CLOCKED

UCLA researchers are redefining the science of concussion.
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LEADERSHIP

Meeting the Future Challenge
Academic health centers must redefine themselves if they are to survive in a changing healthcare environment.

Why do academic health centers (AHCs) exist? This question is addressed in an article I wrote, along with David Geffen School of Medicine at UCLA and UCLA Health System colleagues, that appeared in the Journal of the American Medical Association last November. We believe that these institutions — approximately 135 of them in the U.S. — exist to ensure sustainable healthcare through their integrated missions of patient care, education and research. Yet, many of these centers operate in ways that threaten their viability. We state that AHCs must reconfigure and transform rapidly if they are to survive.

Why this concern? For too long, AHCs have existed as a cottage industry in a fragmented market, blind to the costs of duplicative infrastructure and paid a premium for claims of quality, without the tools to measure or ensure it. An value-conscious purchasing forces AHCs to compete among themselves and with other health organizations, many will face critical threats. Centers that invested early in integrating care — primary care, information technology and analytics, as well as competing on value — are poised for continued growth.

But those that fail to respond effectively to the changing healthcare landscape may find their clinical revenues unable to support education and research and jeopardize their leadership in clinical training.

One of the factors contributing to the precarious state of many AHCs is sized clinical care that has diminished accessibility and coordination of care for patients and allowed unnecessary duplication of services and comparatively poorer outcomes. Pricing that is higher than comparable services lowers trust among patients and commodifies the actual value of care provided for complex conditions. However, it is also related to limited integration of care and unnecessary care.

What can AHCs do? We must adopt more of a patient focus, developing approaches that follow the patient, deploying multidisciplinary teams and integrated practice units across departments.

We must become more population-health centric, learning to care for the health of populations while using a global budget to manage the health of a specific population. We must begin leveraging the vast reservoir of health-related big data to help create the most effective means of providing care.

We must shift to a value-conscious state of mind, eliminating waste through the consistent use of evidence-based practices and by avoiding unnecessary tests. And AHCs must lead in the prevention of disease and disability, recognizing that prevention is the ultimate value-added measure.

As profound change rapidly occurs in U.S. healthcare, the fate of AHCs and our ultimate contribution will be determined by how we respond. Centers pursuing the disruptive transformation we’ve outlined will not only survive but thrive. And these institutions will continue providing value to society, patients and communities.

A. Eugene Washington, MD, MSc
Vice Chancellor, UCLA Health Sciences
Dean, David Geffen School of Medicine at UCLA
Gerald S. Levy, MD, Endowed Chair
Why do academic health centers (AHCs) exist? This question is addressed in an article I wrote, along with David Geffen School of Medicine at UCLA and UCLA Health System colleagues, that appeared in the Journal of the American Medical Association last November. We believe that these Institutions — approximately 135 of them in the U.S. — exist to ensure sustainable healthcare through their integrated missions of patient care, education and research. Yet, many of these centers operate in ways that threaten their viability. We state that AHCs must reconfigure and transform rapidly if they are to survive.

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One of the factors contributing to the precarious state of many AHCs is siloed clinical care that has diminished accessibility and coordination of care for patients and allowed unnecessary duplication of services and comparatively poorer outcomes. Pricing that is higher than comparable services elsewhere is another problem. To some degree this reflects the actual value of care provided for complex conditions. However, it is also related to limited integration of care and unnecessary care.

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A. Eugene Washington, MD, MSc
Vice Chancellor, UCLA Health Sciences
Dean, David Geffen School of Medicine at UCLA
Gerald S. Levey, MD, Endowed Chair
I was sitting at the kitchen table eating a bowl of soup. As we had just stopped our print edition of the San Francisco Chronicle and replaced it with the electronic one, I found myself with nothing to read. I shuffled through the pile of unrequested pieces of mail from the past week and ran across your journal (U Magazine, Winter 2014). I suspect that I’ve received other issues, but that they surely must have gone the way of their brethren, into the recyclables. I’m now sorry that those others were tossed. You have an outstanding publication. Usually, magazines of this genre start fairly interesting but quickly deteriorate into dullness for all but those named and those close to those named. Each of the articles that I read, or will soon be reading, was well-written and contained information of consequence to me as a retired doc. The photography was first rate, as was the layout. I will be on the lookout for upcoming editions and make sure that my wife knows that they not be lumped with J. Crew catalogs and Costco.com coupons in their trip to the dump.

Larry Hill, MD (RES ’69)
San Francisco, California

Thank you for publishing the lucid letter by Dr. Albert Stroberg (“In Box,” Winter 2014) regarding your article in the Fall 2013 issue, “Faith & Healing.” His letter clearly illustrates the problem Americans have concerning evidence and belief. Unfortunately, the other letters on this topic originate from minds already clouded by religious gibberish. Indoctrination of children is akin to abuse and should not be allowed in a rational society, but then again, America has never embraced rational thought. A good start for those wishing to escape ignorance would be Blind Faith: The Unholy Alliance of Religion and Medicine, by Richard P. Sloan.

John L. Moss, PhD, DDS
Santa Monica, California

I certainly enjoyed reading the article “Military Engagement” (Winter 2014, page 24). This piece describes the incredible humanitarian vision that Maddie and Ron Katz possessed and put into action by facilitating a relationship between Brooke Army Medical Center and UCLA to deliver the best reconstructive surgery to our wounded warriors. What the Katzes did in supporting and facilitating expert care to our injured military personnel is truly remarkable. However, what I found missing in the article is the mention of Dr. Timothy Miller (MD ’63, RES ’70), who served as the chief surgeon of Operation Mend and performed more than 150 reconstructive surgeries on soldiers wounded in action in Iraq and Afghanistan. Dr. Miller was the chief of the Division of Plastic and Reconstructive Surgery at UCLA from 2002-2011. In recognition of his work for treating our injured servicemen and women, People magazine in 2010 named him Hero of the Year, and the U.S. Marine Corps honored him at a Barracks ceremony in Washington, D.C. Congratulations to Maddie and Ron Katz, and to Dr. Tim Miller, who led the UCLA Plastic and Reconstructive Surgery team in treating the injured heroes of our U.S. armed forces.

Ronald W. Busuttil, MD (RES ’77), PhD Distinguished Professor and Executive Chairman, UCLA Department of Surgery Los Angeles, California

I enjoyed Shari Roan’s article, “Joint Liability” (Fall 2013, page 24), on the issues surrounding joint-replacement surgery in the U.S. Overall, I found the piece balanced and thoughtful. In discussing the financial impact of these procedures, however, the article neglects one key question: Do joint replacements have to cost as much as they do? As the physicians quoted in the article correctly state, joint replacements are remarkably effective and can be life-changing for many patients. I watched my own father transformed from a hobbling old man back to an active charter-boat captain by bilateral hip replacements. But I can’t help wonder if these now-routine procedures can’t be done at lower cost. The cost of the joint hardware itself can vary almost 10-fold, and a recent study shows that even the surgeons using the prostheses don’t know how much they cost.

Equally concerning is the cost of the implantation procedure. The American healthcare system is notorious for rewarding procedural care far more than conservative measures. If we need to decrease total expenditures on joint replacements, we can do it without denying individuals needed surgery. We need to work relentlessly to reduce the costs of the procedures — for devices, hospital care and physician services. The American healthcare system — and all of us as taxpayers — can no longer afford to pay top-dollar prices for medical procedures, especially when we’re penny-pinching on services that might prevent the need for them.

Victoria S. Kaprielian, MD ’85
Professor Emeritus,
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Durham, North Carolina

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, E-mail 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 may be edited for length. Don’t be a stranger. Write to us.

Submit letters to: editormedicine@mednet.ucla.edu
FOR THOSE WHO GIVE ALL, WE GIVE WHATEVER IS NEEDED

UCLA is deeply committed to working with our military partners to heal the body, mind and spirit of America’s wounded warriors. The new Ronald A. Katz Center for Collaborative Military Medicine at UCLA serves as a hub for the programs and initiatives across campus that support our veterans and current military service members and their families. By accessing the brain trust of knowledge, experience, innovation and entrepreneurial spirit at UCLA, the Center will address and advance the unique clinical challenges posed by battlefield trauma—and proudly serve those who serve.

WWW.VETERANS.UCLA.EDU
This is the worst pain ever!" screams a woman in the delivery ward, her eyelids fluttering as the baby's skull crowns. Adding to the cacophony, an infant nearby in the neonatal unit jerks his arms and cries in distress, his tiny chest heaving under his striped onesie. In the operating room, an unconscious motorcyclist lies on the table with a blue drape circling the open fracture in his shin. Blood also oozes from the bandage around his forehead, adding to the urgency. Surgical instruments lined up on a tray gleam under the bright light. A crash cart equipped with a defibrillator stands by.

But it's not just an average day at Ronald Reagan UCLA Medical Center. All of the "patients" are life-sized, computer-programmed mannequins in the newly renovated, 9,000-square-foot UCLA Simulation Center. The facility blends the latest in technology with life-or-death scenarios to help healthcare trainees polish their clinical-decision-making and teamwork skills before treating living patients. "Simulation-based learning embeds the lessons of the teaching experience deeply into the participants without risk to patients," says anesthesiologist Randolph Steadman, MD (RES '94), who founded the center and continues to serve as its medical director.

"Surgeries used to last considerably longer at teaching hospitals," Dr. Steadman says. "That's because trainees would hone their skills on real patients. With high-tech simulation, UCLA healthcare providers can now achieve a certain level of proficiency before caring for their patients."

Computerized variables control the sounds of the mannequin's breathing, heart rate and rhythm, blood pressure and other vital signs. Noelle, the mannequin in labor, occasionally has her baby born breech. Or the simulation specialist can swap out her belly — equipped with an umbilical cord and placenta — for a C-section birth. To add realism, human actors or staff members are sometimes recruited to portray Noelle's hysterical husband and worried family members. By causing a commotion, they force trainees to practice their bedside manner while juggling technical skills.

The simulations are run from a central control room, from which instructors and students can observe, as those involved in the scenarios try to keep their wits about them in the fast-paced, role-playing lesson. Nearby, in the center's task-training room, mannequin heads and torsos lie on tables, allowing students to practice hands-on skills needed to place a breathing tube, image the heart with ultrasound or performing a colonoscopy.

Dr. Michael Sopher (RES '87, FEL '88), clinical professor of anesthesiology (center), assists students in the UCLA Simulation Center as they practice necessary skills on mannequins before they move on to care for living patients.

Photography: Todd Cheney/UCLA Photography

‘Smart’ Mannequins Breathe Life into Medical Scenarios

Mannequin heads and torsos allow students to practice a broad range of hands-on skills, such as placing a breathing tube, imaging the heart with ultrasound or performing a colonoscopy.
To Lower Cholesterol, You Say Tomato

Tiny amounts of a specific type of lipid in the small intestine — unsaturated lysophosphatidic acids (LPAs) — may play a greater role than previously thought in generating the high cholesterol levels and inflammation that lead to clogged arteries. UCLA researchers also found they could reduce the negative effects of these lipids in mice by feeding the animals a new genetically engineered tomato being developed at UCLA that is designed to mimic HDL, so-called “good,” cholesterol.

Previously, it was thought that the role of the small intestine in response to a high-fat, high-cholesterol diet was simply to package the fat and cholesterol for transport to the liver, where it would cause increased blood levels of LDL (“bad”) cholesterol, decreased levels of “good” cholesterol and the rise of systemic inflammation. But the UCLA researchers revealed that LPAs, previously considered very minor because they are found in far smaller amounts in the small intestine than other lipids, may play a more direct role in contributing to the factors that cause atherosclerosis.

