UCLA's Depression Grand Challenge aims to cut the burden of depression in half by 2050 and eliminate it by the end of the century.
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Share Your Thoughts with Us

Like us or not, we want to hear from you. Your input is important, so please give us your comments and feedback. Include your name, email address, city and state of residence and, if you are a UCLA medical alum (MD, PhD, Resident and/or Fellow), your degree(s) and graduation year(s). Letters and/or comments may be edited for clarity and/or length. Don’t be a stranger. Write to us, or post your comments on our social-media pages.

Submit letters to:
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uclahealth.org/getsocial
The vision statement of UCLA Health clearly describes our goal: To heal humankind, one patient at a time, by improving health, alleviating suffering and delivering acts of kindness. To heal humankind. That is a tall order, but it is a charge that we take seriously. For UCLA Health and the David Geffen School of Medicine at UCLA, community engagement is global. Just as we are committed to improving health outcomes for our local communities, we recognize that the expertise of our faculty and the talent and energy of our students can powerfully affect the direction of healthcare in far-away places. This is not just an aspiration; it is our responsibility.

The UCLA Center for World Health has taken the reins in this endeavor, expanding international educational opportunities for medical students and residents, collaborating with global partners on strategic research and capacity-building programs and working with all stakeholders to improve health in some 65 countries around the world.

The David Geffen School of Medicine at UCLA is committed to supporting the center’s global efforts. We have pledged resources to grow and extend collaborations around the world, working with universities, ministries of health and other partners to promote innovative approaches to healthcare. Members of our faculty are key participants in these efforts. For example, two UCLA physicians, Dr. Lee Miller and Dr. Daniel DeUgarte (MD ’97, RES ’05), have established partnerships with faculty leadership at a medical school in Mozambique, where our students go to train and conduct research. Trainees and nurses from Mozambique also come to UCLA. Other faculty members have engaged in clinical-care delivery and training in Brazil, Ethiopia, Armenia and Tanzania, to name a few examples.

These efforts extend into our classrooms. Last year, more than 25 percent of our first-year students took the Global Health Selective, and more of our residency programs now are offering international electives.

As a result of these efforts, greater numbers of students are participating in research and clinical electives in global-health settings, traveling to such countries as China, India, Peru, Nicaragua, Haiti, Botswana, Vietnam and Thailand. One of our most successful collaborations is with Partners in Hope, a rural HIV/AIDS center in the Southeast African country of Malawi, where an estimated one-in-eight people is infected. Each year, residents and medical students endure a flight of more than 20 hours to travel to Malawi to spend several weeks working at the clinic, training and providing clinical care to the patients in that country. (This publication wrote an article several years ago about our work in Malawi and other countries; you can read that story and view a slideshow of photographs at magazine.uclahealth.org/doctoracrossborders.)

We know that we can’t solve all the world’s problems, but we can work with people around the world to develop the skills they need to solve problems where they live and, in so doing, to help to heal humankind.

I WANT TO WELCOME DR. KELSEY MARTIN as interim dean of the David Geffen School of Medicine at UCLA. Dr. Martin has been a valuable member of our UCLA family since 1999, serving as a senior administrator, researcher and teacher. As interim dean, she will provide strategic vision and develop and manage policy, programs and resource allocation. Welcome, Dr. Martin.

John C. Mazziotta, MD (RES ’81, FEL ’83), PhD
Vice Chancellor, UCLA Health Sciences
CEO, UCLA Health
The kids at Camp Leg Power start each day with a spirited group chant, followed by an energetic UCLA fight song. The chant, which is done with corresponding hand and leg motions, is actually a therapeutic activity in disguise, the first in a three-hour session that converts therapy for children with movement disorders into summertime fun. Camp Leg Power is a program of the UCLA Center for Cerebral Palsy that’s staffers by physical therapists and student volunteers.

During a recent session, Oliver Mann, who has received therapeutic services through the interdisciplinary center since he was a toddler, leads the opening exercise for campers. Now 16, Oliver is a junior counselor at the camp and an unofficial cheerleader for the younger campers, including Niko Corzo, an active 9-year-old from Cheviot Hills.

“Most kids with cerebral palsy have individual physical-therapy sessions during the year, which can get tedious,” says Eileen Fowler, Peter William Shapiro Chair and director of research and education for the UCLA Center for Cerebral Palsy. “Having a summer program that lets campers participate in creative therapeutic activities with their peers builds skills and confidence. And we make sure it really is fun.”

Niko has no doubts about that. “All of the camp activities are fun, but the day we played with shaving cream with our feet was epic.”

But Camp Leg Power is more than just plain fun and physical therapy. The “camp” is actually a pilot study designed to identify changes in the

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Top: The kids and counselors of Camp Leg Power. Upper Middle: Niko Corzo (middle) plays a video game, using his ankle to move the cursor, with help from volunteer Ky Soriano (right) and Oliver Mann (left). Lower Middle: Camper Niko Corzo (left) takes a break from a water activity. With him are physical therapist Carolyn Kelley, junior camp counselor Oliver Mann and physical therapist Loretta Staudt. The therapists developed many of the activities at Camp Leg Power. Bottom: UCLA physical therapist Carolyn Kelley helps camper Alex Chery navigate the world.

Photos: Robert Hernandez
Portable Finger Probe Measures Liver Function in Potential Donors

A portable finger-probe device that has successfully measured liver function in brain-dead adult organ donors could change the way organs are assessed and save thousands of dollars per transplant, a UCLA study has found. Working with OneLegacy, the non-profit organ- and tissue-recovery organization serving the Greater Los Angeles area, UCLA researchers measured liver function in 53 potential organ donors in a blind study of the device. Eleven livers were declined because of poor quality; the function of the 42 that were transplanted was tested later to compare to the results obtained using the device.

“This Pulsion device is the best single predictor of organ survival in our patients,” says Ali Zarrinpar, MD (RES ’10, FEL ’12), PhD, assistant professor of surgery in the Division of Liver and Pancreas Transplantation. “It gives us a quantitative measure of how good a liver is without having to visually inspect the organ.”

Although there are accurate and reliable function tests for other donor organs, this is not the case for livers, Dr. Zarrinpar says. Currently, depending on a thorough assessment of a potential donor’s medical history, multiple blood tests and any hospital treatments, a surgical team from the recipient’s medical center is dispatched to the donor’s location to visually inspect and potentially procure the organ. That team costs thousands of dollars per procedure, Dr. Zarrinpar says, and about 10-to-15 percent of the time the organ is deemed unusable.

On the flip side, an organ from a patient with a questionable history or borderline laboratory results may be considered a waste of the surgical team’s time and the retrieval effort abandoned. However, this device could easily be used to test organ function in such marginal donors, so its use could increase the number of organs used for transplant.

The device operates much like a pulse oximeter; it measures the rate at which a dye injected into the potential donor’s bloodstream is cleared by the liver. This novel, noninvasive and rapid test successfully predicted which livers would function properly in transplant patients, Dr. Zarrinpar says. “These data warrant further exploration in a larger trial in a variety of settings to evaluate acceptable values for donated livers,” the study states. “At a time of increasing regional sharing and calls for national organ sharing, this method would assist in the standardization of graft evaluation. It could also lead to increasing liver graft utilization while decreasing travel risk and expenses.”


The Pulsion device successfully measured liver function in potential donors

Image: Courtesy of Pulsion

brain in response to therapy for the lower limbs of children with spastic cerebral palsy. All 20 children participating in the UCLA study have impairment in voluntary movement caused by damage to specific motor tracts in the brain. The research focuses on measuring and improving skilled movement patterns and identifying resulting changes in the brain.

The project is a collaboration among the Center for Cerebral Palsy in the Department of Orthopaedic Surgery, the UCLA Brain Mapping Institute, the Department of Pediatrics and the Tarjan Center in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. It is one of the first studies examining the before-and-after effects of intense lower-extremity physical therapy and the corresponding changes in brain activity measured in magnetic resonance imaging scans.

Camp activities were specifically developed to focus on isolated leg and foot movements that may enhance neuronal activity in the brain — and even muscle function. Niko’s favorite activity, for example, is an interactive video game designed to improve ankle motion; instead of using hand-held controls, he operates the games using a specially designed device that allows him to move the cursor on the screen by rotating his ankle. “I don’t think he even realizes that this is therapy, which, of course, is the whole point,” says Oliver, who also plays these video games controlled by his ankles.

Campers also play modified sports, participate in dance activities, tackle obstacle courses and explore sensory materials, such as sand, water, paint and rubber water toys, with their feet and toes. And, like any other camp, there are arts and crafts, singing and general horsing around. Each week has a specific theme such as sports, entertainment or travel, so that different movements and variations can be woven into the four-week program.
Scientists at the UCLA Eli & Edythe Broad Center of Regenerative Medicine & Stem Cell Research are one step closer to engineering a tool to arm the body’s immune system to fight — and win — against HIV. The new technique harnesses the regenerative capacity of stem cells to generate an immune response to the virus.

“We hope this approach can one day allow HIV-positive individuals to reduce, or even stop, their current HIV drug regimen and clear the virus from the body altogether,” says Scott Kitchen, PhD, associate professor of medicine in the Division of Hematology and Oncology. “We also think this approach could possibly be extended to other diseases.”

Dr. Kitchen and his colleagues are the first to report the use of an engineered molecule called a chimeric antigen receptor (CAR) in blood-forming stem cells. The researchers inserted a gene for a CAR into blood-forming stem cells in the lab, which then were transplanted into genetically engineered HIV-infected mice. The researchers found that the CAR-carrying blood stem cells successfully turned into functional T cells that could kill HIV-infected cells in the mice. The result was an 80-to-95 percent decrease in HIV levels, strongly suggesting that stem-cell-based gene therapy with a CAR may be a feasible and effective treatment for chronic HIV infection in humans.

“Despite the increased scientific understanding of HIV and better prevention and treatment with available drugs, a majority of the 35-million people living with HIV, and millions more at risk of infection, do not have adequate access to prevention and treatment, and there is still no practical cure,” says Jerome Zack, PhD, co-director of the UCLA AIDS Institute and associate director of the UCLA Broad Stem Cell Research Center. “With the CAR approach, we aim to change that.”

Previous studies by Drs. Kitchen and Zack demonstrated similar results with other T-cell receptors, although it is known that HIV could mutate away from those receptors. Another shortcoming of T-cell receptors used in earlier clinical studies was that they could not be universally used in patients because they would have to be individually matched to patients — in the same way organs are matched to transplant recipients.

Dr. Kitchen says the CAR approach is more flexible, and potentially more effective, because it could theoretically be employed in anyone. If further testing continues to show promise, the researchers hope a treatment based on their approach could be brought to human clinical trials within five-to-10 years.

“Engineering Cellular Resistance to HIV-1 Infection In Vivo Using a Dual Therapeutic Lentiviral Vector,” Molecular Therapy, April 14, 2015
Our most vivid dreams and vigorous brain activity come during the rapid eye movement, or REM, phase of sleep. Although scientists have long suspected that our eyes flicker in response to what our unconscious mind sees in our dreams, no one has been able to prove it. Now, an international team of researchers led by Itzhak Fried, MD, PhD ’81, professor of neurosurgery and professor of psychiatry and biobehavioral sciences at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, is the first to demonstrate that during dreams, our eyes and brains respond similarly to how they react to images when we’re awake. The findings offer a rare glimpse into the workings of individual brain cells in the sleeping mind.

Dr. Fried made the finding after implanting electrodes deep into the brains of 19 people with drug-resistant epilepsy in order to identify the origin of their seizures prior to surgery. For up to two weeks, the electrodes recorded the electrical activities of individual neurons in the medial temporal lobe, the bridge between visual perception and memories, allowing Dr. Fried to eavesdrop on the patients’ dreams. “Our earlier studies showed that these neurons fire when we view pictures of familiar people and places — or simply close our eyes to imagine or remember them,” Dr. Fried says. But when the researchers reviewed the data from the electrode recordings, they saw something unexpected in the responses of single brain cells during REM sleep.

“Brain cells in the medial temporal lobe showed a sudden surge of activity each time after patients moved their eyes in REM sleep,” Dr. Fried says. “This electrical pattern closely resembles what happens when we view something new in waking life. We suspect rapid eye movements reflect the instant when the brain encounters a new image in a dream.” The finding implies that REM captures snapshots of dream imagery, suggesting that the same machinery that informs our conscious visual experience also operates during sleep.

Sleep, Dr. Fried says, remains one of the great mysteries of the human mind. “It’s a time when we relive and consolidate our memories,” he says. “Rapid eye movement offers a window into the human visual experience. At these moments, our sleeping brains capture snapshots of the dream world inside our heads.”

Future research will aim to decode dream content based upon brain-cell activity. “The next question is whether or not the neurons are responding to the images the sleeper sees in his dreams,” Dr. Fried says.

The researchers conducted the study on people preparing for epilepsy surgery because, in preparation for the surgery, doctors implant sensors to monitor brain activity, creating a rare collection of findings that cannot be obtained any other way. The scientists used the data to learn what happens in the brain during REM sleep.

Germline Cells Shown to be Vulnerable during Pregnancy

A new study furthers the understanding of the human germline — the cells that create eggs or sperm in humans during prenatal development. The highly specialized germ cells are the only cell type in the body capable of passing parents’ genes on to their biological children. Abnormalities in the germ cells can cause infertility as well as diseases such as germ-cell tumors in young boys and primary ovarian insufficiency in young girls. The study looks closely at how the genetic information of prenatal germ cells is shielded from harm during development, showing that these important cells lack protection that leaves them vulnerable to damage.

“We know very little about how prenatal germ line cells are made in the body,” says Amander Clark, PhD, vice chair of molecular, cell and developmental biology and a member of the UCLA Eli & Edythe Broad Center of Regenerative Medicine & Stem Cell Research. “I am working to understand what they are sensitive to during development and what is protecting them from external environmental factors that could cause them to not work properly.”

A biochemical process that is crucial for protecting human genetic information is called methylation. All healthy human cells are methylated, which acts as a protective coat that safeguards cells from mutations. If cells don’t have methylation, they are vulnerable to damage. Methylation removal, called demethylation, happens infrequently in the human body. One such time is during a short period in prenatal life. This period of germ-cell demethylation was the focus of Dr. Clark’s study, which mapped the amount, duration and location of demethylation in prenatal germ cells from 53 to 137 days of development. The study found that the human germline erases almost all evidence of genome methylation by 113 days of prenatal development. While a large amount of demethylation did occur, some areas of the germ cells retained a small amount of methylation.

