's scheduled post-hospitalization checkup quickly becomes a reunion and playful photo-op with Drs. Butte and Garcia-Lloret.

Photos: Nick Carranza



### His immune system just wasn't responding adequately.

To save his life, we needed to find out why. A suggestion came from a colleague in pediatric allergy and immunology, Maria Garcia-Lloret, MD (RES '00, FEL '98, '03), to consider an alternative approach. Perhaps, rather than trying to simply supplement the work of Abraham's immune system, it needed to be rebooted altogether.

The immune system responds to different organisms it perceives as harmful by activating one of several different types of immunities, similar to how a computer runs a program to complete a certain function. Type 1 immunity, for instance, is the program the immune system runs to fight most bacteria, viruses, fungi and other such harmful microorganisms that cause infections. Type 1 immunity uses interferon gamma to coordinate its attack. Type 2 immunity is the program the immune system runs to fight certain parasites, such as worm or tick infections, or in response to allergens. When the immune system responds to a threat by running a particular program, all the immune cells tune in to that same program. In order to adequately fight an infection, the immune system must run the correct program.

While type 1 immunity was the program that needed to run to attack Abraham's Valley fever infection, our lab experiments consistently showed that his immune system was somehow tuned to type 2 immunity. Here, Dr. Garcia-Lloret's contribution proved to be invaluable. She proposed that the drug dupilumab — which was approved by the U.S. Food and Drug Administration to treat eczema and asthma — might help reprogram Abraham's immune system and run type 1 immunity instead. Dupilumab

has been shown to effectively block the type 2 immune response that causes the skin to react with an eczema flare-up.

In addition to her medical expertise, Dr. Garcia-Lloret became a bridge for us with the family. The parents spoke no English and very little Spanish; their primary language was a regional dialect from Mexico. But Dr. Garcia-Lloret, who originally is from Argentina — coincidentally, the country in which the first case of coccidioidomycosis was described, in the 1890s — was able to develop a communication channel with the family, so they would be informed about what we were thinking and doing.

Further lab experiments using Abraham's cells demonstrated that dupilumab showed promise in pushing his cells toward the infection-busting type 1 pathway, so Dr. Garcia-Lloret and I administered treatments of the drug — in addition to injections of interferon gamma — for Abraham.

Within a few weeks, Abraham showed signs of starting to clear the infection. While at one point his survival seemed unlikely, he was finally able to leave the hospital for the first time in 11 months — walking, playing and restored to health.

While steroids have been a go-to, non-specific tool for blocking immune responses, this new generation of medicines like dupilumab offer a way to block type 2 immunity specifically, which offers hope for some difficult-to-treat allergies and asthma. This case was the first time anyone has tampered with type 2 immunity for the purposes of fighting an infection.

Maybe this approach has the potential for broader applications against such diseases as tuberculosis and severe viral infections. As physicians, we always are thinking about how to reduce suffering, and my colleagues and I are happy to have found a potential new treatment for these serious infections. In return, these cases of rare immune diseases offer us new knowledge about how the immune system works and why it chooses to run various programs to fight different infections. With this new knowledge, I hope that our studies will help to identify which patients are at increased risk of life-threatening infections, so we can offer them hope before they get severely ill.



Dr. Manish Butte is chief of the UCLA Division of Immunology, Allergy and Rheumatology.

Photo: UCLA Health



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U.S. News & World Report's Best Hospital Survey ranks UCLA #1 in California and #6 in the nation.

David Geffen School of Medicine at UCLA ranks #6 in Research and #5 in Primary Care nationwide.



Photos: Dr. Richard M. Ehrlich

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U C L A



For his *Face the Music* project, UCLA's Dr. Richard M. Ehrlich photographed some of the world's most recognizable music icons, among them (clockwise from upper left) Johnny Rotten, Rosanne Cash, Ringo Starr, Joel Grey, Roger Daltrey and Esperanza Spalding. ("Photo Synthesis," page 36)