The research team, led by Alan Fogelman, MD ’66 (RES ’68, ’71, FEL ’73), executive chair of the Department of Medicine and director of the atherosclerosis research unit at the David Geffen School of Medicine at UCLA, found that mice fed a high-fat, high-cholesterol diet showed a two-fold increase in the amount of LPAs in the small intestine over mice fed normal low-fat mouse chow. When researchers added LPAs at only one part per million to the normal low-fat, low-cholesterol mouse chow, they observed the same increase in LPAs in the small intestine as when the mice were fed the high-cholesterol, high-fat diet. Surprisingly, with the addition of LPAs to the low-fat diet, the UCLA team also found alterations in the patterns of gene expression in the small intestine, increases in LDL and decreases in HDL levels and increases in blood markers of inflammation typically seen when the mice consumed a high-fat, high-cholesterol diet.

The researchers then added 2.2 percent of freeze-dried tomato powder — made from a tomato engineered to produce a small peptide called 6F, which mimics the action of apoA-1, the chief protein of HDL — to low-fat, low-cholesterol mouse chow that was supplemented with LPAs. They also added the same dose of the peptide-enhanced tomatoes to the high-fat high-cholesterol diet. In both cases, the addition prevented an increase in the level of LPAs in the small intestine and also stopped increases in “bad” cholesterol, decreases in “good” cholesterol and systemic inflammation.

Danger in Disguise: Brain-cancer Cells Can ‘Hide’ from Drugs

Researchers from UCLA’s Jonsson Comprehensive Cancer Center have discovered a biological mechanism that makes brain-tumor cells drug resistant by allowing them to escape from the drugs designed to target them.

Glioblastoma is the most common and deadliest form of brain cancer, and the surface of its cells are marked by telltale mutations that accelerate tumor growth. The drugs currently used to find and kill glioblastoma cells target those mutations. Led by first author David Nathanson, PhD ’11, assistant professor of molecular and medical pharmacology at UCLA, and former UCLA professor Paul Mischel, MD (RES ’94, FEL ’96), now at the Ludwig Institute for Cancer Research at UC San Diego, the researchers found that the tumor cells temporarily eliminate the gene mutation when they sense the presence of the cancer drug, essentially removing the drug’s target and allowing the tumor to become drug resistant.

The study also found that after the drug is removed, the tumor cells reacquire the gene mutation (called an oncogene) that helps the tumor cells grow more robustly and that they can repeat this cycle as often as the drug is given. That ability is what could make the cancer cells vulnerable to the original therapy: doctors may be able to use pulsative drug delivery, for example, to take better advantage of the periods when the cancer cells are sensitized to the drugs.

“Now that we know that tumor cells have the surprising capacity to lose this oncogene during treatment and then reverse the process after drug removal, we may be able to exploit this phenomenon in the clinic,” Dr. Nathanson says.
Context Counts for Anxious Teens, Kids

Anxiety disorders are common in children and adolescents, affecting up to 25 percent of the youth population, and their risks — distress and functional impairment, problems at home and in school and increased rates of psychiatric disorders in adulthood — constitute a significant public-health burden. And they underscore the importance of continued efforts to understand the cause and course of the disorder. While earlier research found that anxious youths are apt to interpret neutral or ambiguous information as threatening, fueling the feelings of distress that characterize anxiety disorders, what happens in the brain and how the brain may be affected has been unclear. In particular, where in the brain neutral information is transformed into “threatening” information in anxious youth has remained unknown.

Now researchers at UCLA have shown that teenagers with anxiety disorders show increased activity in a specific part of the brain, the medial prefrontal cortex, when they are interpreting a situation negatively. For the study, 16 teenagers with anxiety disorders and 15 non-anxious teens underwent functional MRI while being shown pictures of people with a neutral look on their face. The faces were paired with either of two sentences: one that was viewed as neutral (“She is watching a presentation”) and one that might be viewed as more intimidating (“She is about to give a presentation”).

Teenagers without anxiety disorders were unaffected by the context when they interpreted the faces. But those with anxiety disorders often found neutral faces more threatening when they were presented in an “anxiety-provoking” situation — one in which they might feel judged by peers. This was not a great surprise. But when researchers measured brain activity in these situations, they found increased activity in the medial prefrontal cortex.

“We know that the medial prefrontal cortex plays a role in social and emotional processes, and it is an area of the brain that is still developing through childhood and adolescence, so it was a natural candidate for examination,” says Tara Peris, PhD, assistant professor of psychiatry at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. “The role this area of the brain plays is of particular interest, then, given prior research that implicates it in inferring what another person is feeling.”

This study is among the first, Dr. Peris says, aimed at understanding how anxious youths make sense of neutral stimuli and the conditions under which their brains might elicit heightened patterns of activation. Further research is needed to examine more definitively the role of this part of the brain in adolescent anxiety and the extent to which it may serve as a biomarker for illness.

Disrupted Maternal Bond Can Alter Child’s Brain

Children who experience profound neglect have been found to be more prone to a behavior known as “indiscriminate friendliness,” characterized by an inappropriate willingness to approach adults, including strangers. UCLA researchers are now reporting some of the first evidence from human studies suggesting that this behavior is rooted in brain adaptations associated with early life experiences.

The UCLA group used functional magnetic resonance imaging (fMRI) to demonstrate that youths who experienced early maternal deprivation — specifically, time in an institution such as an orphanage prior to being adopted — show similar responses to their adoptive mother and to strangers in a brain structure called the amygdala; for children never raised in an institutional setting, the amygdala is far more active in response to the adoptive mother. The longer the child spent in an institution before being adopted, the greater the effects.

“The early relationship between children and their parents or primary caregivers has implications for their social interaction later in life, and we believe the amygdala is involved in this process,” says Aviva Olsavsky, MD, ’12, resident physician in psychiatry at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA and the study’s first author. “Our findings suggest that even for children who have formed attachments to their adoptive parents, this early period of deprivation has led to changes in the brain that were likely adaptations and that may persist over time.”

Located in the limbic system of the brain, the amygdala is involved in a variety of functions, including detecting the salience of stimuli, and is believed to play an important role in intense relationships and attachments.

For the study, 67 youths between the ages of 4 and 17 underwent fMRI while they were shown pictures of their adoptive mother and of an unfamiliar female. Approximately half the children had spent time in institutions, ranging from five months to about five-and-a-half years, before being adopted. The UCLA researchers, working in the lab of Associate Professor of
You Are What You Eat: Low-fat Diet with Fish Oil Changes Prostate-cancer Tissue

Men with prostate cancer who ate a low-fat diet and took fish-oil supplements had lower levels of pro-inflammatory substances in their blood and a lower cell-cycle progression (CCP) score — a measure used to predict cancer recurrence — than men who ate a typical Western diet, UCLA researchers found. The findings are important because lower CCP scores are an indication of less aggressive prostate cancer, says UCLA Professor of Urology William Aronson, MD (RES '93), chief of urologic oncology at the West Los Angeles Veterans Affairs Medical Center.

This study is a follow-up to a 2011 study by Dr. Aronson and his team that found that compared to a traditional, high-fat Western diet, a low-fat diet with fish-oil supplements eaten for four-to-six weeks prior to prostate removal slowed the growth of cancer cells in human prostate-cancer tissue. That short-term study also found that the men on the low-fat fish-oil diet were able to change the composition of their cell membranes in both the non-cancerous and the cancer cells in the prostate. They had increased levels of omega-3 fatty acids from fish oil and decreased levels of the more pro-inflammatory omega-6 fatty acids from corn oil in their cell membranes, which may directly affect the biology of the cells. “These studies are showing that in men with prostate cancer, you really are what you eat,” Dr. Aronson says. “The studies suggest that by altering the diet, we may favorably affect the biology of prostate cancer.”

For the current study, Dr. Aronson and his team wanted to look at the potential biological mechanisms at work in the low-fat fish-oil diet that may be providing protection against cancer growth and spread. They measured levels of pro-inflammatory substances in the blood and examined the prostate-cancer tissue to determine the CCP score. “This is of great interest, as the CCP score in prostate cancer is known to be associated with more aggressive disease and can help predict which patients will recur and potentially die from their cancer,” Dr. Aronson says. Further, Dr. Aronson and his team analyzed a pro-inflammatory substance called leukotriene B4 (LTB4) and found that men with lower blood levels of LTB4 after the diet also had lower CCP scores.

“Effect of a Low-Fat Fish Oil Diet on Pro-Inflammatory Eicosanoids and Cell-Cycle Progression Score in Men Undergoing Radical Prostatectomy,” Cancer Prevention Research, October 29, 2013

Unlike the comparison group, which showed greater amygdala signal for mother than stranger stimuli, previously institutionalized youths showed amygdala responses to strangers that were similar to those they showed toward their adoptive mothers. Additionally, the children with a history of institutional rearing showed greater amygdala reactivity to strangers than did the typically raised children. Reduced amygdala differentiation was correlated with more reports of indiscriminate friendliness by the parents.

“Indiscriminate Amygdala Response to Mothers and Strangers After Early Maternal Deprivation,” Biological Psychiatry; December 1, 2013
Early Imaging, Diagnosis of Alzheimer’s Leads to Better Outcomes

Patients with early symptoms of Alzheimer’s disease who are diagnosed sooner than usual using a brain-imaging test receive medications earlier and have significantly better clinical outcomes over subsequent years, UCLA researchers find.

The findings come from the Metabolic Cerebral Imaging in Incipient Dementia study, an ongoing national clinical trial sponsored by the Centers for Medicare and Medicaid Services (CMS). The interim data show that patients whose doctors gleaning information from a brain PET scan performed with the tracer FDG — which measures energy being used throughout regions of the brain — did better over two years of follow-up than those whose doctors were randomized to not have access to the scan information.

“During the subsequent two years after their PET scans, these patients had superior executive function, better memory abilities and greater preservation of overall cognitive function,” says Daniel Silverman, MD, (RES ’94, FEL ’96) PhD, professor of molecular and medical pharmacology and the study’s principal investigator.

The research, Dr. Silverman says, provides “the first direct evidence that patients whose early Alzheimer’s disease is revealed by FDG–PET will do better than patients with the same condition but with their brain-metabolism pattern remaining unknown to their doctors and themselves.”

Prior to these study findings, there was no rigorously controlled scientific evidence on the long-term clinical benefit associated with obtaining PET scans, or any other kind of neuroimaging, in the evaluation of cognitively declining patients. This multicenter, prospective, randomized and blinded study demonstrates significant clinical benefits, which may also save healthcare dollars.

“Patients who don’t have Alzheimer’s disease may be prescribed drugs that won’t help them or may even make them worse,” Dr. Silverman says. “And each year of taking these medications costs hundreds of dollars more than the reimbursement for a PET scan would cost.” Conversely, he says, undiagnosed Alzheimer’s patients won’t get the drugs that this study shows would help them, when given early, to maintain their cognitive abilities. These patients may ultimately need nursing-home care, at an average cost of about $7,000 a month, six-to-nine months earlier than patients with the same brain pattern who were diagnosed and treated sooner as a result of the early availability of the PET-scan information.

The interim results are based on an examination of 63 patients who underwent FDG–PET and neuropsychological testing at baseline. The testing and collection of medication-prescription data were repeated every six months for two years. The doctors in the arm of the study who were able to immediately view the PET scans treated their patients differently than doctors who didn’t get scan results until the end of the two-year study. About 40 percent of the patients whose doctors were informed of the presence of the Alzheimer’s brain-metabolism pattern were given drugs specifically indicated for dementia within the first six months of the study.
U.S. Ranks Near Bottom in Efficiency of Healthcare Spending

A new study by UCLA researchers and colleagues in Canada reveals that the United States healthcare system ranks 22nd out of 27 high-income nations when analyzed for its efficiency of turning dollars spent into extending lives. The study illuminates stark differences in countries’ efficiency of spending on healthcare, and the U.S.’s inferior ranking reflects a high price paid and a low return on investment.

For example, every additional $100 spent on healthcare by the United States translated into a gain of less than half-a-month of life expectancy. In Germany, every additional $100 spent translated into more than four months of increased life expectancy.

The researchers also discovered significant gender disparities within countries. “Out of the 27 high-income nations we studied, the United States ranks 25th when it comes to reducing women’s deaths,” says Jody Heymann, PhD, senior author and dean of UCLA’s Jonathan and Karin Fielding School of Public Health. “The country’s efficiency of investments in reducing men’s deaths is only slightly better, ranking 18th.”