“The quality of a person’s germline cells is going to have a huge effect on that person’s ability to have children as an adult,” Dr. Clark says. “Removal of methylation from the germline during prenatal life leaves the germline cells vulnerable to damage. This leads to a critical question: What protects prenatal germline cells from damage or environmental insult during pregnancy?”

Dr. Clark’s model requires her to make human prenatal germline cells from pluripotent stem cells in the lab. In this way, she can study how the germline cells are affected by various factors such as external chemicals or toxins. In the study, Dr. Clark and her team present a detailed ‘reference map’ that contains hundreds of millions of data points. The reference map can be used to ensure that prenatal germ cells created in the lab have the same methylation characteristics as the prenatal germ cells found in a normal human during prenatal life.

“This reference map takes the guess work out of making prenatal germline cells from stem cells,” Dr. Clark says. “Now that we have a high-resolution quantitative analysis of real human germline cells during prenatal life, we can use this information as we make human prenatal germline cells from stem cells for disease-in-a-dish modeling.”

“DNA Demethylation Dynamics in the Human Prenatal Germline,” Cell, June 4, 2015
New Study Opens Window on Mutations in Genetic Architecture of Schizophrenics

While past research has shown the impact of commonly occurring genetic variants on a person’s risk of developing schizophrenia, a new UCLA study has focused instead on rare coding mutations that affect protein function. It found that people with schizophrenia have a higher-than-normal share of these mutations.

“While we cannot point to specific mutations that play a causal role in schizophrenia, we show that schizophrenia patients collectively have more of these mutations than unaffected individuals,” says Loes Olde Loohuis, postdoctoral fellow at UCLA’s Center for Neurobehavioral Genetics in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.

“Genes that are affected by these mutations play a key role in fetal brain development,” says Roel Ophoff, PhD, professor of psychiatry and human genetics and principal investigator at the Center for Neurobehavioral Genetics. “Our finding further supports the hypothesis that schizophrenia is a disorder that may originate during the early stages of brain development.”

Dr. Ophoff has conducted research on the genetic basis of schizophrenia for the past decade. He also is one of the founding members of the Psychiatric Genomics Consortium’s schizophrenia study group. The consortium is an international collaboration of researchers investigating the genetics of schizophrenia and related disorders.

Dr. Ophoff and his colleagues used an array-based technology to screen for 250,000 DNA coding variants in more than 1,000 schizophrenia patients from the Netherlands and compared these samples to those from unaffected individuals. They found that the patients with schizophrenia had more of these variants than patients without schizophrenia. The researchers confirmed these findings in another cohort consisting of more than 13,000 schizophrenia patients and control subjects from the U.K.

“Even though it’s well-known that schizophrenia has a large genetic component, the specific biological mechanisms at work are not well-understood,” Dr. Ophoff says. “Our research shows that rare coding variants throughout the human genome also contribute to this complex genetic architecture.”

Predicting Response to Treatment for Obsessive-Compulsive Disorder

Tens of millions of Americans will suffer in their lives from obsessive-compulsive disorder (OCD). One of the most common and effective treatments for OCD is cognitive-behavioral therapy, which aims to help patients understand the thoughts and feelings that influence their behaviors and then work toward eliminating them. But in an estimated 20 percent of patients, symptoms eventually return after therapy is completed.

A study by researchers at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA suggests that a certain detail from patients’ brain scans could help clinicians identify which people are more likely to relapse after cognitive-behavioral therapy — and why. “The efficiency of brain-network connectivity before treatment predicts the worsening of symptoms after treatment,” says Jamie Feusner, MD ’99 (RES ’03, FEL ’04, ’06), director of the Semel Institute’s Adult OCD Program.

The researchers used functional magnetic resonance imaging (fMRI) to study the brains of 17 people, aged 21-to-50 years old, with OCD. Scans were taken both before and immediately after the patients completed an intensive four-week course of cognitive-behavioral therapy, and the doctors monitored the patients’ clinical symptoms over the next 12 months. “We found that cognitive-behavioral therapy itself results in more densely connected local brain networks, which likely reflects more efficient brain activity,” Dr. Feusner says.

However, the researchers also found that people who had more efficient brain connectivity before they began treatment actually did worse in the follow-up period. Surprisingly, neither the severity of symptoms before treatment nor the amount symptoms improved during treatment was an accurate predictor of the patients’ post-treatment success. The researchers say that knowing more about which patients might not fare well long term could help doctors and patients choose the best course of treatment.

“Cognitive-behavioral therapy is in many cases very effective, at least in the short term. But it is costly, time-consuming, difficult for patients and, in many areas, not available,” Dr. Feusner says. “Thus, if someone will end up having symptoms return, it would be useful to know before getting treatment.”

He added that the findings don’t mean that some people with OCD cannot be helped — just that four weeks of intensive cognitive-behavioral therapy might not be the most effective long-term approach. OCD can also be treated with medication or through cognitive-behavioral therapy that lasts longer than the four-week period evaluated in the study.

“We are now starting to translate knowledge of the brain into useful information that in the future could be used by doctors and patients to make clinical decisions,” Dr. Feusner says. “Although a brain scan may seem expensive, these scans only took about 15 minutes, and thus the cost is not exceptionally high, particularly in comparison to medication or cognitive-behavioral therapy treatments, which over time can cost many thousands of dollars.”

Dr. Feusner and colleagues plan to conduct another study in a larger number of patients in an attempt to validate the findings. They also will assess additional measures of brain function and structure that they hope will offer more clues to determining the long-term course of symptoms in people being treated for OCD.

Why do some youngsters bounce back quickly from traumatic brain injuries and others suffer devastating side effects for years? New research by scientists from UCLA and the University of Southern California suggests that damage to the fatty sheaths around the brain’s nerve fibers — and not the severity of the injury itself — explains the difference. The study identifies biomarkers that physicians could use to predict which children require closer monitoring after a brain injury because they are at a higher risk for poorer prognosis.

The study is the first to combine imaging scans with recordings of the brain’s electrical activity to reveal how damage to myelin, the protective coating around the brain’s circuitry, affects how quickly children and teens can process and recall information after a concussion or other head trauma. “Just as electrical wires are insulated to shield their connections, the brain’s nerve fibers are encased in a fatty tissue called myelin that protects signals as they travel across the brain,” says Christopher Giza, MD (RES ’94, FEL ’96, ’00), director of the UCLA Steve Tisch BrainSPORT Program and professor of pediatrics and neurosurgery. “We suspected that trauma was damaging the myelin and slowing the brain’s ability to transmit information, interfering with patients’ capacity to learn.”

To test their hypothesis, the scientists assigned a series of mental tasks to 32 youngsters ages 8 to 19, each of whom had suffered a moderate-to-severe brain injury in the previous five months. The tests evaluated processing speed, short-term memory, verbal-learning ability and reasoning and judgment. The UCLA team recorded the electrical activity in the participants’ brains to test how quickly nerve fibers transmitted information and then imaged the wiring to assess its structural soundness.

When the scientists compared the results to tests from 31 healthy participants, they discovered dramatic differences. Half of those in the brain-injury group showed widespread damage to their myelin. Those patients’ combined scores on the cognition tests were, on average, 12.2 percent lower than those with healthy brains, and their brain wiring worked at one-third the speed of healthy participants’. In the brains of the other 16 patients in the brain-injury group, the myelin was mostly intact. Those participants processed information as quickly as the healthy children. They also performed cognitive tasks 9 percent better than those who had more myelin damage, although not as well as the people without brain injuries.

The next phase of the research will be to explore how brain biomarkers change during a patient’s first year of recovery. “This is when most people recapture some cognitive function,” says Robert Asarnow, PhD, professor of psychiatry and biobehavioral sciences and psychology at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.

“Callosal Function in Pediatric Traumatic Brain Injury Linked to Disrupted White Matter Integrity,” Journal of Neuroscience, July 2015
UCLA researchers have found that a drug to treat alcoholism, Naltrexone, may also have promise for the treatment of addiction to methamphetamine. “The results were about as good as you could hope for,” says Lara Ray, PhD, director of the UCLA Addictions Laboratory and a member of the UCLA Brain Research Institute.

The study was the first in the U.S. to evaluate Naltrexone for treating methamphetamine addiction. During a four-day hospital stay, each of the 22 men and eight women in the study were given either Naltrexone or a placebo daily. Ten days later, the subjects were readmitted to the hospital for four more days; those who had taken Naltrexone earlier were given placebos, and vice versa. On the last day of each hospital visit, all participants were given intravenous doses of methamphetamine. Three hours later, the researchers asked how they felt and how much they wanted more of the drug.

The scientists found that Naltrexone significantly reduced the subjects’ craving for methamphetamine and that it made them less aroused by methamphetamine. In addition, participants taking Naltrexone had lower heart rates and pulses when they were presented with their drug paraphernalia than those who were given placebos.

Dr. Ray says the results indicated that Naltrexone reduced the rewarding effects of the drug. Naltrexone was well-tolerated and had very minimal side effects. The researchers found that men and women both were helped, although the positive effect on men was slightly smaller. It made no difference whether or not the participants were given Naltrexone during their first or second hospital stay.

Naltrexone works by blocking opioid receptors in the brain. Dr. Ray says that in previous studies, people undergoing treatment for alcoholism reported getting less of a “high” from drinking when they take Naltrexone. Dr. Ray, whose research team studies the causes of drug and alcohol addiction and possible treatments, plans to examine whether or not Naltrexone would be more effective in combination with other pharmaceuticals and at different doses.

Although the new study is promising, it needs to be backed up by clinical trials, Dr. Ray says. The next step in evaluating Naltrexone’s effectiveness for treating people addicted to methamphetamine is already underway with clinical trials sponsored by the National Institute on Drug Abuse.

“The Effects of Naltrexone on Subjective Response to Methamphetamine in a Clinical Sample: A Double-blind, Placebo-controlled Laboratory Study,” Neuropharmacology, April 15, 2015

Researchers at UCLA have found that a protein that serves as a suppressor of cancer diminishes in skin and mouth epithelial cells as the human body ages. No-Hee Park, DMD, PhD, dean of the UCLA School of Dentistry, and his research team have been studying p53, a tumor-suppressor protein known as “the guardian of the genome” because of its involvement in DNA repair, cell cycle regulation and cellular deterioration.

Dark brown staining indicates the prevalence of p53 in the oral tissue of six individuals, ranging from age 28 (upper left) to 74 (lower right).

Image: Dr. Reuben Kim
Patient First to Bridge from Experimental Total Artificial Heart to Transplant

A petite 44-year-old woman at UCLA was the first patient in the world to receive a successful heart transplant after “bridging” with an experimental Total Artificial Heart designed for smaller patients. The 50cc SynCardia temporary Total Artificial Heart is a smaller investigational version of the larger 70cc SynCardia heart, which was approved by the Food and Drug Administration (FDA) in 2004 for use in people awaiting a transplant, and has been used by more than 1,440 patients worldwide. The 50cc device is designed to be used by smaller patients — including most women, some men and many adolescents — with end-stage biventricular heart failure to provide mechanical support until a donor heart can be found.

Nemah Kahala, a wife and mother of five, was transferred to UCLA in March. She was suffering from restrictive heart muscle disease and in critical condition. Her heart failure was so advanced that repair surgery and other mechanical-assist devices could not help. Kahala was placed on a life-support system called extracorporeal membrane oxygenation, but this only works for about 10 days before a person’s organs begin to deteriorate. With the clock ticking, doctors needed to buy time by replacing Kahala’s failing heart with an artificial heart while she waited for a heart transplant. Her chest cavity was too small for her to receive the larger 70cc artificial heart. However, under a one-time emergency use permitted under FDA guidelines, her doctors were able to implant the experimental 50cc device.

“Mrs. Kahala’s condition was deteriorating so rapidly that she would have not survived while waiting for a transplant,” says Abbas Ardehali, MD (RES ’95, ’97), director of the UCLA Heart and Lung Transplant Program. “We were grateful to have this experimental technology available to save her life and help bridge her to a donor heart.”

Two weeks after the total artificial heart surgery, she was strong enough to be placed on the heart transplant list. After a week of waiting, a donor heart was found. “In addition to the high-tech medicine that kept her alive, Mrs. Kahala and her family have exemplified how a solid support system that includes loved ones and a compassionate medical team practicing what we at UCLA have termed ‘Relational Medicine’ plays an important role in surviving a medical crisis,” says Mario Deng, MD, medical director of the Advanced Heart Failure, Mechanical Circulatory Support and Heart Transplant Program at UCLA. Kahala was discharged from UCLA on April 18, 2015. She is grateful to be home in Riverside with her family.

“Looking at ways to maintain levels of p53 as one ages may provide a therapeutic clue to preventing cancer development,” says Dr. Park, who is also a distinguished professor in the departments of dentistry and medicine at UCLA.

Previous studies have shown that p53 accumulates in large quantities as connective tissue cells, called fibroblasts, age and stop dividing. It has been believed that the accumulation of p53 causes cells to stop dividing, which prevents out-of-control cells from growing into tumors.

The researchers found that in epithelial cells lining the skin and the mouth, the level of p53 is reduced rather than enhanced when cells age. Epithelial cells line the major cavities of the body, including most organs, such as the mouth, stomach, small intestine, kidney and pancreas. These cells have a set level of p53 that provides protection from environmental factors and ensures their well-being. With less p53, older epithelial cells have a harder time maintaining the integrity of their genetic material when they encounter carcinogens, which allows cancer to develop.

Dr. Park and his team also reported that in humans, the level of p53 in skin and mouth epithelial cells decreased with age by epigenetic (external and environmental) factors, not by the changes of the p53 DNA sequence. Because some 90 percent of human cancers originate from epithelial cells, this may account, the researchers suggest, for increased incidence of skin and oral cancers in elderly patients.

“Regulation of p53 during Senescence in Normal Human Keratinocytes,” Aging Cell, July 2015
The UCLA Community Based Learning (CBL) Program partners with UCLA Health and the David Geffen School of Medicine at UCLA to assist teens and young adults in underserved communities of Los Angeles with the transition from youth to adulthood and to continue their education and expose them to their potential for careers in healthcare. The program works with community partners, including schools, religious institutions and community-based organizations, to provide youth-development activities, job training and educational services. In addition to services that include basic-skills remediation, tutoring and homework assistance, youth-leadership development and mentoring, CBL operates after-school and summer internship programs in UCLA's hospitals and medical clinics.

For more information, go to: community.medschool.ucla.edu/communitybasedlearningprogram

Photos: UCLA Community Based Learning and NC Photography
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U.S. News & World Report

The doctors, nurses, staff and volunteers of UCLA are honored to be at the top of U.S. News & World Report’s Best Hospitals for 2015-16. We’re especially proud to be the only hospital in Southern California consistently ranked among the best in the country. Still, our greatest honor is serving you by bringing nationally recognized care and compassion to you and your family. To us, it’s what always comes first.

To find a UCLA doctor near you, just call us at 1-800-UCLA-MD1 or visit uclahealth.org
Deanna J. Attai, MD, is a champion of social media who believes that healthcare providers can use online platforms like Twitter and Facebook to reach patients, encourage communication and provide correct medical information.

As more patients seek out medical information and emotional support by turning to social media and the Web — a Pew Research Center study found that 72 percent of Internet users looked online for medical information — physicians and medical providers not only are embracing the platform, but also are beginning to study and learn from it. The utilization of social media seems to be especially successful when used to moderate discussions of certain illnesses or diseases, particularly cancers of the breast, lung and pancreas, forming Internet support groups for survivors as well as individuals currently battling disease.

Deanna J. Attai, MD, assistant clinical professor of surgery and president of the American Society of Breast Surgeons (ASBrS), joined Twitter in 2010 and currently is co-moderator of the Breast Cancer Social Media group (#BCSM). Founded in 2011 by two breast-cancer survivors who met on Twitter and described as "the intersection of breast cancer and all things social media," #BCSM began as a weekly tweet-chat that now has grown into an online community that touches upon all aspects of breast-cancer diagnosis, treatment and survivorship. Dr. Attai recently published a study on the subject of social media as a tool for patient education. She spoke with U Magazine contributor Marina Dundjerski about this growing trend.

Why do you view the use of social media as a critical education tool for healthcare providers and patients?

Dr. Deanne J. Attai: I feel very strong about being involved in patient social media, especially with so many people going online for information. There is a lot of misinformation and erroneous information out there. Patients will come in and say, "I read this online and I read that online," and we'll roll our eyes, but the reality is that we're not doing a good enough job putting reliable info out there. So one of our important roles as physicians is patient education; we need to tailor that education to where patients are at.

Not everyone is going to do local-news interviews, but by getting involved in the various uses of social media, we can make sure that the information patients see is accurate. A physician doesn't have to spend 20 hours a week on social media; there are so many different platforms available that he or she can find one that works. I think medical institutions are increasingly recognizing the value of having physicians’ voices on their websites and other social-media platforms.

What kind of reach does social media have for physician and patient education?

Dr. Attai: Getting good quality information out there is, in a sense, a community service. I have a network of collaborators, and "meeting tweeting" has become very popular. As you listen to the lectures at national gatherings or annual meetings, physicians will send out real-time tweets. On the one hand, physicians can bounce the ideas of 20 colleagues across the country in real-time, and patients who want to know what's active online can also get involved. So it becomes part of public education. At the recent annual meeting of the American Society of Breast Surgeons, 1,400 members attended two-and-a-half days of meetings, and we had about 14-million impressions on Twitter.
At the recent annual meeting of the American Society of Breast Surgeons, 1,400 members attended two-and-a-half days of meetings, and we had about 14-million impressions on Twitter.

It was like each attendee shared his or her tweet with approximately 10,000 individuals. You can’t get that reach unless you use social media.

What have you learned about breast-cancer patients through your use of social media?

Dr. Attai: The biggest thing I’ve learned is that patients often don’t hear what we’re telling them in the office. I was struck by the types of conversations I was having online. I thought, “Aren’t doctors explaining this to their patients?” A lot of time, it does get explained, and in my specialty, breast cancer, I can spend 90 minutes with a patient. But the patient may be partially in shock. She was told three days ago that she has breast cancer and doesn’t hear all that is being said, although she is following along. Other times, patients have misconceptions. Another big thing we’ve learned is that patients are afraid to ask for second opinions. When I got online, my very first moment, there were two friends talking about a mutual friend who was diagnosed with an unusual form of breast cancer. She had received a recommendation to have a mastectomy, but the friends were asking if the patient had had an MRI scan. I wound up on Twitter directly with one of the women who gave me more details, and while I said that I could not give medical advice, I did know there were two ASBrS physician members who were local to her, and she may want to consider getting a second opinion. Several weeks later, I learned that she went to both physicians and wound up staying with one of them and got a lumpectomy instead of a mastectomy and was about to start radiation. That’s one way, as a physician, that I can actually interact with a patient to offer general guidance and empowerment.

How has this realization and your involvement on #BCSM and social media changed the way you interact with patients?

Dr. Attai: As doctors, we think we have a good idea of what our patients are going through. But, really, we don’t. By being involved in #BCSM, I have...
“These online discussions provide a valuable option. But any support group, in person or online, is only as good as its moderator, so we make sure not to have the chats lean toward one person and make sure all viewpoints are expressed.”

learned that there are a lot of side effects to treatment that patients aren’t reporting to us. They put on their good clothes and their lipstick and come to the appointment with their best face forward and say they are doing OK. But patients talking to each other online have told us about many things they aren’t reporting in their appointments. For example, a cancer patient might ask online, “I have a bad taste in my mouth after chemotherapy, does anyone have any suggestions?” Someone might respond, “Try ginger tea. It helps me.” That patient might come for her visit and chemotherapy, but how she feels after chemotherapy isn’t necessarily discussed during the appointment. So now I ask patients different questions. And I have asked some individuals why they don’t tell their doctor everything. The general response is, “It seems like these concerns are so trivial when the doctor is trying to save my life.” Others feel that their symptoms were brushed off. So as a physician in an online community, I encourage patients to bring their symptoms to the attention of their doctors.

How do the weekly chats you co-moderate help patients?

Dr. Attai: Breast Cancer Social Media, or #BCSM, was started by two breast-cancer survivors, Jody Schoger and Alicia Staley, and their first tweet chat was held on July 4, 2011. I missed that first one, but they had so many people come on that I joined in for the second chat, and I was the only physician there. In October 2011, I was asked to be a co-moderator. Some of the topics that are discussed include parenting with breast cancer and how to manage a host of survivorship issues. I learned a lot from listening to that — more about what patients weren’t sharing with us. The chats usually have four questions, structured over a one-hour period. Questions we’ll get might include something like: “It took me that long to move on; have you ever held on to some part of yourself, some part of your life pre-cancer?”

So it’s almost a form of group therapy?

Dr. Attai: It honestly is a form of group therapy. About one-third of patients diagnosed with breast cancer will take advantage of a support group at some point during their treatment. But many women will not attend, for a variety of reasons, including inconvenient meeting times, transportation issues or the feeling that their needs are not addressed. These online discussions provide a valuable option. But any support group, in person or online, is only as good as its moderator, so we make sure not to have the chats lean toward one person and make sure all viewpoints are expressed. We also try to make sure that we don’t have anyone jump down someone’s throat with anti-chemotherapy views or things like that. We want this to be evidence-based,
“Overall, by providing the education and the structure for patients to be able to ask whatever they want, in a non-intimidating fashion, not in the doctor’s office, they are better able to advocate for themselves.”

not how shark cartilage might cure your breast cancer. A lot of patients are not comfortable sharing online — they will sit on the sidelines. So we have many individuals who just read the chats and don’t participate with comments, but they still are getting information. We also reach many individuals in other countries. I can be here in Los Angeles but reaching breast-cancer patients from Italy or Libya or Afghanistan — some places where access to such information is not so readily available.

What have been some of the most popular chats?

Dr. Attai: The chats that have drawn the greatest participation have been when someone has died. A number of years ago, two women with metastatic disease died within a couple of hours of each other. It happened early on a Monday morning, and that night the chat was essentially a memorial service. In this way, we really are a community. We share condolences, virtual hugs, what lessons we have learned, things like that. It’s cathartic and helpful.

You were lead author on a recent report on the use of social media. What did you find?

Dr. Attai: It is one of the first times that we were able to show that, as a result of participating in online support groups, patient education was improved. We also showed that patient anxiety was decreased. There are some limitations to the study — it was a small population over two weeks — but it’s a start to show that there are other ways of getting educational information and support to patients beyond one-on-one in a doctor’s office or in support groups. And when you start thinking about all the people who are not able to go in person to support groups, the growth of the online community is an important first step. Now we know that not only can it be done, but it also can have a measurable impact. For example, based on their participation, 31 percent of the patients in our survey went on to seek a second opinion or brought additional information to the attention of their treatment team. A total of 71.9 percent reported plans to increase their advocacy and outreach as a result of that participation. Overall, there was an increased knowledge reported by 80.9 percent. And anxiety levels decreased. Some 67 percent of patients who had reported high or low anxiety before participating in social media reported low or no anxiety after participation. And no patient who initially reported low or no anxiety went to high or extreme anxiety after participation.

You are an advocate for patient empowerment. How does the use of social media affect this?

Dr. Attai: Overall, by our providing the education and the structure for patients to be able to ask whatever they want, in a non-intimidating fashion, not in the doctor’s office, they are better able to advocate for themselves. We are giving them, in a general sense, the empowerment to know that there are questions that need to be asked, and if they’re not getting these answers, to stand up for themselves. There’s so much untapped potential, and I think we have to be creative and look at this as an incredibly robust tool for both patient and physician education. We are just getting started with this.

“Some 67 percent of patients who had reported high or low anxiety before participating in social media reported low or no anxiety after participation.”


uclahealth.org/getsocial
Robin Williams, who demonstrated a remarkable facility in his professional life to conjure the runs of hyperactivity and the creative twists of pressured thinking that psychiatrists associate with mania, consistently protested that his antics were merely a performance and not reflective of inner turmoil. Yes, Williams confessed, at times he did suffer sadness and, true, he had fallen victim to alcohol and cocaine abuse, but never had he experienced “clinical” depression.

For me, as a psychiatrist, these protestations come as no surprise. We each strive for a coherent image of ourselves in the world, constructing as best we can a singular self from an amalgam of inherited biology and experience. Williams, as a young student at the Juilliard School, discovered early his fast wit and mercurial ability for mimicry. These skills were quickly woven into who he was to become as an extraordinarily talented and funny entertainer. Thus, for Williams to distance his talents as apart from an emotional self that might be aberrant, even dangerous, was an idea impossible for him to embrace. His denial of any disturbed mood state is a reminder that disabilities of mind and brain are both similar and distinct from other illnesses. When illness invades the body, it is perturbing to the mind. But when illness invades the brain, it simultaneously invades the mind, disturbing the pith of who we are and calling into question the subjective integrity of the self.

— A Mood Apart: Depression, Mania, and Other Afflictions of the Self (Basic Books, 2015), by Peter C. Whybrow, MD
f Darkness
When Oscar-winning comedian Robin Williams hanged himself, at the age of 63, in his Tiburon, California, home on August 11, 2014, many wondered why someone who seemed so upbeat would take his own life. His autopsy disclosed he was taking antidepressants and a medication to treat Parkinson’s disease, and that he had Lewy body dementia. Although Williams never publicly acknowledged his struggles with depression, his death briefly opened a dialog about an illness that strikes rich and poor, young and old with equal vengeance.

Brandon, 30, a former community college student, was not famous when he sought treatment for depression at UCLA in October 2014. Since childhood, he felt isolated. As an adult, he couldn’t find a job or a romantic partner. He left his home once a week to buy groceries and spent the rest of his time sleeping and watching TV. Like Williams, Brandon was suicidal. But he worked with a psychotherapist and gradually broke his isolation, taking walks around the block, visiting a neighbor and a friend. He used cognitive-behavioral therapy to defuse his negative self-talk. Today, Brandon leaves his home at least once a day and no longer is suicidal.

Depression is the single most common cause of disability worldwide, affecting more than 350 million people. Brandon and Williams are just two of the 350-million people worldwide who, at any given time, struggle with depression. Less than half seek treatment, and of those who do, only half obtain substantial benefit. Moreover, depression is the single most common cause of disability worldwide, and it is the strongest risk factor for suicide, which in 2010, according to the Institute for Health Metrics and Evaluation, accounted for more deaths than war, natural disasters and murder combined. In dollars-and-cents terms, depression has a devastating worldwide economic impact, including some $116 billion in medical and long-term care costs in the U.S. alone in 2010, and this doesn’t take into account the lost productivity of affected individuals or the impact on their families and communities.

UCLA is trying to do something about that. The UCLA Depression Grand Challenge aims to cut the burden of depression in half by 2050 and eliminate it by 2099.

It indeed is a grand challenge. But Nelson B. Freimer, MD, Maggie G. Gilbert Professor of Psychiatry and Biobehavioral Sciences and director of the Center for Neurobehavioral Genetics in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, believes it is an attainable goal. He leads an interdisciplinary team that, over the next 10-to-15 years, hopes to understand the biological risks and life events that can trigger depression. They will do this by sequencing the genomes of 100,000 people in the UCLA Health network to identify genes responsible for depression; using innovative techniques to screen, monitor and treat those people; conducting cutting-edge clinical and basic-science research to unmask the secrets about depression and develop effective treatments; and encouraging conversations about depression.

The Depression Grand Challenge is one of two current UCLA Grand Challenges, an ambitious campus-wide initiative to address some of society’s greatest problems through cross-campus research collaborations with shared goals. The other Grand Challenge, Sustainable LA, is focused on transitioning Los Angeles to 100-percent renewable energy and locally sourced water by 2050. Both are integral parts of the $4.2-billion UCLA Centennial Campaign. The Depression Grand Challenge seeks to attract hundreds of millions of dollars in funding, correcting the imbalance in support for depression research compared to that for illnesses such as cancer and heart disease.
“We don’t understand depression well; that’s one of the reasons we need the Depression Grand Challenge,” Dr. Freimer says. “Our main hypothesis is that people who have a genetic vulnerability are at increased risk, and certain kinds of stressful events increase the risk of depression. But there also are people with a genetic predisposition who will have depression that seems to come out of the blue, with no obvious stressor.”

Many people think of depression as sadness, but that’s not quite accurate. “Depression is a profound state of sadness that extends usually for weeks, often for months,” Dr. Freimer says. “It involves a host of associated symptoms: difficulty with sleep, eating and concentration; low energy; and feelings of very poor self-worth. In its most severe form, people feel life isn’t worth living and will have suicidal thoughts and will often attempt and frequently complete suicide. It doesn’t just occur on its own. It frequently occurs with, and complicates, other common diseases. It worsens the risk and the course of heart disease, cancer, stroke and Parkinson’s disease. It has a magnifying effect.”