The study, which utilized data from 27 member countries of the Organization for Economic Cooperation and Development collected over 17 years (1991–2007), is the first known research to estimate health-spending efficiency by gender across industrialized nations.

The report’s findings bring to light several questions. How is it possible for the United States to have one of the most advanced economies yet one of the most inefficient healthcare systems? And while the U.S. healthcare system is performing so poorly for men, why is it performing even worse for women? The exact causes of the gender gap are unknown, the researchers say, thus highlighting the need for additional research on the topic, but the nation’s lack of investment in prevention for both men and women warrants attention. “The most effective way to stop people from dying prematurely is to prevent them from getting sick in the first place,” Dr. Heymann says.


Helping to Clarify Cause of Pregnancy Complications

Researchers at UCLA’s Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research have identified a specific type of cell and a related cell-communication pathway that are key to the successful growth of a healthy placenta. The findings could greatly bolster our knowledge about the potential causes of complications during pregnancy.

Specifically, the findings could help scientists clarify the particular order in which progenitor cells grow in the placenta, which would allow researchers to track fetal development and identify complications. Progenitor cells are cells that develop into other cells and that initiate growth of the placenta.

The study was led by Hanna Mikkola, MD, PhD, associate professor of molecular, cell and developmental biology, and fellow Masaya Ueno, PhD.

The placenta is the organ that forms inside the uterus during pregnancy and enables oxygen and nutrients to reach the fetus, but little is understood about the biological mechanisms and cellular processes responsible for this interface. Studying mouse models, Dr. Mikkola and her colleagues tracked individual cells in the placenta to determine which cells and which cell-communication routes, or signaling pathways, were responsible for the healthy development of the placenta. The UCLA team was the first to identify the cells that form the placenta: Epcamhi labyrinth trophoblast progenitors, or LaTP cells, can become the various cells necessary to form a specific tissue, in this case the placenta.

Dr. Mikkola and her colleagues also found a signaling pathway that consists of hepatocyte growth factor and its receptor, c-Met. The researchers found that this signaling pathway was required for the placenta to keep making LaTP cells. Production of LaTP cells, in turn, continues the production of the different cells needed to maintain the growth and health of the placenta while the fetus is growing. Placental health enables the healthy transmission of oxygen and nutrients through the exchange of blood between the fetus and the mother. In the mice, when c-Met signaling stopped, fetal growth slowed, the liver did not develop fully and it produced fewer blood cells, and the fetus died.

"Identifying this novel c-Met–dependent multipotent labyrinth trophoblast progenitor is a landmark that may help us understand pregnancy complications, such as fetal growth restriction, that are caused by defective placental exchange," Dr. Mikkola says.

Is Sexual Addiction the Real Deal?

UCLA researchers have now measured how the brain behaves in so-called hypersexual people who have problems regulating their viewing of sexual images. The study found that the brain response of these individuals to sexual images was not related in any way to the severity of their hypersexuality but was instead tied to their level of sexual desire. In other words, hypersexuality did not appear to explain brain differences in sexual response any more than simply having a high libido, says Nicole Prause, PhD, researcher in the Department of Psychiatry and Biobehavioral Sciences. “This finding is important,” Dr. Prause says. “It is the first time scientists have studied the brain responses specifically of people who identify as having hypersexual problems.”

A diagnosis of hypersexuality or sexual addiction is typically associated with people who have sexual urges that feel out of control, who engage frequently in sexual behavior, who have suffered consequences such as divorce or economic ruin as a result of their behaviors and who have a poor ability to reduce those behaviors. But, says Dr. Prause and her colleagues, such symptoms are not necessarily representative of an addiction. In fact, non-pathological, high-sexual desire could also explain this cluster of problems.

The study involved 52 volunteers: 39 men and 13 women, ranging in age from 18 to 39, who reported having problems controlling their viewing of sexual images. While viewing images, the volunteers were monitored using electroencephalography (EEG) to measure event-related potentials, brain responses that are the direct result of a specific cognitive event. The volunteers were shown a set of photographs that were carefully chosen to evoke pleasant or unpleasant feelings, ranging from dismembered bodies to people preparing food, skiing or having sex.

The researchers were most interested in the response of the brain about 300 milliseconds after each picture appeared, commonly called the “P300” response. The P300 response is higher when a person notices something new or especially interesting to them. The researchers expected that P300 responses to the sexual images would correspond to a person’s sexual-desire level, as shown in previous studies. But they further predicted that P300 responses would relate to measures of hypersexuality. That is, in those whose problem regulating their viewing of sexual images could be characterized as an “addiction,” the P300 reaction to sexual images could be expected to spike.

Instead, the researchers found that the P300 response was not related to hypersexual measurements at all; there were no spikes or decreases tied to the severity of participants’ hypersexuality.

So while there has been much speculation about the effect of sexual addiction or hypersexuality in the brain, the study provided no evidence to support any difference, Dr. Prause says. “If our study can be replicated,” Dr. Prause says, “these findings would represent a major challenge to existing theories of a sex ‘addiction.’”

*“Sexual desire, not hypersexuality, is related to neurophysiological responses elicited by sexual images,” Socioaffective Neuroscience and Psychology, 2013*
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Almost daily, consumers hear about new advances in the treatment of cancer: a new drug, dazzling technological achievements or eye-opening scientific discoveries. Why, then, are some of the nation’s foremost cancer experts saying the system for delivering cancer care is in crisis and needs sweeping changes? According to a recently released Institute of Medicine (IOM) report, Delivering High-Quality Cancer Care: Charting a New Course for a System in Crisis, skyrocketing costs, a growing number of cancer patients and a shrinking pool of cancer-care professionals are worrisome trends that must be addressed as treatments become ever more sophisticated and complex. The report is the yearlong work of a committee chaired by oncologist and cancer-survivorship expert Patricia A. Ganz, MD ’73 (RES ’76, FEL ’78). A long-time participant on national committees on cancer-care performance and resource allocation, Dr. Ganz is in a unique position to recognize problems and help steer the nation toward a better-quality and more sustainable system. She spoke with healthcare writer Shari Roan about the report and her vision of a future when more Americans will fully understand their treatment choices and can access high-quality, coordinated care.

What prompted the IOM to look at this issue?

Dr. Patricia A. Ganz: There was an IOM report in 1999 reviewing gaps in the quality of cancer care. It looked at everything from screening to end-of-life care to clinical trials, and it brought attention to many deficits in the quality of cancer care that is delivered in this country. Over the past decade, the IOM’s National Cancer Policy Forum, of which I am vice-chair, has been having regular workshops on topics related to improving the quality of cancer care. It was decided that the time had come to more formally revisit issues that have emerged since the 1999 report, and one that was high on the list was the escalating cost of cancer care. A workshop that the Policy Forum held in October 2012 pushed this issue even further and provided important background for the new report, especially the challenge of providing affordable care in the setting of an aging population.

Why do you describe the cancer-care system as one in crisis?

Dr. Ganz: We’re reaching a time when the leading edge of the Baby Boom generation is turning 65 — more than 10,000 people are turning 65...
years of age each day — and there are going to be more people developing cancer as a result. In this country, about 14-million people have had cancer and more than 1.6-million new cases are diagnosed each year. That’s expected to rise to 18 million and 2.3 million, respectively, by 2022. At the same time, the cost of drugs is skyrocketing. The number of tests done on people is rising. From 2004 to 2010, the cost of cancer care increased from $72 billion to $125 billion, and costs are expected to increase another 39 percent by 2020. Taken together, those elements became a catalyst for us to frame the situation as a looming crisis. In addition, fragmentation of care is a big problem. The average patient with cancer is not just seeing one doctor from the cancer team, he or she is seeing two, three, maybe four doctors from the cancer team when, in most cases, one probably would do. If the patient is not part of an integrated system, one physician may not know that blood tests were already done or the CT scan was already done.

In addition, the report cites tremendous waste in the system.

Dr. Ganz: Every time somebody touches a patient, it creates an opportunity for an unnecessary test to be done. But the waste is actually more complicated than that. There is a lack of adherence to guidelines. In providing cancer care, physicians may do many things that are absolutely unnecessary and even potentially harmful. And then we sometimes omit things that would be beneficial. So it’s a combination of those two things. We need to adhere to the things that are now in the Choosing Wisely campaign of the American Board of Internal Medicine Foundation. This includes such things as not doing a PSA test on a man who has a life expectancy of less than 10 years or not doing ongoing surveillance scans and tests after cancer treatment when there’s no evidence they will be of benefit.

How will the healthcare workforce handle the growing number of people with cancer?

Dr. Ganz: There’s a whole cadre of medical oncologists in my age group — I’m 65 — and we’re going to be retiring soon. Among younger doctors, not as many are going into internal medicine, leading to a shortage of those who may become cancer specialists. One study predicted the supply of oncologists will increase only 14 percent by 2020, despite the predicted 48-percent increase in cancer incidence. Everybody’s worried about the primary-care shortage in terms of affordable care, but other specialties are also critical to the delivery of cancer care. I think already some parts of the country have shortages of general surgeons, and those are the people who are doing a lot of the general breast surgery, colon surgery and other cancer-related procedures.

Cancer care is shifting toward more targeted therapies. How does this affect the entire care system?

Dr. Ganz: It used to be we would diagnose someone and identify their disease as, let us say, lung cancer. Now, we pay attention to what specific kind of lung cancer it is. Now cancers are divided into subgroups; for lung cancer, for example, there might be four or five different mutations that are each associated with a unique targeted therapy. So there is an increased cost now in the diagnostics since you have to test every patient’s tumor for several mutations to see if

“From 2004 to 2010, the cost of cancer care increased from $72 billion to $125 billion, and costs are expected to increase another 39 percent by 2020.”
“Of 13 new cancer treatments approved in 2012, only one extended survival by more than a median of six months and only two extended survival for four-to-six weeks.”

“More than one-third of people who file for bankruptcy said that medical problems were the reason, even though most had health insurance when they became ill.”

care and ask good questions or tell us about things that they think are important. So it’s establishing a communication pathway; we call it shared decision-making. That’s patient-centered, and we know that patients are more satisfied with that kind of care.

**Why does the report also emphasize psychosocial and palliative care needs of cancer patients?**

**Dr. Ganz:** A cancer diagnosis results in substantial fear and anxiety in most individuals, and there are effective ways of managing this distress with well-established psychosocial interventions and medications. Extensive research has shown that most patients are not offered psychosocial services to help them during their cancer diagnosis, treatment and survivorship care, and the report emphasizes the need for integration of these services with standard cancer care from the time of diagnosis. Managing a patient’s pain and other symptoms while we are making the diagnosis and getting the patient on a beneficial treatment protocol is very important. And as the course of disease continues, instead of waiting until somebody’s at death’s door, we want to take palliative measures. There was a trial published in the *New England Journal of Medicine* in which the researchers randomly assigned patients with newly diagnosed advanced lung cancer to either receive palliative-care consultations as an outpatient or just their routine care. The ones who got the palliative care lived longer and had less depression and fewer symptoms. Clearly there’s a survival benefit, but there’s also a quality-of-life benefit; however, one survey showed that 70 percent of the public had no knowledge about palliative care.
The report also recommends more discussion between doctors and their patients about the costs of care, correct?