In his recently republished classic, *A Mood Apart*, Peter C. Whybrow, MD, director of the Semel Institute, calls depressive illnesses “malignant and deadly diseases.” They upend everyday behavior — waking, eating, sleeping, assessing the emotions of others. “Depression reflects something that you lose rather than something that is gained,” Dr. Whybrow says. “Depression is a loss of these simple and well-oiled integrated functions that we take for granted every day.”

**THE GREEKS AND ROMANS BELIEVED**

that imbalances in humours, or biles, were responsible for depression. Melancholia, the most severe form of depression, comes from the words *melaina chole*, or “black bile.” Shakespeare and his contemporaries wrote about it. A famous 17th-century book published in Britain was called *The Anatomy of Melancholy*. Abraham Lincoln and Winston Churchill were among leaders who suffered from depression.

Depression is likely not a single disorder but rather refers to many different disorders, each with similar symptoms. Researchers theorize that clusters of genes may increase a person’s vulnerability or, conversely, enhance resilience. There could be hundreds, even thousands, of genes involved. In schizophrenia, for example, 108 loci have been identified. The Depression Grand Challenge will seek to identify genetic contributions for each component of the syndrome of depression, from sleep abnormalities to anhedonia, the inability to experience pleasure. Identifying such phenotypes could lead to effective treatments. As Dr. Whybrow puts it, “In order to attack something like depression, you have to dissect it.”

Depression has a devastating worldwide economic impact, including ~$116 billion in medical & long-term care costs in the U.S. alone in 2010.

The Depression Grand Challenge genetic study will be co-led by psychiatric geneticists Dr. Freimer and Jonathan Flint, MD, who conducted the largest genetic study of depression to date, while teaching at Oxford University. Dr. Flint and his colleagues sequenced the genomes of 10,000 severely depressed Han Chinese women. His study, published in *Nature* in July 2015, identified two loci for major depressive disorder. “It tells you this disease is genetically tractable,” says Dr. Flint, who has joined the Depression Grand Challenge leadership team and assumes a position as professor in the UCLA Departments of Psychiatry and Biobehavioral Sciences and Human Genetics.

Dr. Flint’s research in China will benefit the Depression Grand Challenge. For example, people once thought it would be too difficult to study a population as large as 10,000 people, but his work demonstrates it is possible. At UCLA, Dr. Flint doesn’t plan to sequence 100,000 people all at once,
but rather start with 10,000-to-15,000 of the most severely depressed people, study them in a focused manner and then branch out. He expects there to be both similarities and differences with the severely depressed women he recruited at hospitals in 30 Chinese cities. “The molecular basis should be similar,” Dr. Flint says. “It makes no sense to say that the biology would be different depending on whether you’re born in Beijing or L.A.”

After he completed the China study, Dr. Flint knew the next step would be to study a larger heterogeneous population. Steven Hyman, MD, director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT and Harvard, supports that notion in an article in the November 2014 issue of Nature, “Depression Needs Large Human-Genetics Studies.” Dr. Hyman notes that depression is difficult to study for many reasons, including the diversity of symptoms and variable age of onset. “Amid these traps, one clue to molecular mechanisms of depression has long beckoned: genetic analysis,” Dr. Hyman wrote, asserting that it will require data from 100,000 people. Luckily, the cost of sequencing genomes has declined significantly since the Human Genome Project ended in 2001. But sequencing 100,000 people still will be expensive. The Depression Grand Challenge plans to raise the money through philanthropy, including individuals, foundations, corporations and crowd funding.

Settling into his new office in UCLA’s Gonda (Goldschmied) Neuroscience & Genetics Research Center, Dr. Flint praises UCLA’s effort to address the issue of depression on such a broad scale: “This is a major health problem, ignored by most of the world, which UCLA is going to make a major contribution to changing. How could I not come?”

**THE QUEST FOR A UCLA GRAND CHALLENGE** related to the brain originated in August 2012, when Michelle Popowitz, assistant vice chancellor for research and executive director of UCLA Grand Challenges, and Jill Sweitzer, co-director, asked professors of biological chemistry Kelsey C. Martin, MD, PhD, who now is interim dean of the David Geffen School of Medicine at UCLA, and S. Lawrence Zipursky, PhD, an investigator of the Howard Hughes Medical Institute, to convene a group of neuroscientists on campus from both the College of Letters and Science and the school of medicine to develop a grand challenge in brain science. On August 29, 2012, James S. Economou, MD (RES ’82, ’83), PhD, vice chancellor for research, extended invitations to approximately 30 UCLA neuroscientists to join Drs. Martin and Zipursky to consider what problems related to the brain UCLA could solve if money were not an obstacle. The experts divided into three groups and, during weekly meetings over more than 20 weeks, considered “what is memory,” “the working brain” and “the changing brain.”

Over the ensuing months, “the changing brain” group, led by Dr. Freimer, turned its attention to depression. “It’s such a huge global burden,” says Dr. Martin. “It brings in not just biology, not just clinical care, but also the social sciences, economics and the humanities. Here’s something we don’t understand about what it means to be human. That’s part of what we’re supposed to tackle as scholars at the university.”

In 2013, when President Barack Obama announced a national brain initiative, which has boosted federal funding for brain research, UCLA Chancellor Gene D. Block and Drs. Economou and Martin were his guests at the White House.

**Depression affects individuals of all ages and backgrounds.** The symptoms make ordinary daily activities seem impossible.
As consensus grew to focus on depression, Drs. Martin, Zipursky and Freimer met with philanthropist Garen Staglin, co-chair of the UCLA Centennial Campaign, and his wife Shari. The couple, who are dedicated to improving brain health, enthusiastically endorsed the Depression Grand Challenge and became members of its Leadership Council.

**DRS. FREIMER AND FLINT WILL NEED THE HELP OF MANY OTHERS** to locate the genes that contribute to depression. For one, sequencing the genomes of 100,000 people will create “billions of data points,” Dr. Flint says.

But new tools to look at brain function and computers that can analyze large data sets will enable UCLA researchers from across a broad swath of disciplines, including mathematics and bioinformatics, to look at a large heterogeneous population, in contrast to most genetic studies. Says Dr. Freimer: “We now have the tools that really focus on studying very large numbers of people with the disease and large numbers who don’t have the disease and comparing their genetic material throughout their genomes to identify differences.”

But before the sequencing can begin, the team must identify people within UCLA’s health system who are willing to participate. Michelle Craske, PhD, director of UCLA’s Anxiety and Depression Research Center and co-director of the human-research component of the Depression Grand Challenge, is coordinating formulation of the project’s treatment program and is anticipating a three-tiered approach. Someone with low-level depression will receive an Internet-based self-guided cognitive-behavioral-therapy course. Someone with moderate depression will receive a peer- or coach-guided intervention. The most severely depressed will receive treatment from expert clinicians.

The screening will include suicide prevention. “Eventually, all of the subjects will be screened, and we’ll be able to identify early on who is at risk and take steps when necessary,” says Dr. Craske, who has spent 30 years studying factors that place people at risk for depression and anxiety. “I’m interested in treatment, but also prevention. My work over the years has established that there’s a scarring impact. Once depression hits, it tends to dig deeper the next time around.”

Dr. Flint echoes Dr. Craske. “We can’t just go out and screen those people and discover there’s a few hundred who are likely to kill themselves and just ignore that. We have to intervene,” he says.

After people are screened, they will be monitored for the next 10-to-15 years, using wireless apps to track daily functioning: how they’re sleeping, whether or not they are leaving their house, the sound of their voice, facial expressions, exercise levels and social interaction, to name a few. The information about functioning will inform treatment decisions. For example, “If someone is in the lowest level of treatment and we start getting information from their smart phone that says they’re starting to slow down, withdraw and isolate, that would become a signal to step in,” Dr. Craske says.

**By 2030, depression will be the single largest contributor to the global burden of disease.**

For the next two years, Robert Bilder, PhD, Tennenbaum Professor of Psychiatry, and Carrie E. Bearden, PhD, Joanne and George Miller Family Endowed Chair in the UCLA Brain Research Institute, will be trying out various mobile apps for monitoring large numbers of people at risk for depression. They will investigate patterns of sleep, activity and social contacts, as well as vocal patterns and tones — but not the content of conversations. Using this kind of “passively gathered” information, “we believe we will be able to pick up on the kind of information that will help to predict who is at greatest risk and who may be developing clinically significant or disabling depression,” Dr. Bilder says. “We’re looking at things that have never been widely examined in psychiatry.”
A core group would be brought in for more detailed monitoring in the lab. “You’ve got the whole genomes on one side and the high-level clinical outcomes on the other side,” Dr. Bilder says. “So if we examine the blood, we can determine not only what genetic variations people have that contribute to depression, but also which genes are actively being turned on or off during the initiation of the episode of depression or as a result of treatment.”

Correlating these data with other information such as patterns of brain function, electrical activity, brain blood flow and cognitive performance, the scientists hope to then develop a complete causal map of the relationships of variables at all levels of biological function that are relevant to depression, from the genome all the way up to the syndrome of depression.

By identifying and treating people who might never have sought treatment, the Depression Grand Challenge expects to reduce the burden of depression and reduce overall costs to society. But the team isn’t content to just assume that this will be the case; rather, UCLA economists will be involved in the program from the beginning to rigorously assess whether or not these interventions actually result in benefits to families, to the healthcare system, to employers and to society overall.

THE EXPECTATION THAT THE COMMUNITY WILL GET SOMETHING IN RETURN for its investment in the Depression Grand Challenge is an important point for Dr. Zipursky and others. “It’s not simply that we’re going to diagnose individuals with depression and sequence their DNA so we can identify the genetic contributions to depression. But we will be providing treatment to a large number of patients who are not now receiving it,” he says.

Better yet, they will get state-of-the-art care. Current treatments — from cognitive-behavioral therapy to antidepressants to electroconvulsive therapy — relieve depression in patients about half the time. “A lot of people improve, but not enough,” Dr. Craske says. “And there are some people who don’t improve at all. Right now, the treatments are delivered without a really good understanding of the underlying mechanisms. So we need better treatment.”

Dr. Whybrow, among others, agrees that the Depression Grand Challenge will lead to innovative approaches. “It’s a mistake to think these disorders will be fixed by a new antidepressant or a new method of deep-brain stimulation. Human beings are so varied in their complexity, and especially in their social organization, that there is no simple fix,” he says.

In this effort, the patients will be partners and beneficiaries. “Genetics can be used to better define diseases and ways of improving treatment,” Dr. Zipursky says. “It could be if you have a certain set of genetics, you may find that that individual is suited to cognitive-behavioral therapy and resistant to pharmacological treatments. You may find, conversely, someone who has a certain set of genes may be a particularly good candidate for pharmacological therapy.”

Dr. Craske has been conducting research on patients with anhedonia, which affects a third of people with depression. “How do you help somebody to experience pleasure in the moment, whether it’s a psychological or a biological approach?” she asks. “To date, the treatments that exist are not touching anhedonia at all.”

Indeed, one of the Depression Grand Challenge’s two-year demonstration projects involves the use of fast-acting treatments such as the anesthetic ketamine, which has a reputation as an illicit party drug, to boost the moods of people struggling with anhedonia. Other projects, culled from 80 applications submitted by 120 faculty members, include the remote screening and assessment programs overseen by Drs. Bearden and Bilder; a study of neuromodulators such as serotonin; a look at the role of estrogen and other hormones on brain function; a study of glial cells, non-neuronal cells that are increasingly seen as significant; and an investigation of migraines and depression. The David Geffen School of Medicine at UCLA has provided initial seed funding for these two-year projects.

The demonstration projects are emblematic of the multidisciplinary effort, engaging basic scientists, translational scientists and clinicians. Says Dr. Freimer, “There aren’t many universities that could do this. It requires bringing a medical school and health system together with all the resources you’d have at a large university. We’re unusual to have that on campus.”

Susan E. Fuhs, PhD, program director, is coordinating Depression Grand Challenge activities and participation from across UCLA’s campus. With years of experience running interdisciplinary programs, she agrees that the challenge is a significant step forward in understanding depression and developing effective treatments.
The majority of depressed individuals do not seek or receive any treatment, in large part due to self-blame and social stigma.

programs, she could not resist the chance to participate in a program as ambitious as this one. “To really accomplish our goals, we have to get not just the science right, but also the engineering, the economics, the social science, the public health, the public policy, the business, and the arts and humanities right as well,” she says.

This potential for interdisciplinary collaboration at UCLA was refreshing for Dr. Flint. “You’re not siloed here into departments,” he says. “There’s an ability to cut across disciplines and deal with important problems in a joint fashion. Depression is a condition that has a very substantial environmental component that spans everything from a bad economy to whom you marry, a host of things that sociologists, epidemiologists and educationalists will be involved in.”

Dr. Flint, whose role is to get the genetic study up and running, has a focus of his own: how depression develops on a molecular level to “give rise to a really bad feeling.” Those “bad feelings” may be countered by the genetics of resilience: why some people living in dire circumstances never get depressed. “If I knew why these people never got depressed, and if I understood that at a molecular basis, then there is a possibility I could use that understanding to change the people who’ve got depression into those who are resilient,” Dr. Flint says. “A drug would be the obvious thing, but there might be other ways of doing it.”

Dr. Whybrow’s hope is that the Depression Grand Challenge will bring greater understanding not only about diagnosis, but also on personalized interventions, enabling individuals to recover more rapidly. “But it’s not just about the individual,” he says. “None of us live in a vacuum. So I think the way to think about depression is not only individually, but also how does the individual relate to the social space and how does the social space relate to the individual.”

**SUCH SOCIETAL CHANGES WILL REQUIRE** more than the fleeting attention that follows the suicide of a celebrity like Robin Williams or the whispers after the death of a college student from suicide. With its large student population, UCLA has a particular interest in depression, which frequently manifests itself during the college years. By some counts, suicide is the No. 1 killer of adults between the ages of 18 and 49, exceeding auto accidents.

When Drs. Freimer, Martin and Zipursky spoke about the Depression Grand Challenge to a freshman seminar, a surprising number of students talked about personal struggles with depression or friends who have had suicidal thoughts. “A large fraction of the students who commit suicide have never sought treatment,” Dr. Martin says. “There are a lot of reasons for that, but one is that people are not comfortable talking about feeling depressed. One way to change that is to make it part of a public conversation.”

Through dialog and scientific discovery, the Depression Grand Challenge hopes to lift the veil of depression. “It’s like being an explorer on a globe that nobody has traveled on before,” says Dr. Martin. “We may not know exactly how the answers will affect the treatment of depression, but by understanding how the brain functions and changes with experience, we will understand how it can be changed in a positive way.”

Freelance writer Lyndon Stambler teaches journalism at Santa Monica College.

“None of us live in a vacuum. ... The way to think about depression is not only individually, but also how does the individual relate to the social space and how does the social space relate to the individual.”
By Joan Voight
Illustrations by Otto Steininger

Physicians and medical researchers are harnessing promising new advances in consumer technology, such as 3D printing and wearable sensors to improve patient care in amazing ways.

Tucked deep in the lower level of UCLA’s Center for the Health Sciences is a room that looks more like an inventor’s fantasy workshop than the medical-research facility it is. Tables are piled high with tools, electronics, prototype equipment parts and a few stray robotic arms. Posters on the wall describe pending projects in dense technical language with accompanying photos of futuristic devices. A few young graduate students toil over wires, sensors and plastic gadgets, and the only sound is the repetitive whine of a 3D printer in the back of the room, as its head shuttles back and forth, laying down layer upon layer of hot plastic.

To get here, you must make your way along several empty hallways — the entire building is in the midst of renovation — giving the feeling that one is navigating a secret passageway from the campus to reach an eccentric scientist’s subterranean lair. In fact, this hidden space is doing work that is at the very forefront of technological advances in the service of medicine. Its assemblage of smarts, parts and computers is contributing to an emerging era of personalized, tech-enabled healthcare treatment and medical research that challenges our imaginations.

The transformation already has begun. Cool inventions like replacement bones and inexpensive DIY plastic hands, fingers and other prosthetics are now being created on 3D printers like the ones at UCLA for a fraction of the cost of traditional versions. 3D bioprinting is being used to regenerate skin, blood vessels, tracheal splints and heart tissue. As you read this, somewhere a researcher is working to produce a 3D-printed heart, while another is trying to “print” functioning human kidneys.

Welcome to Medicine 2.0
At UCLA, the work toward turning these sci-fi explorations into reality is taking place in the Center for Advanced Surgical and Interventional Technology (CASIT). Through CASIT, surgeons interact with biomedical engineers to lay the foundations for new clinical interventions. CASIT facilities also include the Gonda Robotic Center, a telecommunications center, a computer-simulation facility and an integrated-operating-room suite. The overall goal of CASIT is to make healthcare more accessible by accelerating the process of turning basic-scientific research into practical medical tools and then finding companies to manufacture them.

One key project for CASIT and its 3D printers is to help prostate-cancer patients avoid the surgical removal of their prostate in favor of removing only the cancerous tumors. Gordon Deboer, a 6-foot-6-inch, 260-pound former Navy pilot, is a beneficiary of that effort. He is among a handful of test cases at UCLA for whom CASIT’s research has played a significant role in helping to guide treatment decisions. Like a lot of men, Deboer, 72, found out during a routine exam a few years ago that results of his PSA test, which measures a protein in the blood that can indicate prostate cancer, were higher than normal. He was referred to Leonard Marks, MD (RES ’73, ’78), professor of urology at the David Geffen School of Medicine at UCLA, who is known for doing advanced work with prostate tumors.

Deboer says when his tumor was identified, he considered surgery vs. less-invasive alternatives. He opted for a UCLA research project, focal laser ablation (FLA), in which a laser destroys only the tumor. The catch with FLA treatment, however, is that it’s difficult for surgeons to discern precisely the extent of the tumor based only on magnetic resonance imaging (MRI) scans. Under the clinical direction of Dr. Marks and the supervision of Warren Grundfest, MD, a surgeon and professor of bioengineering, the CASIT team came up with the idea of employing a 3D printer to assist in FLA preparation.

The approach sounds fairly straightforward. After removing a cancerous prostate from a patient, the 3D printer creates a plastic mold that wraps around the diseased organ. Doctors then can compare the two-dimensional MRI images of the prostate’s tumors to the growths in the actual glands to determine how they differ. That comparative information then is used to help future patients.

“If with MRI alone, we had been chasing shadows,” Dr. Marks says, “Now, we know how a spot shown on the MRI correlates to a spot on the actual prostate. It significantly increases the knowledge we have when taking biopsies and conducting laser surgery.”

In the CASIT lab, it was graduate student Alan Priester, working with Shyam Natarajan, PhD, assistant adjunct professor in the departments of urology, surgery and bioengineering, who figured out how to print a hollow plastic box within which the empty space is the shape of the diseased prostate. The box has slits that exactly match some of the slices of the gland viewed by the MRI; the slits guide the researchers to cut off slices of the gland that directly correlate to the slices visualized in the MRI. A comparison reveals exactly how the computer image is different from the actual prostate. Researchers found, for instance, that MRI images often show that a tumor is smaller than it actually is.

In Deboer’s case, the work done with the 3D-printer-created box helped surgeons to accurately interpret the MRI images of his tumor and remove only what was needed. Deboer underwent the two-hour FLA treatment in September 2014, without any disruption in his work or his life, he reports.

Basic 3D printers, like the ones in the CASIT lab, work by melting hard plastic, then laying out the liquid plastic on a flat surface, similar to printing in ink. Layer upon layer of plastic is deposited, each on top of the other, cooling and hardening as it is laid down. In the end, there is a physical replica of what has been pictured in the computer and fed to the printer.

Software does much of the work, explains Priester. The operator provides the image and picks the density and resolution of the production. The computer then calculates the path required to print out the shape. It takes about six hours — and $4 worth of plastic — to print out each of those individualized prostate molds.

“For people who are learning how to use prosthetic legs and feet, a significant problem is the absence of sensation of their own weight, which throws off their balance and walking ability. CASIT researchers are coming up with a solution — a device that transfers pressure from a user’s artificial foot to the upper leg.”

The 3D printers at the lab have been called into action to make the device more effective. Sensors placed in the sole of a shoe worn by a prosthetic
foot measure the weight put on the foot, and that information is sent wirelessly to a cuff around the patient’s upper leg. The magic of the system comes from dime-sized balloons inside the cuff that inflate and press against the skin according to the pressure placed on the foot sensor, explains Zach McKinney, a bioengineering graduate student working on the CASIT project. For instance, pressure on a sensor in the toe area makes three balloons on the front of the thigh inflate. Weight on the heel sensor makes the balloons on the hamstring inflate.

The balloon system “takes advantage of the natural neural wiring of the body,” says Erik Dutson, MD, clinical professor of surgery and executive medical director of CASIT. Sensations from the foot, if it were there, would go up the leg where the balloons are placed to reach the brain. “So, it’s like we’re using the same telephone pole” to send touch signals to the brain, Dr. Dutson explains. “The human brain learns very quickly how to reinterpret signals on the skin to tell the person where his leg is in space and if his foot has hit the ground,” adds Dr. Grundfest.

Initial tests showed that this sensory-, or haptic-, feedback system helped about half the amputees in the program achieve a more normal gait.

The 3D printers are employed to cheaply and quickly produce tips for the balloons where they press on the skin. So far, three types of tips — from pointed to rounded — have been created to use on patients, depending on the sensitivity of their skin.

Later this year, the haptic-feedback system, including customized balloon tips, will be tested on a few dozen patients who have numb feet due to peripheral neuropathy from diabetes. “We are looking to improve their mobility and confidence and prevent worse problems down the line,” McKinney says.

HEART SURGEONS AT UCLA also are exploring how 3D printing can help them treat infants and children with congenital amputee diseases. In a first for the university, doctors in February prepared for the complicated surgery of a 7-month-old by studying a printed plastic replica of the baby’s heart. The model of the heart was created by a tech company in Belgium that used high-quality MRI images from UCLA and its own sophisticated software and 3D printer. “This first case was a way to learn the mechanism [of the 3D-printing process] and to explore how to proceed,” says J. Paul Finn, MD, professor of radiology and director of Magnetic Resonance Research at UCLA Radiology.

The infant had two abnormalities in the structure of his heart — a rare and complex condition. Examining the 3D-generated plastic heart helped the child’s physicians analyze how best to repair both abnormalities, says Dr. Finn and pediatric cardiothoracic surgeon Brian Reemtsen, MD (RES ’02), who is collaborating with Dr. Finn on the project.

While most 3D printing uses hard plastic, this printed heart was made of a rubbery plastic “that resembles the consistency of a gummy bear,” Dr. Reemtsen says. Because the shape of a heart changes as it beats, it is more realistic for surgeons if the plastic heart is pliable and also can change shape.

This year, doctors expect to use printed hearts as part of surgery preparation for another five infants. The potential is enormous, Dr. Reemtsen says. “With a physically accurate model of a heart, we can establish if only one incision is needed instead of two, or we can see if it’s possible to not just correct the problem, but also to change a baby’s anatomy to normal, which will allow the child to live decades longer than he or she would otherwise,” he says. “We can also practice a procedure beforehand with less time pressure. Cardiac surgery is a timed event.”

In addition to babies, UCLA doctors at the Ahmanson/UCLA Adult Congenital Heart Disease Center are using 3D printing to create models of adult hearts to practice surgery beforehand for procedures such as a difficult heart-valve replacement. "Harnessing 3D printing helps us better address the most complicated cases,” says Jamil Aboulhosn,
MD ’99 (RES ’02, FEL ’05, ’06), Streisand/American Heart Association Endowed Chair in the Division of Cardiology and director of the Ahmanson/UCLA Adult Congenital Heart Disease Center.

Another enormous plus, Dr. Reemsten says, is that having a model of an actual heart enables surgeons to have something to show parents and heart patients when they are explaining the procedure and its risks. Later this year, researchers working on the heart program expect to start brainstorming and sharing resources with CASIT.

WEARABLE GADGETS LIKE FITBIT

FITNESS TRACKERS and the new Apple Watch get lots of media buzz, but the biggest impact of portable sensors that collect and analyze data will be in medicine. Devices much like Star Trek’s tricorder, the fictional sensing device that doctors used to diagnose diseases and collect information about a patient’s bodily functions, could be in our future.

UCLA medical researchers are moving the field forward, working on tools that give doctors hard information where they once had only patients’ imperfect memories. Among the most impressive efforts is the work being done with heart-surgery recovery and stroke therapy.

This year, for example, about a dozen UCLA heart-surgery patients have gone home with toolboxes that contain a pre-programmed computer tablet and wireless digital sensors that patients use to measure their weight, pulse and heart rate. These measurements are automatically transmitted to a nurse practitioner, who reviews the patient’s information and uses the tablet to hold video calls — similar to Skyping on an iPad — to discuss recovery progress and visually check on the patient.

“Everything is extremely easy for patients. They just turn on the computer tablet, and the screen asks them questions and tells them exactly what to do,” explains cardiothoracic surgeon Peyman Benharash, MD ’02 (RES ’08, FEL ’10), who oversees the heart-surgery-telehealth program.

Data from this program alert the patient’s healthcare team about abnormal heart rhythm, lung problems, weight gain from fluid retention and other problems before they get to the point that the patient has to be hospitalized.

About 20 percent of heart-surgery patients in the U.S. are readmitted to a hospital within 30 days of discharge, according to researchers at Duke University Medical Center. In contrast, the readmission rate has dipped to about 6 percent among heart-surgery patients who participate in this program and other in-home web-conferencing programs, according to a recent UCLA study, Dr. Benharash says.

STROKE THERAPY STOPS TOO SOON or the goals are set too low, partly because therapists and doctors are not digging deeply enough into the scientific bases for rehabilitation, according to the UCLA Neurological Rehabilitation and Research program. Bruce Dobkin, MD (RES ’77), professor of neurology and director of the program, is trying to address that problem with networked sensors that patients wear on their ankles.

How much and what kind of physical activity patients get after they leave the hospital plays a huge part in recovering from a stroke, doctors say. The trick is to get objective information about people’s real-life exercise patterns. The ankle sensors in Dr. Dobkin’s program, which were developed with William Kaiser, PhD, professor of

“We have invented a new vital sign — your intestinal rate — a measure of how quickly your intestines are moving.”
electrical engineering in the UCLA Henry Samueli School of Engineering and Applied Science, record accelerations and decelerations as the person moves. Then a smartphone sends the data to computer programs that analyze the type, quantity and quality of the movements. Walking speed and distance, asymmetries in leg movements and diligence in practicing particular skills can all be recorded. Twice a week, a therapist calls the patient wearing the sensors. Based on the data, the patient gets feedback on his or her activities and advice on how to improve his or her daily exercise.

Traditionally, stroke patients see a doctor a month after being released and then two or three months after that. “Crucial recovery time is wasted if the patient isn’t active between these doctor visits,” Dr. Dobkin says. Currently, researchers at UCLA and the University of Miami are examining whether or not the data collection and feedback from the sensors increase daily exercise, improve walking and reduce risk factors for repeated stroke or heart attack. They expect to have an adequate sample by fall 2016.

When the California Rehabilitation Institute — a partnership among UCLA Health, Cedars-Sinai and Select Medical — opens in Century City next year, “the plan is to have recovering stroke patients wear these activity sensors both in the hospital and at home,” Dr. Dobkin says.

BECAUSE SURGERY SHUTS DOWN THE DIGESTIVE SYSTEM, determining when a person’s digestive tract can accept food again has been a hit-or-miss proposition. With a new device — a pair of disposable, one-inch sensors that people wear on their abdomens to sense and record the vibrations of the digestive tract — based on research by a UCLA physician and engineers at the UCLA Wireless Health Institute, that no longer is the case.

“Working intestines have very specific vibrations as they function, which we can now measure. That information tells us when the patient is ready to eat full meals and can be released from the hospital,” says Brennan Spiegel, MD (FEL ’04), professor of gastroenterology. A computer at the patient’s bedside analyzes the information to tell doctors when and how the person should eat, he says. Clinicians asked for a simpler system, so the team organized the data into a “stoplight” with three colors — red for “no feeding,” yellow for “start liquids” and green for “start solids.”

The research by Dr. Spiegel and Dr. Kaiser, who is co-director of the UCLA Wireless Health Institute, which is an interdisciplinary collaboration of experts from engineering, medicine, nursing and public health, has been licensed, and a device, AbStats, is in the final stages of Food and Drug Administration approval. The process of getting a device in the marketplace “means we have to do everything perfectly — the design, manufacturing and costs — and it has to be usable and be easily wearable,” Dr. Kaiser says. “Then the final hurdle of getting regulatory approval is critical.” The start-up developing AbStats, GI Logic, expects to launch the device in hospitals by September 2015, with plans to sell to consumers in 2016.