Dr. Ganz: Yes, in the report we call for transparency in cost. Many physicians will tell a patient they don’t know how much a particular treatment will cost. A recent study, for example, found that only 16 percent of hospitals were able to provide a cost estimate for a hospital stay. While it’s true that we may not know what a patient’s insurance plan will pay for, we can tell our patients that there are 10 different regimens for lung cancer with very little difference in outcomes, but that one will cost in the range of $10,000 a month and all the others will be $5,000 a month. Many people are concerned that in today’s healthcare environment, changes are being suggested exclusively to save on the cost of care; they are concerned that we are implementing a system with a greater concern for societal costs rather than for benefits to the individual patient. But cost is a very real issue for individual patients with cancer. Personal bankruptcies are really a huge problem for patients undergoing cancer treatment. More than one-third of people who file for bankruptcy said that medical problems were the reason, even though most had health insurance when they became ill. Even though people may be insured, the co-pays, deductibles and co-insurance — especially the share of cost for the drugs that are enormously expensive — may add up. And because patients and doctors might not have an open discussion about costs, the doctor may be arbitrarily denying a patient certain care because the doctor thinks the cost of that care may wipe out the patient financially. Whereas, if the doctor would actually talk to the patient about costs, the patient can respond regarding what his or her desires are and how he or she wishes to use financial resources. It is this kind of openness and transparency that we would like to see.

What do you think will happen as a result of this report?

Dr. Ganz: An extraordinary group of people was involved in putting out this report, and now we have a lot of editorials and papers that have come out in various journals about the report to move its recommendations forward. This report is a vision for what we’d like to see happen; 10-to-15 years is what it’s going to take to see changes in the cancer-care system. But I tell people that it doesn’t matter if you are a doctor or a nurse, there are things you can do today to improve care for the patient sitting there in front of you.

To download a copy of the full report and to view a video, click on the link to this article at: magazine.uclahealth.org
UCLA researchers are redefining the science of concussion, just as traumatic brain injury is reaching epidemic proportions.

In the fall of 2005, I fell off my horse and ended up with a concussion. It was a frightening experience, replete with all the requisite drama — sirens, an ambulance, a lumpy ER gurney and a brain scan — but I was lucky. After various tests at my local hospital, I was reassured there was no bleeding, no swelling in my head, and that I should rest, take it easy and let myself heal. It was a mild-to-moderate concussion. I would be fine. My wife and I hoped they were right.

Things did not exactly work out the way we hoped.

The following weeks instead brought depression, intense bursts of anger, crying jags and, eventually, noticeable loss of strength and muscle tone. I startled easily at any sharp sound. My short-term memory was shot. This went on for months. For a second opinion, I went to UCLA. There I saw Paul Vespa, MD (FEL ’96), a neurologist and director of the UCLA Brain Injury Program. Dr. Vespa is a quiet fellow, with a calm visage and cerebral demeanor. After chatting with me for a few moments in an examination room, he turned his gaze to a computer screen, poking at the keyboard.

“Why are you looking at the &%$ computer?” I said, crossly. “I mean, you haven’t even felt my head where I fell, or … .”

“That’s because I’m looking for something else,” he responded.

“What?”

“Hmm. How can I put it? I’m basically looking at how your brain is using energy, and if the trauma disrupted that.”

Dr. Vespa had just given me Lesson One in UCLA’s new world of concussion research.
That we need something new in that world has grown increasingly clear in recent years. Beginning with the startling news in 2010 that the baseball great Lou Gehrig may have died from repeated concussions and not from what’s come to be called Lou Gehrig’s disease, report after report on the subject has exploded onto the front pages of the nation’s most influential journals, newspapers and magazines. Traumatic brain injury (TBI) became a top priority in sports and sports medicine. It’s also come under the lens of pediatricians, family doctors and emergency-room physicians who see the neural consequences of TBI streaming in every day from the nation’s soccer pitches and football fields.

And then there is the media frenzy. Concussion being a high-static subject, it is fodder for ESPN and Fox Sports and other talking-head outlets — coverage that rarely leads to reasoned discourse. The result: calls for everything from new protective gear and new field regulations to an outright ban on contact sports.

But where is the science?

David A. Hovda, PhD (FEL ’87), director of UCLA’s Brain Injury Research Center, has been trying to answer that question for nearly three decades. As he tells it, a pivotal insight in his quest came not long after arriving in Los Angeles from New Mexico in the mid-1980s. “I’d always been interested in concussion, yet in many ways it seemed at the time that the main questions were all answered: concussion — a trauma to the head resulting from some biomechanical force — sometimes presented with such things as an open wound, loss of consciousness, cerebral swelling, bleeding and the like. Yet we also knew something else: The vast majority of brain traumas did not present with any of those!” Most were closed-head traumas involving little or no loss of consciousness, the kind of thing usually dismissed as having one’s “bell rung” or “getting clocked.”

“Yet we knew these patients were still not right,” Dr. Hovda says. “Something was wrong.”

Around 1990, the then-chief of UCLA’s Division of Neurosurgery, Donald P. Becker, MD, put the issue directly to Dr. Hovda: “Dave, what happens to the cells that survive a concussion? What happens to them, and how long does it last?”

It was a vexing question, and it wasn’t until Dr. Hovda met a fellow UCLA scientist, Yoichi Katayama, MD, PhD, that the veil began to lift. At the time, Dr. Katayama, who is now a professor of neurosurgery at Nihon University School of Medicine, in Tokyo, Japan, and president of the Japan Neurosurgical Society, was examining the neurochemistry of concussed animal models. “The results were amazing — and problematic,” Dr. Hovda recalls. “When we looked at the film, we saw that the jolt to the head caused a massive flow of ions (needed for key brain functions). That in turn created a huge demand in the brain for glucose, for energy. And this massive burning of glucose was followed by a huge energy depression throughout the brain. There was no bleeding, swelling or wound. But these brains were in a huge energy crisis.”

All of this wrought disturbing changes in the nerve cells that survived the concussion, exactly what originally concerned Dr. Hovda’s mentor. Cells became dysfunctional, and the effect lasted for long periods after the original trauma. Spikes in calcium flows caused breakdowns in the mitochondria, the energy-producing subunit of all cells. The same buildup of calcium also triggered pathways leading to cell death. The jagged flow of other brain chemicals warped the internal structure of neurons, impeding the connectivity between cells — the connectivity required for healthy cognition. How, exactly, did this energy crisis unfold?

Fortunately, there were new neurological-research tools to help answer the question. The scanning technique known as positron emission tomography (PET) allowed researchers like Dr. Hovda to observe a wide array of bodily processes, in particular the way the brain — or any other organ — uses fuel. Another innovation came from the world of animal-disease models. Previously, these modeled only open-wound traumatic brain injury — helpful in assessing major trauma but of little help for the bulk of TBI cases. So researchers invented ways to model the less-dramatic but more-prevalent profile of concussive injury.

Slowly, scientists at other institutions began reporting Dr. Katayama and Dr. Hovda’s findings in human brains. Yet it was not until Dr. Hovda received a call, in the late 1990s, from UCLA’s Gerald A.M. Finerman, MD, an orthopaedic surgeon and renowned sports-medicine expert, that he came to understand how ubiquitous the energy crisis was in all kinds of concussion. Dr. Finerman invited Dr. Hovda to do a PET scan on a football player who had a concussion during practice; he
then compared that scan with those of a severe TBI patient. "They looked the same," Dr. Hovda recalls. "I showed both scans to a friend, and he said, 'Wow, they're the same! That can't happen!'"

But it did happen, over and over again.

**WHAT DOES IT MEAN TO HAVE A BRAIN** that's in an energy crisis? Could this new understanding of concussion explain some of my own ongoing cognitive issues — my jumpiness, my difficulties in learning and a slowdown in my reasonably decent analytical abilities? I wanted to know, and so I visited neurologist Christopher C. Giza, MD (RES ’94, FEL ’96, ’00), also on the faculty of the UCLA Brain Injury Research Center.

In the first years of the ’00s, Dr. Giza worked with Dr. Hovda to address a clinical question: How does a traumatic brain injury, especially so-called mild concussion, affect different age groups? One key question was how did mild-to-moderate TBI affect a child’s learning abilities? To find out, Dr. Giza turned to the growing field of enrichment research.

Enrichment is, in essence, all the environmental aspects of cognitive development. Think of it as a sort of beneficial challenge to the brain — things like education, physical play, everyday problem-solving. Such challenges have been shown to improve learning both in lab animals and humans. So what would happen to such benefits after a concussion?

As Dr. Giza recounts his experiments with rats, mild TBI did not cause an obvious neurological impairment. "They walked, ate, groomed and played like regular young rats. But, when we raised them in an enriched environment, which should have made them smarter and is loosely akin to sending them to school, different things happened," he says. For one, the uninjured (control) pups got smarter and stayed smarter as adults. “But the TBI pups that were raised in an enriched environment showed no benefits of that education. In fact, as adults, the enriched TBI rats acted like rats that never went to school.” The key finding — and something every soccer mom might want to know — was that TBI didn’t cause an obvious problem up front but interfered with the young rats reaching their full cognitive potential.

“In lay terms,” Dr. Giza says, “they went to school but didn’t learn anything.”
Dr. Giza’s experiment sounds simple, but it has raised lots of complex questions. “We train the animals to recognize a certain cage and a certain sound as a signal for danger,” Dr. Giza says. “Most TBI rats are slow learners when trained in other ways — memory testing, recognizing objects, etc. — but in fear-based learning, they paradoxically learned faster.” Of course, he goes on, “in some ways that is beneficial. As long as they are in a potentially dangerous environment, like soldiers who serve in combat, being more anxious and more cautious is a good adaptation.”

But the “good” adaptation comes at a big price. The same TBI rats, after training in the fear-conditioning chamber, continued to freeze when put in a different “safe” chamber. “When we tried to train them that the danger sound was no longer dangerous, they couldn’t unlearn this,” he says. The enhanced fear-based learning turned out to be maladaptive in real life.

“There is a vulnerable period of about seven-to-10 days after a concussion in which the risk of having a second concussion is much higher, even if the athlete’s symptoms have resolved.”

“Once we made these observations, we noted that they might compare to the human condition of post-traumatic stress (PTS), where soldiers who become hyper-vigilant and anxious and react quickly can’t seem to turn this off when they come back from war,” Dr. Giza says. “Even in a civilian environment, they are anxious. When they hear certain sounds, it triggers the fear reaction, but since they are no longer on the battlefield, this reaction is not helpful. From our study, it appeared that physical TBI made it easier for the rats to develop this PTS-like state, suggesting that TBI biologically makes the brain more vulnerable to anxiety problems.

“They carry this into daily life, like a vet coming back from war,” Dr. Giza says. Or, less dramatically, like a child who just got clocked during her Saturday soccer game.

The ramifications of this work rippled through the neuroscience community. “The aftermath of concussion, best described by Drs. Hovda and Giza in the findings from their animal model, has forced the rest of us to re-think how we manage the injury clinically,” says Kevin Guskiewicz, PhD, co-director of the Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center at the University of North Carolina at Chapel Hill. “UCLA is the leader in helping the neuroscience community to understand the neurometabolic cascade of concussion.”

THERE IS HOPE, BUT IT’S A LONG WAY OFF.

To this day, there are few proven therapies for the long-term effects of concussion. There are drugs, but they fail as frequently, or perhaps even more frequently, as they work.

When it comes to treatment of sports-related concussion, “We are just scratching the surface,” says John DiFiori, MD (FEL ’94), chief of UCLA’s Division of Sports Medicine and Non-Operative Orthopaedics and head team physician for the UCLA Department of Intercollegiate Athletics. Dr. DiFiori is a realist, but he is that rare realist who has not succumbed to cynicism; he is hopeful. This, despite a lot of unhopeful finds in the latest scientific literature. He notes that helmets are primarily designed to reduce the risk of skull fractures and that other forms of headgear (e.g., rugby) do not appear to reduce the risk of concussion. In fact, such headgear may actually
encourage more aggressive play, what is known as “risk compensation.” And mouth guards, while extremely effective in reducing dental trauma, do not decrease the risk or severity of concussions.