Eventually, cheap, disposable wireless AbStats sensors and a simple smartphone app could monitor the millions of people with irritable bowel syndrome and allergies to gluten, lactose and other substances. “We have invented a new vital sign — your intestinal rate — a measure of how quickly your intestines are moving,” Dr. Spiegel says.

IN THE BEST CASES, TECHNOLOGY AND MEDICINE should have a symbiotic relationship that reinforces each other, CASIT’s Dr. Grundfest says. But all the excitement from emerging technology in health needs to be tempered with consideration of the human side of medicine. “First, we need to listen to patients and clinicians in the trenches about their unmet needs and then decide if more tech and digital data would really help,” Dr. Spiegel says.

Indeed, in the field of bioengineering, Dr. Grundfest says, it is clinicians who set the goals that UCLA engineers in the lab then work to achieve. With that mindset, possibilities abound. Soon, medical teams at UCLA will be fabricating custom devices and making models of body parts in-house, thanks to 3D printing. And with big data, they will be able to help high-risk patients through telehealth, mobile health applications, wearable biosensors and even social media. As Dr. Spiegel puts it: “That is the path forward.”
White Knight
By Robin Keats

Atilla Uner, MD (RES ’97, FEL ’99, ’09), received the emergency call on Saturday morning, April 25, 2015, within hours after a 7.8-magnitude earthquake devastated Nepal. Thirty-one hours later, he and his teammates on Urban Search and Rescue Task Force USA 2 — 52 firefighters and paramedics, three civil engineers, six search dogs and two physicians — were setting up camp in Kathmandu.

It was the latest disaster to which Dr. Uner, clinical professor of emergency medicine, has deployed. In 2005, he went to Mississippi following Hurricane Katrina. And there have been the daily localized disasters that bring people through the doors of the David I. Saperstein Emergency Center at Ronald Reagan UCLA Medical Center.

It is a world to which Dr. Uner has been drawn since he was a teen, growing up in Germany. In Nepal, it was Dr. Uner’s role to care for survivors of the earthquake and also to keep the members of his team healthy. After two weeks of intense search-and-rescue and emergency medical practice in Nepal — including taking part in the rescue of a 15-year-old boy found buried in the wreckage of a collapsed building — he was set to return to Los Angeles. “By that time,” he says, “we had left our camp and were packing up because no one could still be alive in those buildings. Then, a second quake hit (on May 12), and we got right back into rescue mode.” A helicopter flew him to the village of Charikot, where he triaged 26 survivors. He arrived back home three days later.

“What we did in Nepal was not so much Third World humanitarian aid but even more,” Dr. Uner says. “We did what I’ve always liked, and that’s the emergency-medicine way of healthcare. It’s sort of out there. It’s part of a huge organization. It has strategies and tactics. It’s an operational environment as opposed to an in-house one.”

Dr. Uner’s move toward a career in emergency medicine began when he joined the Bavarian Red Cross as an alternative to mandatory military service. For a young man who had done well in school but was “bored stiff,” the freedom to drive at high speed through the city streets was exhilarating. “I was a 19-year-old medic on an ambulance, and I loved it,” he says. “The lights and the siren, going into people’s homes and seeing crazy situations, I relished the experience. I wanted to be a medic forever.”

He might have followed that course if not for the lure of the Red Cross’s rescue helicopter. “It was manned by a doctor, a medic and a pilot. I wanted to be that medic,” Dr. Uner says. But there was a hitch: He would have to serve five years with the Red Cross before he could go airborne. “I never had any intention of going to university,” he says. “I was going to be a medic!” But rather than wait five years before he could fly as a medic, he elected to spend six years and become a doctor — and then fly on the helicopter as the MD.

He entered medical school at the Free University of Berlin in 1984. It was a time, however, when there was an overabundance of physicians in Germany. “On my first day in medical school, there were 700 students. The professor told us that after six years of study, only 50 percent of us would find a job as a doctor. ‘You’re going to drive a taxi,’” he said the professor bluntly told them.

Dr. Uner was not deterred. He wrote to universities in the United States to ask that he be allowed to come to work hospital rotations during his last year of medical school. He then flew to Boston, bought a motorcycle and spent the next 10 months traveling across the country and working.
his way through rotations at Harvard, Beth Israel Hospital in New York, the University of Indiana in Indianapolis, the University of Texas at Houston and, finally, a UCLA rotation at Cedars-Sinai Medical Center. “I had two suitcases that I’d send ahead by Greyhound bus to my next stop,” he says.

Despite what he thought would be long odds of an American medical school taking a foreign-born applicant for a residency, UCLA accepted the bilingual doctor. In addition to completing his training in emergency medicine, Dr. Uner earned a master’s degree in public health.

At the age of 53, he is not letting up on any of his pursuits, whether it’s his emergency work at UCLA, his volunteer search-and-rescue work through the United States Agency for International Development’s Office of U.S. Foreign Disaster Assistance or zooming around, just for the pure joy of it, on one of his three motorcycles.

“It always feels good to help people who otherwise can’t be helped,” he says. “I get a lot out of it. The other thing is, I’m an immigrant. I came here from Germany in 1993 looking for a better life. So this is me paying back for the fact that 300-million Americans took me in when I walked through that door.”

**Robin Keats** is the author of three nonfiction books, has written for numerous magazines and creates nonfiction TV programming.

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**Awards, Honors & Grants**

**Dr. Clarence Braddock III**, vice dean for education and chief medical education officer at the David Geffen School of Medicine at UCLA, was named chair of the board of directors for the American Board of Internal Medicine. Five early-career researchers from the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA received 2015 Friends Scholars Awards. The recipients are Dr. Eliza Congdon, assistant professor in the Department of Psychiatry and Biobehavioral Sciences; Dr. Michelle Rozeman, clinical instructor in the Department of Psychiatry and Biobehavioral Sciences; Dr. Nanthia Suthana (PhD ’09), assistant professor of psychiatry and biobehavioral sciences and neurosurgery; Dr. April Thames, assistant professor in the Department of Psychiatry and Biobehavioral Sciences; and Dr. Yvonne Yang, fellow with the VA Mental Illness Research and Clinical Center and a co-investigator with UCLA faculty on the neurobiology of psychosis. Dr. Gabriel M. Danovich, medical director of the UCLA Kidney and Pancreas Transplant Program, received the 2015 Sherman Mellinkoff Faculty Award, the highest honor bestowed by the David Geffen School of Medicine at UCLA.

**Dr. Sally Frautschy**, professor-in-residence in the Department of Neurology, received a $300,000 grant from the Paul G. Allen Family Foundation and the Alzheimer’s Association to fund her work on brain inflammation in Alzheimer’s disease.

**Dr. Alan Garfinkel**, professor of medicine and physiological science, was selected to receive the UCLA Academic Senate’s 2014-15 Distinguished Teaching Award. Four UCLA researchers received a total of $2.5 million in Distinguished Investigator Awards from the Paul G. Allen Family Foundation to support their work to grow mature human brain cells in the laboratory. The researchers are Dr. Daniel Geschwind, Gordon and Virginia MacDonald Distinguished Chair in human genetics; Dr. Steve Horvath, professor of human genetics and biostatistics; Dr. William Lowry, associate professor of molecular, cell and developmental biology; and Dr. Kathrin Plath, professor of biological chemistry. Drs. Geschwind, Lowry and Plath are members of the UCLA Eli & Edythe Broad Center of Regenerative Medicine & Stem Cell Research.

**Dr. Leonid Kruglyak**, professor of human genetics and biological chemistry, received the 2015 Curt Stern Award from the American Society of Human Genetics.

**Dr. Kelsey C. Martin**, a senior administrator and professor of biological chemistry and of psychiatry and biobehavioral sciences, was named interim dean of the David Geffen School of Medicine at UCLA.

**Dr. Karin Nielsen**, professor of pediatric infectious diseases and director of the UCLA Center for Brazilian Studies, received the 2014 Brazilian Diaspora Award, which recognizes Brazilian professionals living abroad and invites their input into Brazilian public policy in their areas of expertise.

**Dr. Raphael Rose**, associate clinical professor in the Department of Psychiatry and Biobehavioral Sciences and associate director of UCLA’s Anxiety and Depression Research Center, was awarded a grant from the National Aeronautics and Space Administration for research to support the health of astronauts on deep-space missions.

**Dr. Sunil Sheth**, fellow in radiological sciences, received the $154,000 Lawrence M. Brass, MD, Stroke Research Award from the American Brain Foundation and the American Heart Association/American Stroke Association to advance research on a lab test he invented to diagnose stroke from a single drop of blood.

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**In Memoriam**

**Dr. Carol Kruse**, professor of neurosurgery and a recognized leader in immunological therapy for brain cancer, died March 28, 2015, in Los Angeles. She was 61 years old. As a member of UCLA’s Jonsson Comprehensive Cancer Center, Dr. Kruse worked on the development of alternative therapies for treating patients with primary malignant brain tumors She is best known for having conceived of allogeneic cytotoxic T lymphocytes (AlloCTL), which target brain tumors by their expression of the HLA Class I of human leukocyte antigens.

**Dr. Paul H. Ward**, a leading figure in the field of head and neck surgery, died April 9, 2015, in Pauma Valley, California. He was 86 years old. Dr. Ward came to UCLA in 1968 as chief of the Division of Head and Neck Surgery. Before coming to UCLA, he was chair of the Division of Otolaryngology at Vanderbilt University School of Medicine. Dr. Ward authored more than 330 scientific publications and 12 books, and he was a consulting editor or editorial advisor for many otolaryngology journals including Laryngoscope, Head and Neck Surgery, Annals of Otology, Rhinology and Laryngology, Otolaryngology-Head and Neck Surgery and American Journal of Otolaryngology. Dr. Ward trained generations of residents, 26 of whom have gone on to become department chairs, and one dean.
Postcard from Malawi

Faysal Saab, MD ’12, is a third-year resident in internal medicine and pediatrics. He is a member of the UCLA Department of Medicine Global Health Track and has worked in the Partners in Hope (PIH) AIDS clinic in Lilongwe, Malawi, several times since he became a medical student. Over the last decade, he also has been a medical volunteer in Costa Rica and Nicaragua and in Palestinian refugee camps in Beirut, Lebanon. He has a passion for providing medical care to the underserved and wishes to continue his global-health activities throughout his career.

“Why do you go?” It is a question I hear frequently from coworkers, friends and family when they learn that I will be traveling to work in Malawi. At first, it may not appear to make much sense; I am a resident physician training in the United States. How does Malawi fit into that?

I traveled to Lilongwe, the capital city, earlier this year through the UCLA Internal Medicine Residency Program’s Global Health Track. The track operates within the UCLA Center for World Health, which collaborates with several international clinical sites to provide global health education for medical students and residents. My initial visit was as a medical student three years ago, and each time I have spent three weeks working at PIH, a nonprofit organization operating a joint clinic and hospital in Lilongwe. The clinic relies on private donations and grants from organizations like USAID and has very limited resources compared to clinics in the United States.

At PIH, I learn to manage patients with HIV/AIDS and the opportunistic infections that often complicate their course. During my visits, I have noted that, according to the World Health Organization, Malawi is among the poorest countries in the world; that its healthcare budget is $77 per person per year, compared to $85,000 per person per year in the U.S; that life expectancy in Malawi is 55 years; and that one-in-10 people have HIV. It is absolutely jolting to witness such devastating disease in the context of devastating poverty.

In the depths of this tragedy, for a UCLA resident there is much to be learned. When I work in a place like Malawi, I frequently face manifestations of diseases I otherwise may never encounter. I see Kaposi’s sarcoma, a very rare cancer in the U.S. but the most common one there. I see malaria, a mosquito-borne infectious disease, in its most severe forms. I see disseminated tuberculosis, an exceedingly unusual case in the U.S. I see the adverse effects of antiretroviral medications, rare forms of meningitis and uncontrolled warts caused by HPV. The sheer volume of these diseases trains my eyes to recognize them in an instant.

In addition to learning from such cases, working in Malawi has shaped the way I practice medicine. Given the paucity of labs and imaging modalities at my disposal, I rely almost exclusively on my patients’ histories and lean more heavily on my physical-exam skills in order to build a differential diagnosis. Before I order a test, my mind scans through a checklist: Is a test crucial to obtaining this information? Will the result change my patient’s management? Can my patient even afford it? I am forced to adopt a mindset that considers the limited resources around me, and I return to UCLA carrying that mentality with me. Despite the seemingly limitless resources we have in the U.S., we lead the world in healthcare spending with 17 percent of our gross domestic product spent on healthcare. Maybe there is something to be learned from Malawi about resource conservation.

Residents also have much to contribute to hospitals and clinics like PIH. Because there is only one doctor for every 65,000 people in Malawi, most of the healthcare is delivered by clinical officers, individuals with three years of health education followed by a year of internship. Although they do not attend medical school, they are trained to practice a mostly successful strategy of pattern recognition. They rely on the
fact that certain diseases are very common in Malawi — if a patient’s symptoms appear consistent with tuberculosis, he or she likely has tuberculosis, for instance, and treatment can empirically be initiated. They see thousands of these cases that often present similarly, and their experience begins to guide them. On a public-health level, they are playing the odds, doing the most good for the most people. However, every so often one disease can mimic another. As residents, we are trained to consider a wider variety of diagnostic possibilities. In one instance, upon performing a more thorough history and physical exam, we showed that a presumptive diagnosis of tuberculosis was actually lung cancer, radically changing the patient’s medical treatment and prognosis. It was an educational opportunity for the clinical officers, who are not typically trained to recognize such a case.

Beyond medicine, my work in Malawi allows me to peer into often forgotten walks of life. My visits ground me and remind me of the dire conditions that exist outside my bubble — that access to clean water is not guaranteed, that electricity is a luxury and that for many people, transportation often consists of only two legs. These visits give me a strong appreciation for what I have and a valuable perspective. They help me remember that if we all threw our problems into a pile and saw everyone else’s, we would quickly grab ours back.

That is why I go to Malawi.

In Her Own Words: Lynn L. Huang, MD ’07

Lynn L. Huang, MD ’07, took two years off during medical school to earn a master’s degree in public health, health policy and management from the Harvard T.H. Chan School of Public Health, and she completed a research fellowship at the National Institutes of Health/National Eye Institute in Bethesda, Maryland. She completed her residency in ophthalmology at Albert Einstein College of Medicine in New York and a fellowship in vitreoretinal surgery at Massachusetts Eye and Ear Infirmary. After seven years on the East Coast, she has returned to Southern California, and she now is assistant professor of ophthalmology at Loma Linda University. Outside of her busy practice, she continues to pursue her passion for dance and travel.