But recent research has identified several important characteristics of concussion. For example, Dr. DiFiori says, “There is a vulnerable period of about seven-to-10 days after a concussion in which the risk of having a second concussion is much higher, even if the athlete’s symptoms have resolved.” That, he says, is why determining appropriate “return-to-play” protocols is so important — and still so controversial. Dr. Di Fiori says there’s now growing evidence to help guide safe-to-return-to-play decisions after a concussion. For example, he says, “Children with concussion should be managed more conservatively than adults,” with an emphasis on return to learn before return to sport. One way to help determine when a concussion has occurred and when it is appropriate to return to play involves what Dr. DiFiori calls “baseline testing.” The idea is simple: Use a combination of measures — memory and cognition and balance testing — to establish what is normal for an individual player, perhaps before the season starts. “Then, if the player suffers a concussion, we have an idea of what has changed for that individual,” Dr. Di Fiori says. “Our research indicates that these measures can vary based upon gender and sport, so they should be individualized, not compared to general population norms.”

And clinical diagnostics are undergoing a promising sea change. A new kind of imaging process, diffusion tensor imaging (DTI), models tiny flows of water into the axon, the “connecting” end of a neuron. DTI may lead to the construction of a kind of concussion “map” that has been correlated to clinical symptoms. Another type of advanced scanning, magnetic resonance spectroscopy (MRS), can show changes in specific chemical markers in different regions of the brain, which may correlate with vulnerability to a second injury.

**HERE WAS MY WAY OF PREVENTING ANOTHER CONCUSSION:** I sold the horse. Unfortunately, the world does not usually work in such simple, direct ways. We can’t simply ban contact sports, as some have suggested, not as long as humans crave competition, fans crave spectacle and vast economic interests crave profit. And, sure, we’d like to ban war, but doing so seems highly unlikely. Which brings us to PTS. PTS has often been called “the invisible wound,” but to its victims, there is little that is invisible about their suffering. PTS now afflicts hundreds of thousands of returning vets, with devastating consequences; suicide among returning troops is at an all-time high. Many in the medical establishment believe the crisis is so profound and widespread that it may be too late to do anything for those already injured.

But Drs. Hovda, Giza, DiFiori and others who study brain injury say they are making progress in one area: finding ways to intervene to limit the damage of mild traumatic brain injury (MTBI) in the battlefield. One of their prescriptions is already being used — ever since a series of meetings among Dr. Hovda and various top defense leaders, from Admiral Mike Mullen, former chair of the Joint Chiefs of Staff, to Gen. Eric Shinseki, now the head of Veterans Affairs. Their prescription, proposed after visits to Afghanistan, resembles one they’ve long advocated for athletes with mild concussions: immediate removal from the field of battle.

“Understanding this didn’t come easily,” Dr. Hovda says. There was resistance from officers trained to send soldiers into combat, not to pull them out. But after much discussion, the military came around; they saw the evidence, and they saw the suffering. “All of it resulted in a directive requiring removal of soldiers with mild TBI from the front lines,” Dr. Hovda says. For Dr. Hovda’s efforts, President Obama nominated him to serve on the Defense Health Board, advising the secretary of defense, and Dr. Hovda received the U.S. Army’s Strength of the Nation Award — the highest civilian award given by the Army — in 2011.

In the quest to get UCLA’s new vision of the brain and brain injury on the radar, it was a huge victory. “We made the invisible wound visible,” Dr. Hovda says.

**Greg Critser** writes frequently about medicine and science. His most recent book is *Eternity Soup: Inside the Quest to End Aging* (Random House, 2010).
Two UCLA medical researchers are engaged in a very personal fight against a lethal genetic illness that affects one in every 3,500 boys. Their Center for Duchenne Muscular Dystrophy is leading the effort to find treatments and extend lives — including that of their son.
Dylan Miceli-Nelson, 12, has just gotten a new Xbox One, and it wouldn’t be wise to enter the Miceli-Nelson home these days without preparing for a game of Just Dance 2014 or Call of Duty: Ghosts. He is standing in front of a big-screen television, game controller in hand. His parents, Stanley F. Nelson, MD, a former pediatric oncologist and now a UCLA professor of human genetics, and M. Carrie Miceli, PhD, a UCLA professor of microbiology, immunology and molecular genetics, try to psyche themselves up for a game of Just Dance. Dylan and his brother, Calvin, a junior in college, are ready to bust a move.

“I like to dance,” says Dylan, who has a mop of thick brown hair, dimples and an irrepressibly joyful attitude. “But I don’t like to dance in public. I like pop, rock ‘n’ roll — ’80s — hip hop, rap and electric.”

Drs. Nelson and Miceli sigh, get up from the couch and join in the dance. There’s no way they’re getting out of it.

The work of Drs. Stanley F. Nelson (left) and M. Carrie Miceli (right) to find improved treatments for boys with Duchenne muscular dystrophy may one day help their own son Dylan (second from left), pictured along with big brother Calvin.
Mutations in the Duchenne gene, which is on the X chromosome (thus affecting only boys), impair production of the protein dystrophin, which is required for healthy muscle function.

To say these two parents would do anything for their funny and exuberant son is an understatement. Besides dancing when called upon and fulfilling their parental duties of seeing to homework, teeth brushing and proper use of the English language, Drs. Nelson and Miceli have rerouted their careers to help beat back a disease that afflicts Dylan and one of every 3,500 boys worldwide.

As a toddler, Dylan was diagnosed with Duchenne muscular dystrophy (DMD), the most common fatal genetic disease of childhood. Mutations in the Duchenne gene, which is on the X chromosome (thus affecting only boys), impair production of the protein dystrophin, which is required for healthy muscle function. Boys with Duchenne typically lose their ability to walk by adolescence and go on to experience respiratory and cardiac failure. Life expectancy is about 25 years of age.

But things are changing in the world of those affected by Duchenne. The first prescription medication specifically to treat the disease may be approved by the U.S. Food and Drug Administration (FDA) this year. Other novel therapies are in the works. In Southern California, thanks to Drs. Nelson, Miceli and their UCLA colleagues, boys with Duchenne now have access to state-of-the-art care and can enroll in one of several promising clinical trials. Drs. Nelson and Miceli have not only emerged as leading scientists in the field, they also have rallied a far-reaching network of other UCLA scientists, students and community members to work on all aspects of the disease and those affected by it.

Among DMD researchers and clinicians nationwide, UCLA is known as a dynamic place that has achieved a lot in a short amount of time, says Jeffrey Chamberlain, PhD, McCaw Chair in Muscular Dystrophy at the University of Washington and co-editor of Duchenne Muscular Dystrophy: Advances in Therapeutics. “Their reputation is one of being very-high-quality scientists who are taking a broad approach to muscular-dystrophy research,” he says. “Often at universities, you have one, two or three labs working on muscular dystrophy and being very specialized. UCLA has established a fabulous link between basic research and clinical application.”

Drs. Nelson and Miceli’s colleagues on campus would agree. “Stan and Carrie helped galvanize things on campus,” says Melissa Spencer, PhD, professor of neurology and one of the few Duchenne researchers at UCLA when Dylan was diagnosed. “It has brought in people who weren’t working on Duchenne before, new ideas, new motivation. Now we have the clinical mission, research mission, education mission and community-outreach mission. The breadth of what we’re doing goes beyond the science.”

That’s where Dylan, other local boys with Duchenne and their families come in. As it turns out, love has a place in science.

“Dylan is very funny,” notes Dr. Spencer, who is co-director, with Drs. Nelson and Miceli, of the Center for Duchenne Muscular Dystrophy at UCLA. “He’s a character. He’s very entertaining and fun to talk to. He’s full of love, too.”

Although he forbids his parents to talk shop at the dinner table, Dylan participates in several clinical trials and is good-natured about his doctor visits. In addition to aspiring to become a video-game designer, toy designer, app designer and artist, he recently shared this with his dad: “I want to be the bravest disabled guy in the world.”

**SCIENCE IS A ROCKY ROAD.** For every small success, there are seemingly endless failures. Questions overwhelm answers. Months can go by without a single sign of progress. Researchers cannot afford to get too emotionally invested in the day-to-day stuff. That is the tricky balance required of Drs. Nelson and Miceli.

Even before he was diagnosed, they suspected Dylan had the disease. His gait was unusual, and he tended to walk on his toes. Still, the diagnosis was devastating. The couple made an appointment to speak with Dr. Spencer.

“I knew at the time there was nothing to be done,” aside from giving a child steroids to help prolong the ability to walk for two or three years, says Dr. Spencer. “I prepared a notebook for them with papers on the disease. It wasn’t much, but it was all I could do. I was heartbroken for them.”

The notebook revealed that, since the gene for the disease had been discovered in 1986, important research had been completed that was poised for translation into clinical use; however, in many clinics, very little had changed to improve the boys’ quality of life or life expectancy. “Back when Dylan was diagnosed, often the first message parents would hear in the clinic was that this is a fatal disease,” Dr. Nelson says. “Doctors would say, ‘Take your son home and love him’ — the implicit message being that the medical system had nothing to offer. But the medical system actually has quite a lot to offer. That’s what we’ve been helping to set up at UCLA.”

The Center for Duchenne Muscular Dystrophy at UCLA was established in 2006 to build a
Dylan, traveled out of state to receive specialized care. The clinic is also credentialed with California Children’s Service, which allows boys from families on MediCal to access its many services.

“It’s a fully coordinated clinic,” says Nancy Halnon, MD, associate professor of pediatric cardiology and the center’s clinical liaison, who is a leading physician for Duchenne care. “Duchenne is a complicated disease. Kids have to see multiple specialists. It’s burdensome for a family to try to arrange six different physician visits with six different specialists. Having everyone in one place is good for a matter of convenience, but it’s also good to keep track of how these kids are doing.”

The clinic offers extra services, such as psychosocial care that helps patients and families understand and cope with the disease. Patients can also opt for enrollment in Duchenne clinical trials, the number of which has exploded in recent years. “We’re a go-to site now,” Dr. Miceli says. “We’ve got the population. We’ve got the expertise. We didn’t have those before.”

“Most patients don’t know what clinical trials are occurring in Southern California,” Dr. Nelson adds. “They’re disconnected from the academic. Our goal, and our hope, is to get every single boy with Duchenne on a clinical trial and on multiple clinical trials during his life to try to move the ball forward as fast as possible.”

WHILE NATIONWIDE, ONLY ABOUT 5 PERCENT OF BOYS WITH DUCHENNE participate in a clinical trial, about 50 percent of UCLA’s 80 patients are enrolled in research. And while participation is often motivated by altruism, today there is well-founded hope that some of the ongoing later-stage clinical trials will produce meaningful benefits.

The greatest excitement lies in a novel strategy that reflects a sophisticated understanding of the molecular genetics of the disease and addresses the underlying pathology: the disruption of the protein dystrophin. Several major drug companies are testing protein-replacement strategies that involve tricking muscle cells to produce dystrophin by forcing the skipping of portions of the gene, called exons, which are adjacent to the missing or faulty regions. Exons are the protein-coding portions of genes, and faulty exons can make a once-readable genetic instruction unintelligible. The investigational drugs use small pieces of DNA called antisense oligonucleotides to act as molecular patches that allow the gene to be “read” and thus produce dystrophin.

It’s too early to tell if exon skipping will work. Last fall, the maker of one experimental medication called drisapersen announced that boys taking the medication fared no better than those taking a placebo medication in a phase 3 clinical trial. Meanwhile, a drug called eteplirsen has shown promising results in a phase 2 trial of 12 boys. Boys taking the medication have shown a stabilization of their walking ability compared to boys on a placebo drug. (A walking test is the way the drugs are assessed for efficacy.) When those patients on the placebo were switched to eteplirsen, however, they showed stabilization in their walking ability. Moreover, muscle biopsies showed increased dystrophin. Both companies are in active discussions with the FDA.

“We don’t honestly know whether it’s working, but the data are very encouraging,” Dr. Nelson says. “These boys have now been on the drug for two years, and they produce some dystrophin. Before they made no dystrophin. That’s amazing in itself. This all shows the strategy is a good one.”

Researchers are also learning more about the biology of the disease, Dr. Miceli adds. This information may lead to therapies to manage or modify various symptoms, such as the fibrosis, or scarring, that develops in muscles as a result of the disease. Another strategy focuses on repurposing FDA-approved medications to treat Duchenne. For example, one clinical trial involves using tadalafil, a medication for erectile dysfunction, in patients with muscular dystrophy to relax the blood vessels in muscles during exercise.