My story begins in China, where I was born. From the time I was 12 years old, I saw the world through the lens of an immigrant from a divorced family. Difficulties can provide insights and inspiration. My goal to become a physician grew out of my desire to help people during their most vulnerable moments. I distinctly remember writing about it in my application essay to medical school.

Fast forward two decades, and the words I wrote in the essay ring true. Today, as an assistant professor of ophthalmology, I maintain a busy clinical practice while teaching in the residency and fellowship programs. I have the opportunity to serve an ethnically diverse population of patients from all walks of life. I also have traveled abroad to Honduras as part of a medical mission. Currently, I am involved with a number of clinical trials on novel therapeutic agents and treatments for retinal diseases.

Medicine is not an easy path, yet it is rewarding. As an ophthalmologist, I make decisions and perform procedures on a daily basis that have an impact on the vision of my patients. There is nothing comparable to the relationship between a physician and a patient, which stands firm despite major shifts in the political and healthcare systems. I am very fortunate and privileged to be where I am today.

For more information about the UCLA Center for World Health and its Global Health Education Programs, go to: worldhealth.med.ucla.edu

To learn more about Partners in Hope, go to: pihmalawi.com
The Business of Medical Innovation

Maria Berkman, MD ’09, MBA, is a director at Broadview Ventures in Boston, Massachusetts, the venture-investment arm of the Leducq Foundation. Broadview’s mission is to accelerate the development of promising technology in cardiovascular and neurovascular diseases through targeted investments in, and support of, early-stage ventures. At Broadview, Dr. Berkman shares responsibility for day-to-day operations, including the identification and screening of new opportunities, diligence, negotiation of deals and portfolio-company board involvement. Prior to joining Broadview, Dr. Berkman was a management consultant with Monitor Group (now Monitor Deloitte), where she specialized in life sciences with a focus on corporate strategy, franchise and asset-level commercialization, and competitive strategic planning. She also completed the Transitional Year Internship Program within the Partners HealthCare System in Boston.

I was one of seven students from the class of 2009 enrolled in the MD/MBA joint-degree program at UCLA. Of those seven, I am the only one who has pursued a career outside of medicine. Following an intern year in Boston, I joined Monitor Group, a management-consulting firm focused on strategy projects for Fortune 500 biopharmaceutical companies. Consulting is like residency for the business world, and after two years of ‘training,’ I was fortunate enough to join Broadview Ventures, a venture-capital firm entirely funded by the Leducq Foundation, a philanthropic organization that focuses on cardiovascular disease as its mission.

Because we invest in very early-stage companies, the proposals I review are typically in the preclinical and/or translational-research phase, making a substantial part of our diligence scientific in nature. In diligence, I spend roughly equal amounts of time leveraging my medical knowledge and my business degree. In addition to ensuring that the companies in which we invest have outstanding science, data and intellectual property as a foundation, we also thoroughly evaluate their business plans, management teams and financial projections — a sound investment has to have those components.

One of my first investments at Broadview was Zumbro Discovery, founded by John Burnett, MD, of the Mayo Clinic, one of the leaders of the natriuretic peptide field. Zumbro had just completed its large animal studies, and with Broadview’s investment, it is now completing enrollment of a Phase 1b trial in resistant hypertension. In an equally exciting milestone, thanks to Broadview’s investment, Vascular Graft Solutions (VGS) has been able to bring an external-support device for vein grafts in coronary-artery-bypass grafting to the market in Europe. VGS is the first of Broadview’s portfolio companies to commercialize. Seeing our portfolio’s researchers and entrepreneurs take products from concept to patient is exciting and gratifying and one small step toward addressing numerous unmet needs in the cardiovascular space.
Tribute to a Mentor and Friend

The path that led Mark Morocco, MD (RES ’02), professor of emergency medicine, to the Emergency Department of Ronald Reagan UCLA Medical Center began with a life-threatening injury he suffered in a car accident while working in the arts in New York City. Observing the work of emergency-medicine, trauma-surgery and critical-care teams while in the hospital helped him make a decision that would lead to medical school at age 34. After completing his residency, Dr. Morocco spent a number of years as a medical supervisor and staff writer on the television show ER before returning to the UCLA faculty in 2006 as associate residency director for emergency medicine at Olive View-UCLA Medical Center. He recently completed two terms as president of the UCLA Medical Alumni Association. Throughout his time at UCLA, Dr. Morocco enjoyed the friendship of Marshall Morgan, MD, chief of emergency medicine, who died in April 2015, at the age of 73.

Marshall was famous as a founding father of emergency medicine, which in the 1970s was emerging as a new specialty. He was a giant in our field, and no matter where you went, when someone found out you were from UCLA, they would ask, “Is Marshall still there?” or “Do you know Dr. Morgan?” It was a little like knowing Elvis.

Here is how we met, and it says a lot about who Marshall was. When I was a first-year medical student, I came home to Los Angeles for spring break, looking for something medical to do during the summer between my first and second years, after which medical students work year round for the remainder of their education. I knew I wanted to work in a trauma center, so I cold-called the medical directors of every big emergency department in the city. I would call the general number, get to the administrative office, chat up the secretary, figure out who was in charge and then leave a voicemail or a message. I must have called 20 places. Of course, no one called me back.

Except Marshall Morgan, the chief at UCLA, who warmly invited me to meet him for 15 minutes the next day — “if that’s convenient,” he said. After sizing me up, he introduced me to a couple of faculty members who were world-famous and had plenty of projects for eager medical students. I asked him why he called back, and he said something like, “Because you asked for help, and in my position I can help, and if I didn’t, it wouldn’t be right or polite.”

Marshall worked every day to balance what was right and polite with the demands of his work, no matter who the person was with whom he was engaged. He loved people, and he had an eye for seeing what was special in each person he met. But maintaining that level of commitment to patients, students, nurses, residents and faculty was not always easy. Doing the right thing seldom is, but that is how Marshall defined himself. No aspiring physician or professional colleague could ask for a braver or better role model.

This characteristic made him more famous for his compassion and his advocacy than for his research. I think he turned his keen eye on himself and recognized this talent, and he advanced UCLA’s Department of Emergency Medicine and residency program using this formula: Find great people, support them and get out of their way. He made my career choices easy; because of him and the tone that he and his faculty set, UCLA was always No. 1 on my rank lists.

His compassion extended to each patient, especially the ones who were marginalized by homelessness, race or some other stigma. In emergency medicine, we don’t get to pick our patients, and Marshall reminded us that each patient had a story and that each person mattered and deserved our best care, every day, one person, one patient at a time — long before “patient-centered care” became emphasized.

When he came to me as a patient, the night his illness was diagnosed, he waved aside my offer to see him without the involvement of house staff first. Of course a resident should see him, anything else wouldn’t be right, he said. “The patients are our teachers,” Marshall would say. And he taught the right lessons to the very end of his life, living every day what he taught.

(From left) Drs. Mark Morocco; Marshall Morgan; Richelle Cooper, clinical professor of medicine/emergency medicine; Ilene Claudius (MD ’97, RES ’02), USC associate professor of clinical emergency medicine; and Jerome Hoffman, professor emeritus of medicine/emergency medicine, during Emergency Medicine grand rounds in 2007.

Photo: Courtesy of Dr. Mark Morocco
The Children’s Discovery and Innovation Institute at Mattel Children’s Hospital UCLA held its third annual Kaleidoscope Ball on May 2, 2015, at 3 LABS in Culver City, California. Event chairs Beth Friedman, Amanda Brown Chang, Chloë Sommer, Marcelle Frey and Tim Campbell welcomed more than 750 guests to the sold-out event, which raised more than $2 million for pediatric research. The evening began with a cocktail reception and art show, followed by dinner, an awards ceremony and musical entertainment.

“The UCLA Children’s Discovery and Innovation Institute is all about research, and research is what makes our institution great,” said Dr. John C. Mazziotta (RES ’81, FEL ’83), vice chancellor for UCLA Health Sciences and CEO of UCLA Health, as he welcomed guests. “The institute’s research areas are cross-disciplinary, which in the academic world is groundbreaking.”

Actress Goldie Hawn hosted the event and presented actress Halle Berry with the hospital’s Kaleidoscope Award, which was established to recognize members of the arts-and-entertainment community whose professional achievements and humanitarian efforts improve children’s lives. “I know, as a mother of two, how important children are,” Berry said upon receiving her award. “And they are the most important, the most vulnerable, the most valuable assets that we have on our planet.”
Kelvin Davis, senior partner at TPG Capital, received the Philanthropic Leadership Award, and actress Halston Sage accepted the Young Luminary Award. Four-year-old Charlie Croxall, who was a patient at UCLA, was presented with the Extraordinary Children’s Award by actor Chris O’Donnell.

Actress Poppy Montgomery helped host the evening, and guests enjoyed a performance by Grammy-nominated artist Aloe Blacc and music from DJ Michelle Pesce.

In celebration of the evening’s theme, “Los Angeles: An Art-Full City,” world-renowned street artists came together and organized a selection of art pieces that were auctioned. Award-winning street artist Mr. Brainwash collaborated on a piece with Kaleidoscope Ball presenting sponsor Harry Winston that paid tribute to Winston as “Jeweler to the Stars.”

“The funding raised at the Kaleidoscope Ball will be used to support critical research that benefits children like Charlie Croxall around the world,” said Dr. Sherin Devaskar, Mattel Executive Endowed Chair in Pediatrics, physician-in-chief of Mattel Children’s Hospital UCLA and executive director of the UCLA Children’s Discovery and Innovation Institute. “We are very grateful to our co-chairs, sponsors and supporters who made this evening an incredible success.”

For more information, contact Melanie Burzynski at:
(310) 267-1835
Landmark Gift Paves the Way for Breakthroughs

Since earning his engineering degree from UCLA in 1959, James L. Easton, a leading manufacturer of athletic equipment, has been a tireless champion for the university. His philanthropic contributions to UCLA span programs in athletics, management, technology and medicine — in particular, research into Alzheimer’s and other neurodegenerative diseases. In 2014, Easton received The UCLA Medal, the university’s highest honor given to an individual for extraordinary achievement. The award recognized not only his philanthropy, but also his strategic guidance that has enhanced UCLA’s ability to provide competitive learning opportunities and accelerate crucial medical research.

Now, Easton ushers in a new era by making a $36-million pledge to establish interdisciplinary research and education programs to benefit the Departments of Neurology and Neurosurgery in the David Geffen School of Medicine at UCLA, the UCLA Henry Samueli School of Engineering and Applied Science, the UCLA Anderson School of Management and UCLA Athletics. While each of these disciplines has a different focus, they represent...
opportunities for pioneering cross-campus collaborations that support UCLA’s priorities, as well as those of Easton and his wife Phyllis — who was instrumental in bringing the gift to fruition — to foster partnerships that will bring about more rapid advances.

“Innovations to enhance more people’s lives don’t happen on their own,” Easton says. “Great minds and collaborations across the university, with solid funding, are the cornerstones of change, and I’m proud to continue to support areas at UCLA that I am passionate about. It is especially meaningful to see different disciplines, such as engineering and neurosurgery, work together to bring about important advances.”

“UCLA aspires to create a truly integrated academic medical center,” says Dr. John C. Mazziotta (RES ’81, FEL ’83), vice chancellor for UCLA Health Sciences and CEO of UCLA Health. “The Eastons’ commitment to fostering collaborations across departments in order to form a cohesive campus is a visionary partnership with the university that completely aligns with our goals and will have a far-reaching and long-term impact.”

As part of this landmark gift, the Department of Neurology will receive $17 million, directed to the Easton Labs for Neurodegeneration for updating and equipping research facilities, recruiting clinicians and research scientists and conducting research. The Department of Neurosurgery will benefit from $5 million that will help advance investigations and training in the Easton Labs for Brain Injuries. A portion of the funds will establish an endowment and provide support for fellowships in neurosurgery, to be known as the Easton Brain Injury Fellows. In addition, the gift will fund a new concussion clinic, which will be housed in the Edie & Lew Wasserman Building.

The programs in the Departments of Neurology and Neurosurgery funded by these contributions will examine the mechanisms and treatments for neurodegenerative diseases and further the science of memory loss, research the pathology of brain injury and disease and focus on the prevention and diagnosis of traumatic brain injury in order to develop new therapies and prevention strategies.

The Eastons’ visionary investment also will provide $5 million to the UCLA Henry Samueli School of Engineering and Applied Science to create the Easton Labs for Engineering Innovation, tasked with the development of high-impact research and innovation in new materials. This generosity already has inspired collaboration between the David Geffen School of Medicine at UCLA and the UCLA Henry Samueli School of Engineering and Applied Science to develop pioneering materials that will help detect and prevent brain and body injury.

For more information, contact Kathryn Carrico at:
(310) 825-2558

Mattel Children’s Hospital UCLA and the Today’s and Tomorrow’s Children’s Fund (TTCF), under the umbrella of the UCLA Children’s Discovery and Innovation Institute, celebrated TTCF’s 10th annual Faculty Presentations and Awards Day on May 21, 2015, at Covel Commons on the UCLA campus. TTCF members attended a day of research presentations and group discussions before voting to award $230,000 in pooled donations to three research projects. Grand Prize recipient Dr. Vivian Y. Chang (FEL ’12) received $100,000 for her research project, “Pediatric Cancer Predisposition,” while Dr. Shaun Hussain (RES ’07, ’10, FEL ’11), assistant clinical professor of pediatric neurology, and Dr. Marlin Touma (FEL ’15), assistant professor of neonatology, each received $65,000. Since its inception in 2006, the TTCF has contributed more than $2 million in bridge grants for junior faculty members in the UCLA Department of Pediatrics.

For more information, contact Danielle Dietz at:
(310) 267-1852
More than 250 guests came together for the Fourth Annual Golden Portal Awards benefiting brain-cancer research at UCLA. Ted Gagliano, president of post-production at 20th Century Fox and a member of the boards of the UCLA Department of Neurosurgery and the Jonsson Cancer Center Foundation, and Loic Baily, a former colleague at Fox, co-chaired the event. After Gagliano personally committed $1 million to support brain-cancer clinical trials in 2011, he and Baily launched the Golden Portal Awards as a way to double the impact of Gagliano’s commitment by encouraging their peers in the film industry to get involved in the cause. The fundraiser embodies Gagliano’s partnership with UCLA by joining movies and medicine. Two of the awards honor technology innovation in film and two recognize a UCLA patient and a member of the UCLA brain-cancer research team.