At UCLA, Drs. Nelson, Miceli and Spencer are developing strategies to enhance exon skipping using FDA-approved medications. Using the high-throughput molecular-screening technology available at UCLA — which allows researchers to quickly examine thousands of small molecules — they found about 20 drugs that appear to make exon skipping more efficient. One medication, called dantrolene, is particularly promising. Developed
about 50 years ago, dantrolene relieves muscle contractions caused by an adverse reaction to anesthesia, but the UCLA research team has found an exciting new use for the drug.

In December 2012, a study by Drs. Miceli, Nelson and Spencer appeared in the journal *Science Translational Medicine*, demonstrating that dantrolene can enhance exon skipping in mouse models and that mice make more dystrophin and have improved muscle function. Their study also showed that dantrolene enhances exon skipping in cultured muscle cells from DMD patients. These human-cell line experiments open the possibility that dantrolene might improve the efficacy of oligonucleotides currently being tested in the clinic. In 2012, these researchers at UCLA received a grant from the California Institute for Regenerative Medicine to study drug-combination therapies aimed at restoring dystrophin in mouse and human DMD models.

**SUCH SUCCESS IS ATTRIBUTED TO THE COLLABORATIONS** that Drs. Nelson, Miceli and Spencer helped to initiate. Dr. Miceli’s lab has also been working with others to collect skin cells from Duchenne patients that can then be turned into muscle cells in the lab in order to screen drugs more effectively. During this project, researchers must note the precise genetic mutation in each boy’s cells — there are many types of Duchenne mutations — in order to see which drugs work best on various specific mutations.

The research reflects the need to personalize medical therapies. Dr. Nelson and fellow researchers, meanwhile, are looking at patients with the same genetic mutations but who show variations in disease progression. It’s likely that there are other genes involved in Duchenne that modify disease progress and that could be targets for new therapies.

Multiple research collaborations are now ongoing among researchers in disparate fields who, prior to the development of the center, didn’t even know each other. The center has handed out several seed grants on campus to encourage novel research on Duchenne. “At UCLA, everyone was working within individual silos,” says Rachelle Crosbie-Watson, PhD, professor in integrative biology and physiology and neurology, who serves as education liaison for the center. “There were several muscular-dystrophy researchers on campus and we talked to one another, but we weren’t collaborating with each other. That is what Stan and Carrie brought to the table. They’ve connected us.”

For instance, Dr. Spencer has been studying the role of osteopontin, a potent modulator of inflammation and fibrosis, as a new target for the treatment of Duchenne. “Having Carrie, an immunologist, come in and collaborate with us was huge,” Dr. Spencer says. “I bring the muscle perspective and she brings the immune perspective.”

Thirteen labs at UCLA are now working on aspects of the disease. “We’ve got this team that’s very diverse,” Dr. Miceli says. “Nobody in the room has the same skill set. That’s when you get this kind of synergy of talents that really drives a field that had really been quite insular before. Now it’s a paradigm for how you take a rare disease from genetic discovery into the clinic.”

Adds Dr. Nelson: “We think the Center for Duchenne Muscular Dystrophy is the right model for how you tackle rare diseases. You have to take this team-science approach and team-clinical approach, and those two things have to work well together to generate new ideas and new knowledge with an eye toward biotech.”

It’s not surprising that Drs. Nelson and Miceli would think about how the UCLA model might also serve people with other types of rare disorders. Despite Dylan’s diagnosis, they have always looked beyond their specific circumstances. “They are just truly good people,” Dr. Spencer says. “They’re not selfish. They are cautious about not making this only about their son. It’s very admirable. That’s not easy to do, and I think that they have to work at that every day.”

**TAKING THE BROAD VIEW** means that the Center for Duchenne Muscular Dystrophy also assists with fundraising for research, community outreach, education and training. A few years ago, Dr. Crosbie-Watson created an undergraduate course, entitled Molecular Mechanisms and Therapies for Muscular Dystrophy, to give students a taste of how translational medicine can work. Over 10 weeks, students hear lectures from scientists, physicians, physical therapists, parents, patients and members of advocacy organizations.

“We are changing undergraduate education in a phenomenal way,” Dr. Miceli says. “Instead of doing things superficially, you take one subject and do it deeply. You teach the process better.”

The course earned Dr. Crosbie-Watson the UCLA Academic Senate Distinguished Teaching Award in 2013. Students also formed a student group, Bruin Allies for Duchenne — otherwise known as the BADAsses — to foster awareness of the disease. The group has held a campus screening of a 2013
documentary, *Dusty’s Trail: Summit of Borneo*, about a group of people who climb a mountain in Borneo to raise awareness of the disease — the film’s producer is the mother of a son with Duchenne — and sponsored an information booth during UCLA’s Disability History and Awareness Week.

“They’ve experienced the revolution that’s going on in Duchenne research,” Dr. Crosbie-Watson says. “They come out completely changed. One of my students said, ‘This course has changed my life.’ They realize what it means to have a disability, what life is like in a wheelchair. They become miniactivists.”

Despite the enormous growth in clinical care, research and community outreach achieved at UCLA over the past five years, Dr. Nelson says, “We don’t feel like we’re anywhere close to being done. We are not satisfied.” Still, he and Dr. Miceli work hard at balancing their lives as scientists with their role as parents.

“It is a struggle. We set a priority to always be home for dinner,” Dr. Nelson says. “One of the hard parts about the disease is that it’s on a relentlessly progressive course. Dylan’s needs are going to increase over time. We’re well aware of that. We feel we’ve gotten the luxury and ability to focus as much as we can on research and get as much done as we can right now. And then we realize that Dylan’s needs will change over time.”

“I learn a lot from them,” Dr. Crosbie-Watson notes. “I learn about what’s important in life. I learn about commitment to a cause. Research isn’t easy. There are huge disappointments. They provide a lot of hope and motivation to keep moving forward.”

Dylan is a recipient of that hope. Over time, his parents have helped him understand the disease and that they are working on therapies to treat boys like him. “It gives him hope and makes him feel he is part of that process,” Dr. Miceli says. “We’re not the ones to say, ‘We’re finding a cure for you, sweetheart.’ That’s not what we do. We’ve never made those promises, and we never will. But he does like to think that the field is advancing and that we are all helping with that.”

Dylan doesn’t even mind hanging around his parents’ labs on occasion. “I think it’s helpful — what they’re doing,” he says. “They’re helping kids. If no one was working on it, that wouldn’t be good.”

He has become keenly interested in disability rights and is proud to show off his service dog, Kong, a golden retriever/lab mix whose specialty is providing affection. Dylan can still walk around the house, although he uses a scooter outside the home. Still, just like his parents, he has the ability to seize the moment and make the most out of any situation. He describes how impressed he was with a buddy after the two recently conducted an outdoor race, his friend on foot and Dylan on his scooter.

“He beat me,” Dylan says, with a grin. “And I pretty much go full speed.”

Shari Roan first wrote about Drs. Stanley F. Nelson and M. Carrie Miceli and their son Dylan for the Los Angeles Times in 2010.

For more information about the Center for Duchenne Muscular Dystrophy at UCLA, go to: cdmd.ucla.edu

Dylan, with his service-dog Kong, recently told his father, “I want to be the bravest disabled guy in the world.”

“One of the hard parts about the disease is that it’s on a relentlessly progressive course.”
For Junie Reypach, depression has been more than just a bad case of the blues. The 32-year-old mother of two was first diagnosed with major depressive disorder, or unipolar depression, when she was 13 years old. Over the years, she sought help from six different physicians and psychiatrists and tried more than a dozen medications, but her depression eventually darkened every aspect of her life, starting from the moment she — reluctantly — woke up every morning. “I was pretty much at my wit’s end,” Reypach recalls. “I didn’t know what to do anymore.”

A friend told Reypach about a promising new form of therapy underway at UCLA. Known as repetitive transcranial magnetic stimulation (TMS), it is one of a suite of therapies that falls under the umbrella of “neuromodulation” — the use of electrical or magnetic impulses to stimulate brain cells to alter, or modulate, their pattern of activity to achieve a therapeutic benefit. “When I first heard about TMS, I put it in the back of my mind,” she says, “and then when I was desperate to find something, I looked into it.”

Reypach was soon enrolled in the TMS-treatment program at the UCLA Depression Research and Clinic Program. Within a week of starting a 30-session course of five-days-a-week treatments, her depression began to lift. “I’m able to get up every morning now and not have a problem,” she says. “Before I would dread getting up, hoping that tomorrow would be a better day. Now, tomorrow is actually going to be a better day because I feel a lot better.”

By using magnetic or electrical stimulation to alter neural activity in the brain, neuromodulation joins medications and psychotherapy as a third domain for the treatment of difficult psychiatric disorders.
Compared to medications, where once you stop the likelihood of relapse is very high, TMS seems to be a pretty durable treatment.

The introduction of psychiatric drugs in the mid-20th century revolutionized the treatment of mental illness, just as psychotherapy had done decades before. But neither drugs nor therapy are perfect fixes for all patients. Twenty-to-30 percent of patients suffering from depression do not respond to antidepressants, or they suffer from intolerable side effects. For such patients, neuromodulation offers hope.

“Neuromodulation is a huge developing field of psychiatric research and clinical treatment,” says psychiatrist Alexander Bystritsky, MD (FEL ’87), PhD, director of UCLA’s Anxiety Disorders Program. “Before, we had two main domains of psychiatric research and treatment: medication and psychotherapy. Neuromodulation now is the third domain.”

In TMS, which was approved by the U.S. Food and Drug Administration (FDA) for treatment of unipolar depression in 2008, an electromagnetic coil is positioned over a specific location above the patient’s scalp. When the magnet is activated, it delivers short, targeted electromagnetic pulses. The pulses, which are about the same strength as those used in magnetic resonance imaging (MRI), pass through the skin and skull and into the brain, to a depth of about 5 centimeters, or 2 inches, to areas believed to be involved in regulating depression and mood control. There, the magnetic field induces a directed current that activates nerve cells. Although the exact mechanism by which this helps to reduce depression is not yet fully understood, “we do know that the brain largely communicates by sending electrical signals, so when you bring a magnet to the brain, it is going to affect that signal transmission,” Dr. Bystritsky explains.

A typical course of treatment involves 30 sessions of 30-to-60 minutes each. The side effects are mild; patients may experience a headache and tingling in the scalp, and they may be irritated by the tapping noise generated by the device, which is much like that produced by an MRI machine.

“Depending on where they place the magnet, it can be annoying,” recalls Reypach. The procedure is not painful, she says, but “sometimes it’s a little uncomfortable.” After 10 or 15 minutes, “you get used to it.”

Like medications and psychotherapy, TMS doesn’t help all patients. But many, like Reypach, report remarkable success, says Ian Cook, MD (RES ’94, FEL ’91, ’96), professor of psychiatry and bioengineering and director of the UCLA Depression Research and Clinic Program. “It can get them to wellness when other treatments have failed. For example, we treated an individual who had to stop college because of his depression, and multiple medication attempts did not help; after TMS, he is back in school.” While the patient still is on some medications, “our hope is that he will be able to be on less,” Dr. Cook says. “It is really a beautiful thing to see.”

For most patients, the improvement following the end of their treatment regimen “tends to stick,” says Dr. Cook. For example, a follow-up study of subjects in the trial that led to the device’s initial approval in 2008 found that two-thirds of the patients whose depression was improved tended to stay in remission while taking just one antidepressant medication. “And most of those who did have some symptoms return were able to be brought back into wellness with just a few treatments — like five or 10, not the full 30,” Dr. Cook says. “Compared to medications, where once you stop the likelihood of relapse is very high, TMS seems to be a pretty durable treatment.”

In addition to unipolar depression, many people seek care for closely related conditions, such as depression as part of manic depression or depression coupled with post-traumatic stress (PTS), “and we have been able to offer them the option of clinical treatment with TMS,” Dr. Cook says.

The treatment of other psychiatric conditions “is in an exploration phase,” Dr. Bystritsky says. “If we find tools to target the brain precisely to focus on the activation of disease-specific circuits, it would be conceivable to treat other psychiatric and medical disorders very effectively with this technique. We are just at the beginning. We are where pharmacology was about 40 years ago.”

Like TMS, another neuromodulation approach, trigeminal-nerve stimulation (TNS), aims to alter the pattern of electrical activity in the brain. In TNS, electrodes that deliver the pulses of energy are applied directly to the surface of the skin. TNS was invented by Dr. Cook, UCLA neurologist Christopher DeGiorgio, MD (FEL ’87), and colleagues, and licensed by UCLA to a Los Angeles company, Neuronetics.”
Angeles-based neuromodulation company called NeuroSigma. The system has been approved for use in Canada and Europe but has not yet received FDA approval for general clinical use in the United States and is still considered experimental. (NeuroSigma is now working with the FDA to obtain approval for TNS to be used clinically in the U.S.) During TNS treatment, a patch connected by leads to a cell-phone-sized signal-generator box is attached to the forehead and worn for about eight hours at night, while the patient sleeps. The patch delivers a low-energy current of between 1 and 5 milliamps — much less energy than is used to power a light bulb — to stimulate branches of the trigeminal nerve. The trigeminal nerve normally transmits sensations from the face, mouth and the surface of the eyes into the brain; in TNS, this pathway is co-opted to send signals deep within the brain to a part of the frontal lobe called the anterior cingulate, which is involved in regulating mood and emotion.

“It allows us to get some information into the system that can cause very robust increases in the activity levels of these centers of the brain,” leading to therapeutic benefits, Dr. Cook says. (A related technique, vagus-nerve stimulation, involves the surgical implantation of a device in the front of the chest connected to an electrode that stimulates a nerve in the neck known as the vagus. FDA-approved in 2005, it has also shown promise in the treatment of medication-resistant depression. The method, however, is not covered by most insurance plans or Medicare.)

Like TMS, another neuromodulation approach, trigeminal-nerve stimulation (TNS), aims to alter the pattern of electrical activity in the brain.

Junie Rey pach, pictured with daughters Natalia, 5, and Eva, 22 months, was diagnosed with major depressive disorder when she was 13 years old. Treatment at UCLA with transcranial magnetic stimulation has made her feel “tomorrow is actually going to be a better day because I feel a lot better.”
The first success of TNS treatment was described in 2003 by Dr. DeGiorgio in patients with medication-resistant epilepsy; in 2010, Dr. Cook and his colleagues reported a 70-percent reduction in symptom severity in patients with major depression, that had not responded to medications.

More recently, UCLA researchers have begun testing the technique in people with PTS and in children and adolescents with attention-deficit hyperactivity disorder (ADHD). As reported last spring, subjects in the pilot ADHD study, led by James McGough, MD (FEL ’91), MS, professor of clinical psychiatry at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, showed encouraging improvements in behavior and on cognitive tests. “Aside from the sensation in the skin, which people often report as a tingling feeling or a buzzing, there is not much else that happens from a physical standpoint,” says Dr. Cook, a collaborator on the ADHD study. “People don’t get high, they don’t get sedated; TNS doesn’t produce any kind of weird sensory effect,” Dr. Cook says. “If anything, subjects say that they are better able to focus, and that, plus findings from our neuroimaging work, is why we were led to do the study in ADHD.”

NEUROMODULATION METHODS LIKE TMS AND TNS

NEUROMODULATION METHODS LIKE TMS AND TNS have only recently come into use in psychiatry. However, the idea of producing a seizure in the brain to trigger a change in its activity can be dated back to the 16th century, when chemical agents were used to induce seizures in mentally ill patients — a practice that continued, in one form or another, into the 20th century. In the late 1930s, the first patients were treated with electroconvulsive therapy (ECT), which uses electrical energy to induce a seizure. ECT, once commonly known as electroshock therapy, uses two electrodes, placed at precise locations on the head, to induce a generalized seizure throughout the brain. The patient, who is under anesthesia and has been given muscle relaxants, has no awareness of the seizure. “ECT has a multitude of effects. Although we don’t have a precise understanding of its mechanism, it still is one of the best treatments that exist for refractory depression,” says Randall Espinoza, MD (RES ’94, FEL ’96), MPH, clinical professor of psychiatry and biobehavioral sciences and medical director of UCLA’s ECT program. As the largest academic ECT program west of the Mississippi, it performs more than 2,100 ECT treatments on approximately 180 patients each year.

Studies show that a typical course of ECT — generally six-to-12 treatments — is effective in patients with psychotic, catatonic or melancholic depression more than 90 percent of the time and helps 50-to-60 percent of patients with medication-resistant depression.

The exact mechanism by which ECT reboots the depressed brain into a state of wellness is still not fully understood, but the neurophysiological effects of the induced seizure are well-documented, Dr. Espinoza says. They include alterations in the brain’s structural and functional connectivity, brain neurochemistry and normalization of blood flow to brain regions involved in depression, correction of neuroendocrine dysfunction and normalization of various brain neurotransmitter systems involved in depression. Studies also have shown that ECT — which appears to be useful not just for depression, but also for a variety of other treatment-resistant mental disorders — induces the growth of brain cells and nerve-cell synapses.

COMPARED TO GENERALIZED THERAPIES LIKE ECT

COMPARED TO GENERALIZED THERAPIES LIKE ECT, deep brain stimulation (DBS), a surgical procedure that involves the implantation of electrodes that deliver electrical impulses into specific areas of the brain, is a finely targeted treatment, shown to be effective for movement disorders such as Parkinson’s disease, dystonia and treatment-resistant epilepsy. It also is being investigated for chronic pain and headaches and, most recently, psychiatric conditions including depression, for which it is not yet FDA-approved.

“When you have a condition like depression or Parkinson’s disease, it causes changes in the
way that the brain functions and creates different patterns — or rhythms — of activity,” says neurosurgeon Nader Pouratian, MD ’03, PhD ’01, director of UCLA’s Neurosurgical Movement Disorders Program. “Deep brain stimulation modifies that abnormal pattern of activity to make it a little bit closer to normal.”

DBS is a two-stage procedure. In the first, electrodes are inserted, their placement guided by simultaneous MRI scanning, into particular regions of the brain that are chosen based on the patient’s condition. For treatment of depression, for example, the target area is a part of the cerebral cortex known as the subgenual cingulate cortex, or area 25. After the patient heals from that surgery, a generator to power the device is implanted in the chest and turned on.

When DBS is used for movement disorders such as Parkinson’s and epilepsy, “we turn on the device and see an almost immediate effect on the patient’s movement, stiffness and rigidity,” explains Dr. Pouratian. Such quick response is generally not the case with psychiatric disorders, “although some depression patients will say that there is a sensation of well-being, of feeling better. One patient said that he immediately felt this black cloud being lifted from over his head,” Dr. Pouratian says. “As soon as you turn the stimulator off, that black cloud comes back.”

In most patients, reaching a therapeutic level of stimulation may take a few weeks or a month of fine-tuning. “We try them at a certain level, then they come back in, and we re-evaluate them and keep turning the stimulation up until we see a therapeutic effect,” Dr. Pouratian says. “It is a much longer process of programming than we see with movement disorders.”

However, benefits of the therapy tend to be more durable in psychiatric patients than in those with movement disorders. “Assuming you have a therapeutic effect, in most people you will continue to see that for some period of time after you turn the stimulator off — one to two weeks — before the symptoms recur,” he notes.

IN ADDITION TO STUDYING THE USE OF DBS IN DEPRESSION, researchers at UCLA and elsewhere have begun investigating it for other psychiatric disorders, including Tourette’s syndrome, and to help persons with addictive behaviors, such as drug dependency and alcoholism. The FDA already has approved the use of DBS for the treatment of patients with obsessive-compulsive disorder (OCD), under its so-called humanitarian-device exemption.

“The FDA is not speaking to its efficacy, but it thinks it is safe, and OCD is a disease that doesn’t have many good therapeutic options, so it wanted to make this available,” Dr. Pouratian notes. “We’re also interested in treating patients with disorders of consciousness, people who have had brain injury or stroke or other neurological diseases and are either in a vegetative state or a minimally conscious state,” he says. “The goal is to use DBS or other forms of neuromodulation to awaken those patients and make them more functional and interactive.”

Despite the promise offered by neuromodulation, experts like Dr. Pouratian remain cautious. “A lot of effort has been taken to make sure that the advance of neuromodulation for psychiatric diseases has been done in an ethically appropriate manner, that we’re not taking advantage of people who are at a period of desperation,” he says. He adds, “I think that what is going to happen when we get over these hurdles, and we start showing that this can actually make a big difference in people’s lives, is that it will become increasingly accepted and adopted. Instead of saving it as a last-line therapy, we’ll be able to do it much earlier in peoples’ diseases as part of a multidisciplinary treatment, along with therapy and medication.”

From that standpoint, neuromodulation may be at the vanguard of “a new era for the treatment of brain disorders,” Dr. Cook says. “We’ve clearly restored many lives through medication and psychotherapy, but people do not do as well with medications as we would like, and unmet needs remain. Neuromodulation techniques — TMS, TNS and the like — really can give us more arrows in our quiver to help patients with forms of illness that don’t respond well to meds.”

“Neuromodulation techniques — TMS, TNS and the like — really can give us more arrows in our quiver to help patients with forms of illness that don’t respond well to meds.”

Kathy Svitil is a freelance writer and director of news for the California Institute of Technology.
Dr. Cherry, UCLA Distinguished Research Professor of Pediatric Infectious Diseases, is a world expert on *bordatella pertussis*, the bacterium that causes whooping cough. And he is a fierce advocate for sometimes unpopular but, in his view, essential evidence-based immunization strategies against the illness. His dual passions for medicine and skiing have intersected in small but satisfying ways over the years. He has presented more than 220 lectures around the world on vaccine-preventable disease, affording him opportunities to ski throughout the United States, Canada, Chile, Argentina, France, Austria, Switzerland and New Zealand.

With a lean, still-athletic physique and a serious but soft-spoken demeanor, Dr. Cherry continues to demonstrate a ferociously adventurous spirit. Now in semi-retirement, he continues to co-edit the iconic *Feigin and Cherry’s Textbook of Pediatric Infectious Diseases*; the seventh edition of the two-volume text was just released. He is currently working on several statewide studies of pertussis infant deaths and the use of exchange blood transfusions to treat severe pertussis in infants. He also returned this winter from an annual backcountry ski trip along the border of Chile and Argentina.

Skiing is a passion that began early in Dr. Cherry’s life. He received his first pair of skis as a Christmas gift when he was 4 years old, in 1934. Chair lifts didn’t exist then, and only one ski area in the country had a rope tow, so the New Jersey boy learned to trudge uphill while carrying his Sears & Roebuck skis—a pair of wooden planks with leather toe straps.

Perhaps it was that early determination that set Dr. Cherry on his path. He excelled at sports throughout his childhood: track, basketball, soccer and, of course, skiing. While a student at the University of Vermont College of Medicine, he worked holidays as a member of the Stowe Ski Patrol. He continued to ski while pursuing his residency and fellowship in pediatrics and infectious disease at Boston City Hospital and Kings County Hospital Center and during breaks while earning his MSc degree in epidemiology from the London School of Hygiene and Tropical Medicine.

Now a little stooped and slowed by three compression fractures in his back, Dr. Cherry still gets on the slopes as many as 40 days a year. He regularly stretches and recently took up yoga to keep in shape. In 2008, he earned Level One avalanche certification and now carries a shovel, a probe and a beacon, among other supplies, in case a member of his skiing group is caught in an avalanche and has to be rescued. Not even that potential danger can dissuade him from heading to the backcountry.

“I like getting off the trail and going through trees,” he says. “The sense of freedom it gives is thrilling.”