Golden Portal awardees for 2015 included UCLA neurosurgery patient Jeannine Walston, who was honored with the Tenacious Bravery Award, and UCLA’s Dr. Carol Kruse, a recognized leader in immunological therapy for brain cancer, who posthumously received the Tenacious Discovery Award. Samsung and Oculus for VR Gear won the Tom Sherak Film Innovation Award, and the movie Wild received the Best Science in Film Award.

This year also served as a technology showcase, featuring multiple demonstrations of an ongoing collaboration between Gagliano and Dr. Neil Martin, chair of UCLA Neurosurgery, who are developing virtual-reality applications for surgical training and preparation.

“I had the privilege of working on Avatar and believed there would be bigger implications for what we were creating,” said Gagliano. “Now, I am thrilled to work with the surgeons and scientists at...”
UCLA to apply these technologies in ways that will help patients have smoother, faster surgeries so they can recover more quickly.”

Proceeds from the event are helping more than 350 patients at 60 clinical-trial sites around the world to receive the most cutting-edge brain-cancer therapies offered by UCLA. The two clinical trials funded by the event and led by Dr. Linda Liau (RES ’97, FEL ’98), director of the UCLA Brain Tumor Program, are developing new therapies that train the human body’s immune system to recognize and destroy lingering cancer cells in patients with glioblastoma multiforme, the most aggressive form of brain cancer.

For more information, contact Leti McNeill Light at:
(310) 267-9475
Widening the Circle of Giving

The LA Women’s Circle of Giving (LAWCOG) has awarded a $60,000 grant to the Child and Adolescent Programs at the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA. The grant will fund rebuilding the outdoor playground in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. Founded by Mindy Freedman, LAWCOG is a philanthropic group of women dedicated to supporting causes that benefit women, children and families in Los Angeles County. UCLA’s Early Childhood Partial Hospitalization Program (ECPHP), co-directed by Drs. Stephanny Freeman and Tanya Paparella, spearheaded the project. ECPHP is a national model for the treatment of young children with autism, developmental disabilities and behavior disorders. The new playground is specifically designed to facilitate social engagement, address sensory needs and boost many other areas of development for all the outpatient, partial-hospitalization and inpatient children receiving services in the Semel Institute.

For more information, contact Alan Han at: (310) 825-1546
To learn more about LAWCOG, go to: lawcog.org

UCLA Names Landmark New Medical-Education Building Geffen Hall

In the fall of 2016, the David Geffen School of Medicine at UCLA will inaugurate a new medical-education building that will change the face of the school’s teaching and learning efforts. This new facility — recently named Geffen Hall — will allow the medical school to expand its educational programs and keep pace with emerging technologies.

“It could not be more fitting that this state-of-the-art facility will bear the name of David Geffen, who has given so generously to our David Geffen School of Medicine at UCLA and who established the David Geffen Medical Scholarships, allowing a significant number of medical students in each class to graduate debt free,” said Dr. John C. Mazziotta (RES ’81, FEL ’83), vice chancellor for UCLA Health Sciences and CEO of UCLA Health. “Thanks to David Geffen’s generosity, UCLA medical students and faculty are the recipients of more than $300 million in charitable giving.”

Located at the intersection of Le Conte and Tiverton Avenues, the new 110,000-square-foot facility will feature an open, welcoming layout. Geffen Hall was designed to promote interdisciplinary collaboration and leverage technology, and it will be among the most sustainable buildings on campus.

The $120-million Geffen Hall offers premier naming opportunities within the facility. If you are interested in partnering in this historic fundraising endeavor, please contact Laura Pescatore at (310) 825-1288.
Gifts

An anonymous donor has made a $5-million contribution in recognition of the leadership of Dr. Carol Mangione, Barbara A. Levey, MD, and Gerald S. Levey, MD, Endowed Chair, in launching the UCLA-Southern California Clinician Leaders Program in the David Geffen School of Medicine at UCLA. Inspired by the Robert Wood Johnson Clinical Scholars Program, which for nearly 40 years fostered the development of physician-leaders who transform health and healthcare, the new platform is a highly customized two-year initiative that places early-career physicians and nurses in intensive regional settings that have the greatest unmet healthcare needs. Participants conduct research that mitigates disparities and directly benefits the health of Southern California-community members. The curriculum is designed to instill in participants a robust set of skills in organizational and social change, applied translational-research methodology, community engagement, program development and evaluation, team management, communication and leadership.

Dr. Venkatesh Harinarayan and Ms. Sudha Neelakantan have contributed $500,000 to the UCLA Department of Pediatrics. This grant will establish the Harinarayan Epilepsy Research Fund to support epilepsy research conducted by Dr. Raman Sankar (RES ’89, FEL ’91), Rubin Brown Chair in Pediatric Neurology and chief of pediatric neurology in the David Geffen School of Medicine at UCLA. Dr. Sankar addresses the mechanisms of seizure-induced injury and epileptogenesis in the developing brain and works to advance bench-to-bedside therapies.

The Arline and Seymour Kreshek Family Fund has made a $1-million pledge to support the work of Dr. Andrew Charles (MD ’86, RES ’90, FEL ’92), Meyer and Renee Luskin Chair in Migraine and Headache Studies in the UCLA Department of Neurology and director of the Headache Research and Treatment Program. The funding will further Dr. Charles’s research into the causes of and potential therapies for alldynia, which is the experience of ordinarily non-painful touch as uncomfortable or painful. For many patients, alldynia can cause significant disability or disruption of normal function, and while there are multiple theories about the cause of alldynia, it remains unknown.

Sandra and N. Richard Lewis.
Photo: Courtesy of the Lewis family

The Jonsson Comprehensive Cancer Center (JCCC) was honored to receive a gift of nearly $700,000 from the estate of Sandra and N. Richard Lewis to establish the Dick and Sandra Lewis Sarcoma Research Fund under the direction of Dr. Arun Singh (FEL ’11). The Lewises’ bequest will allow Dr. Singh and his team to harness the JCCC’s clinical/translational-research platform to study novel therapies that may prove effective against this complex disease for which new treatments are urgently needed.

Bren Simon has increased her commitment, through the Melvin and Bren Simon Charitable Foundation, to the UCLA Division of Digestive Diseases. Her additional multimillion-dollar pledge benefits the Melvin and Bren Simon Digestive Diseases Center within the division. Under the direction of Dr. Eric Esrailian (FEL ’06), Lincy Foundation Chair in Clinical Gastroenterology and co-chief of the Division of Digestive Diseases, the new gift will play a vital role in advancing bench-to-bedside therapies to help close the gap between groundbreaking science at UCLA and the advanced care provided to patients with complex gastrointestinal disorders. Through Simon’s generosity, the division has become a leader in translating research into innovative healthcare, and this funding will enable the division to continue its multidisciplinary efforts to improve the lives of patients and their families.

Tower Cancer Research Foundation, an independent nonprofit organization, has committed more than $800,000 in grants for oncological research at UCLA, as well as a $25,000 grant to support Mattel Children’s Hospital UCLA. The foundation honored Dr. Richard Pietras (MD ’86, RES ’86, FEL ’92, PhD ’74) in the UCLA Division of Hematology and Oncology and the Jonsson Comprehensive Cancer Center with $500,000 and the Jessica M. Berman Memorial Fund Senior Investigator Award for his work on new strategies to target estrogen receptor downregulators for breast-cancer therapy. Tower awarded three $100,000 Career Development Grants to promising young physician-scientists at UCLA, including Dr. John Lee (FEL ’13) for his work targeting Myc oncoproteins in advanced prostate cancer, Dr. Christopher Seet (FEL ’14) for his research identifying novel mechanisms of immune evasion in acute myeloid leukemia and Dr. Daniel Shin (FEL ’12) for his study of the regulation of PD-L1/L2 expression in melanoma. In addition, Cancer Free Generation, the young leadership division of Tower, has granted Mattel Children’s Hospital UCLA $25,000 for its education/school reintegration program, which closely monitors the progress of each patient to ensure a smooth return to school post-treatment.

The UCLA Division of Digestive Diseases has received a $3-million pledge from the Tull Family Foundation to establish the Tull Family Foundation Fund for Excellence. Under the direction of Dr. Gary Gitnick, The Fran and Ray Stark Foundation Chair in Digestive Diseases and co-chief of the Division of Digestive Diseases, the fund will strengthen the division’s mission to advance novel investigations, clinical efforts and education. It will further core priorities in the division, including key scientific centers, the youth-focused STEM program, as well as the recruitment and retention of distinguished faculty.

For more information, contact Health Sciences Development at: (310) 267-1845

In Memoriam

Longtime Malibu resident Eloise Hoopes passed away June 2, 2015, at UCLA. She was 97 years old, and she was known for making people feel special and for her love of travel and flowers. During World War II, Hoopes worked for a time on the assembly line of a glider factory and as a runway model for a Kansas City, Kansas, department store. After moving to California, she met her second husband, cartoonist Don Flowers, and moved to Point Dume. Following Flowers’s death, Hoopes married Frank Hoopes and moved to Zuma Beach. A true friend of UCLA, Hoopes donated her Malibu property to the university. The annuity enabled her to live in her home while providing her with a lifetime income. The proceeds from the sale of the house will benefit UCLA Medical Center, Santa Monica as an unrestricted gift to be used for the medical center’s highest priorities. Hoopes is survived by her companion John Siller, her son Don Flowers, daughter-in-law Joanna and four grandchildren.

Dr. John J. Kuiper, a longtime clinical faculty member in the Department of Medicine, passed away April 27, 2015. Dr. Kuiper earned his medical degree from Cornell University Medical College in 1961 and completed his internship, residency and chief residency in internal medicine at the University of Rochester and a fellowship in nephrologic research at Hammersmith Hospital in London, England. Upon his retirement, in 2012, Dr. Kuiper made a generous and visionary investment in UCLA by establishing the John J. Kuiper Chair in Nephrology and Renal Transplantation, which promotes translational research, education and ethical practice in these fields.

(From left) Dr. John J. Kuiper with Dr. Gabriel Danovitch, holder of the Kuiper Chair.
Photo: Courtesy of UCLA

Eloise Hoopes. Photo: Courtesy of Don Flowers.
Good Afternoon, Mrs. Gates

By Abraar Karan

The room was silent. Sixteen of us sat around a square table, breathing softly but quickly, unsure of what to think, do or say as we waited for one of the wealthiest and most powerful women on earth to walk in. What does one say in these moments? Good afternoon? How are things? How’s the family? We were a group of graduate and undergraduate students studying medicine, global health and international development, anticipating the arrival of Melinda Gates at the Sierra Room of the UCLA Faculty Center.

We had been prepped beforehand; Alexandra Lieben, deputy director of the UCLA Burkle Center for International Relations, reminded us that we were about to meet a singular woman, while Mrs. Gates’s chief-of-staff, John Sage, assured us that she was human. Ultimately, it probably didn’t matter what anyone told us before she arrived because we all shared one thing in common: We knew what she and her husband Bill have done for millions of people around the world through their Bill & Melinda Gates Foundation, and thus, she was a hero.

When she entered the room, no one said a word. I wanted to say something, but nothing came out. It was like what you might imagine if a perfect meal is brought out from the kitchen of the world’s greatest chef and placed in front of you — it’s almost more satisfying to not disturb the food, instead admiring it for its rarity and wonder. And so, those first few seconds were just like that — a plate of perfect silence. But that didn’t last for long, as Mrs. Gates immediately showed us who she really is: a mother of two children who, as she said herself, “are never quiet, so I know something is wrong here.” We all laughed — a combination of her humor and our relief that she indeed was real.

Melinda — if it would not be too familiar for me to call her Melinda from this point forward — began the conversation with a brief overview of her vision for the near future. Primarily, she emphasized the need for a broadly inclusive approach to global development, one that incorporates a holistic, bottom-up strategy originating with the people who understand their own problems the
best. This approach allows innovation to grow from necessity and cultural pragmatism rather than the traditionally siloed, problem-based projects of the past — ones that we know from experience have been insufficient in addressing the complexity of most global issues.

However, it was not her expertise in the arena of global development that most impressed me; that was something I expected from someone of her experience. But, as we delved into conversation about global issues, such as women’s inequality worldwide and the complex geopolitics of foreign aid and development, Melinda always brought the conversation back to stories of real people and their very real lives. And she could only do this because they were stories that she had experienced firsthand. There are few people in the world who can say that they sit at the head of a multibillion-dollar endowment and also spend many of their days in mud huts talking to people who earn just pennies because they really want to understand.

There is something in Melinda that you only can discern when you speak to her directly. Despite the wearying slog through Los Angeles traffic and facing the prospect of being interviewed in front of 400-plus people right after our more intimate discussion, there was no hesitation, no seemingly pre-fabricated answers, no bull. This is a woman who demonstrates, through her words and her demeanor, that she simply is one person wanting to understand the struggles of people around the world and hoping, with the benefit of her remarkable means, to make a difference. It is true that her contribution is likely to be larger, in both financial and practical terms, than that of almost any other person alive, but she didn’t make us feel that way. Instead, she inspired us to believe that the contributions we and others can make are of equal value and importance. Her democratic persona made it easy for us to talk to her, to share thoughts, beliefs and concerns, and to expect an honest response in return.

I learned a lot that afternoon, and somehow those 40 or so minutes felt both like days and seconds at the same time. As students, we asked her many questions about technical issues — what she thought about X problem this or Y solution that — probably because a part of us wanted to impress her, or at least not to look stupid in front of her. After all, we were chosen for this opportunity, the ones who could supposedly speak her language, who knew what the Abuja Declaration or Millennium Development Goals were, who could challenge her with difficult questions to see if she had all the answers. But everyone in the room knew — including Melinda — that no one person has all the answers.

I wish we had also asked her the questions that we really wanted to ask: What has been her biggest regret in a journey so extraordinary? What is the most important lesson she has learned? If she were young again, what would she do in a world such as ours is today — a world with personal computers, cell phones and the Internet, where many people, even in developing countries, have access to unlimited knowledge within seconds.

And through her example, we must ask ourselves: What will we do in a world in which inequality is more than just a headline? What will be our contributions to making a difference in such a world?

Abraar Karan is a fourth-year student and class president in the David Geffen School of Medicine at UCLA. He participates in the Global Health Pathway through the UCLA Center for World Health.
The UCLA Community Based Learning (CBL) Program and its Healthcare Career for Youth Expo offers teens and young adults from underserved communities an opportunity to learn about the healthcare field. The event is supported by a grant from the California Office of Statewide Health Planning and Development and sponsored by CBL in partnership with the David Geffen School of Medicine at UCLA.