Not all of Dr. Cherry’s survival tools are of the physical sort that would fit into a backpack. With more than 50 years of experience in research, teaching and clinical practice in pediatric infectious diseases and epidemiology, Dr. Cherry has played a major role in shaping vaccination strategies against...
In the 1980s, when there were allegations, ultimately proven in a Journal of the American Medical Association article, that the whole-organism version known as DTP, significantly reduced the number of children hospitalized or killed by the disease, it did contain an endotoxin that caused side effects such as fever, pain and swelling at the injection site. When media reports based on faulty science linked the vaccine to infant encephalopathy in the 1980s, angry parents filed lawsuits and pharmaceutical companies began halting production of the vaccine. While he acknowledged the side effects of the vaccine’s endotoxin, Dr. Cherry strongly disputed claims that the vaccine caused brain damage. “It is time for the myth of pertussis-vaccine encephalopathy to end,” he wrote in a Journal of the American Medical Association article and an editorial in The New York Times.

In response, anti-vaccination parent groups vilified him as a pawn of the pharmaceutical industry because he received grant money to study pertussis. “Someone wrote a book saying I was just about the worst person who ever lived,” Dr. Cherry recalls. “People testifying in lawsuits accused me of all kinds of things. I even received some calls and letters containing threats of harm.”

In 1991, an acellular version of the vaccine (DTaP), which contains only parts of the bacterium, replaced DTP. Dr. Cherry’s subsequent studies of DTaP showed the vaccine causes fewer side effects, but is less effective at producing immunity. Undeterred by a challenge, Dr. Cherry is now working on creating a new, genetically modified whole-organism version of the pertussis vaccine and has no qualms about stepping back into the fray. “There are always people who can make money out of criticizing vaccines, but I’m not worried about it,” Dr. Cherry says. “We think we know how to make a better vaccine.”

Kim Kowsky is a freelance writer in Los Angeles.
East Meets West

Kathleen Johns Zisser, MD ’90, is a board-certified specialist in physical medicine and rehabilitation and has also done extensive training in medical acupuncture, yoga, guided imagery and reiki. She combines these areas of interest in her private practice, East West Medicine of Santa Barbara, California, where she focuses on pain management, stress reduction and wellness.

I have been fascinated with the mysteries of the human body since an early age, which led me to the study of medicine. It wasn’t until later that I discovered my deeper interest in the study and care of the human being — mind, body and spirit — through the vantage point of Eastern medicine.

I was introduced to yoga and other Eastern philosophies through religious-studies classes in college, and they resonated deeply with me. Later on, after completing my medical training and becoming immersed in my physical medicine and rehabilitation inpatient practice, I discovered the medical acupuncture program through UCLA and enthusiastically embraced this training and began to use these techniques with my orthopaedic, pain and neurologic patients.

I went on to do a more in-depth study of traditional Chinese medicine to try to better understand the Eastern view of the origins of health and disease. I learned about the concepts of “Yin and Yang” and “Qi” and started becoming familiar with descriptive terms, like “heat,” “damp,” “wind” and “fire,” to describe the processes within the human body. They were poetic, nature-based terms used as metaphorical descriptors for the same conditions that Western medicine describes with its Latin-based verbiage. Same issues, different language, different world-view.

In the East, the human being is seen as a whole, energetic and interdependent entity, whereas in the West, we tend to view the person from a reductionist, nuts-and-bolts perspective. Both perspectives have value and not only complement but also depend on each other. We need both to see the bigger picture and to provide the care that our patients really need.

High-tech medicine is miraculous, spectacular and wonderful, but there is a deep wisdom hidden in low-tech offerings that can really fill in the gaps. That is why I was so excited to hear about UCLA embracing the Urban Zen program. By using some modern versions of ancient healing tools, including restorative yoga poses, in-bed movements, breath awareness, guided body scans, aromatherapy and therapeutic touch, practitioners can alleviate the symptoms of pain, anxiety, nausea, insomnia, constipation and exhaustion in hospitalized patients and bring some much-needed relief, as well as cost savings on medication use. Program patients are empowered to be more active participants in their own healing process and learn about the importance of self care.

In Her Own Words: Nisha Abdul Cader, MD ’95

Pediatrician Nisha Abdul Cader, MD ’95, is medical director for the Suspected Abuse Response Team, pediatric consultant for Martha’s Place Children’s Assessment Center and supervising physician at the Juvenile Service Center for the County of San Luis Obispo, California. Dr. Abdul Cader also works with Tri-Counties Regional Center, providing eligibility and medical consultation for the developmentally disabled. She received the 2012 Hands on Hero Award for her dedication to the health and well-being of the youngest and most vulnerable residents of San Luis Obispo County. As a medical student and pediatric resident at Harbor-UCLA Medical Center, Dr. Abdul Cader co-founded the UMMA Community Clinic in South Central Los Angeles.

Recent research links how abuse, neglect and exposure to violence not only affect long-term quality of life, but also directly influence brain development. These factors are compounded in children with developmental disabilities or special needs.
Postcard from Vietnam

Mark Silverberg, MD (FEL ’00), FAAP, FAAO, is a pediatric ophthalmology specialist at Sansum Clinic in Santa Barbara, California. He is a Surgical Eye Expedition (SEE) International affiliate who volunteers with local vision programs for veterans, underrepresented communities and children with medical needs. Dr. Silverberg has been on medical expeditions to LV Prasad Eye Hospital in Hyderabad, India, Kikuyu Eye Hospital in Kenya and Da Nang Eye Hospital in Vietnam.

In 2002, I traveled to Da Nang, Vietnam, with SEE. I was joined by my father, Harvey Silverberg, MD, also an ophthalmologist. It was an amazing experience on many levels. First, to be able to travel to another country and perform eye surgeries alongside my father was a genuine treat.

Second, I was apprehensive about our reception in a country that in recent memory had been our nemesis. My apprehension was instantly alleviated by our gracious Vietnamese hosts and by the warmth of our patients. The doctors and nurses were incredibly thirsty to share our knowledge and technology. In particular, they had limited exposure to strabismus surgery, so they were incredibly excited to see the Apt clamp, a spring-loaded eye muscle clamp developed by the late Leonard Apt, MD, of UCLA’s Stein Eye Institute. As a parting gift, I left a clamp for them to keep. The surgeons were thrilled.

Third, I was very impressed with the Vietnamese surgeons. Their clinical volume was extraordinary. In the one week we were there, we saw profound pathology, including dozens of mature cataracts, advanced strabismus and a case of bilateral retinoblastoma. The Vietnamese surgeons were quite skilled, all the more so given their limited resources. For example, I was amazed at their precision while performing a suture-free extra capsular cataract extraction. Truthfully, it was humbling to see how our Vietnamese hosts were able to achieve outstanding results with such minimal equipment.

One of the most memorable moments was being in the middle of a complex strabismus case when the power went out. The whole operating room was pitch black. The Vietnamese nurses calmly explained this was a regular occurrence. We finished the case under the dim illumination of a handheld 99-cent flashlight, and the patient did great.

Since returning from Vietnam, I have immersed myself in the Santa Barbara Vision Care Program, a SEE program. Ironically, I realized that one does not have to travel across the globe to see impoverished populations with advanced pathology. Here in Santa Barbara, I see dozens of children with amblyopia and strabismus. Through the generosity of local organizations, including Santa Barbara Cottage Hospital and Santa Barbara Eyeglass Factory, I am able to treat these children who would otherwise lose their vision.

For more information about SEE, go to: seeintl.org

Due to prenatal substance exposure. As a pediatrician serving the most vulnerable populations in San Luis Obispo County, I apply these concepts in my evaluations and treatments to support physical and emotional development.

Since 2006, I have collaborated with the multidisciplinary team at Martha’s Place Children’s Assessment Center, named after a local adopted teen who took her own life as she struggled with the effects of prenatal alcohol exposure. This San Luis Obispo County and nonprofit partnership, which opened its doors to the birth-to-5-year-old population in 2006, provides comprehensive assessment and treatment to children with prenatal substance exposure or at-risk behaviors that may interfere with development. The assessment identifies unique challenges and strengths and provides a road map to a variety of services.

While 74 percent of children with drug and alcohol exposure meet the criteria for attention-deficit hyperactivity disorder (ADHD), their symptoms of inattention, impulsivity and hyperactivity are often aggravated by standard ADHD medications.

Foster children face higher risk and are found to be prescribed more psychotropic medications for ADHD and other mental-health concerns. An early childhood comprehensive evaluation helps identify causes of behaviors and developmental delays, which may otherwise be misinterpreted and mislabeled in educational and placement settings.

For more information on Martha’s Place Children’s Assessment Center, go to: sloparents.org/2009/10/marthas-place
An Illuminating Evening

On January 22, 2014, the inaugural Luminary Awards to benefit the UCLA Department of Head and Neck Surgery were held at the Beverly Wilshire Hotel.

The event, which raised funds for the UCLA Department of Head and Neck Surgery, honored:

- **James Bashor**, a leading real-estate developer, and his wife Dianne, longtime UCLA donors, especially committed to the department’s Voice Center for Medicine and the Arts, which helps patients with poor or lost voices return to normal, productive speaking;

- **John Mayer**, a Grammy Award-winning singer, songwriter and producer and a healthcare advocate who generates awareness for the department’s research, treatments and life-saving endeavors;

- **Jerry Moss**, co-founder of A&M Records, and his wife Ann, generous friends of the department, who funded the newly completed Sound Studio at the UCLA Voice Center for Medicine and the Arts.

Guests were entertained by special guest performer Celine Dion, as well as honoree, John Mayer. Wayne Newton served as master of ceremonies.
International recording artist Celine Dion provided the evening’s entertainment.

Mobile Clinic Project at UCLA

The Mobile Clinic Project (MCP) at UCLA is a student-run program that provides healthcare and social services to the homeless and medically indigent by way of an equipped van. MCP’s mission is to improve health outcomes and quality of life by providing direct medical services, health-promotion and disease-prevention activities, social support and case management and referrals.

In fall 2013, the MCP received an influx of support from a new generation of philanthropists. Jonathan and Robert Lee, creators of The Foundation Boys, secured gifts totaling $50,000 from donors and a local foundation.

Established in 2007, The Foundation Boys is dedicated to matching public-service projects with prospective funders and teaching the next generation about the impact of giving. “We have been fortunate to see the MCP in action and the magnificent caring and respectful service provided,” Jonathan Lee says. “Basic healthcare is a right for every human being,” Robert Lee adds. “As young people, we want to spotlight the greatness achieved by UCLA and its students.”

Students have provided care for thousands of low-income and homeless individuals through MCP.

To learn more about the Mobile Clinic Project at UCLA, go to: mcp.ucla.edu
An inaugural dinner to celebrate the Ambassadors of the UCLA Division of Digestive Diseases was held October 24, 2013, in Beverly Hills, California. The Ambassadors, a new group of volunteer community leaders, are:

- Andre Agassi, founder, Andre Agassi Foundation for Education
- Chris and Vicky Cornell, founders, Chris and Vicky Cornell Foundation
- Peter Diamandis, chairman and CEO, XPRIZE Foundation
- Jim Gianopulos, chairman and CEO, Twentieth Century Fox Film
- Dr. Gary Gitnick, co-chief, UCLA Division of Digestive Diseases and founder, The FulFillment Fund
- Andrew Hauptman, chairman, Andell, Inc.
- G. Bradford Jones, founding partner, Redpoint Ventures
- Jeffrey Katzenberg, CEO and co-founder, DreamWorks Animation SKG
- Vatche Manoukian, co-founder, Vatche and Tamar Manoukian Foundation
- Kevin Mayer, executive vice president, Corporate Strategy and Business Development, The Walt Disney Company
- Joan Payden, president and CEO, Payden & Rygel
- Chip Rosenbloom, president, Open Pictures
- Bren Simon, co-founder, Melvin and Bren Simon Charitable Foundation

The Ambassadors will play a key role in broadening awareness of the division and its work by serving as thought leaders and engaging others to envision what the future can hold for research, patient care and education. The event was catered by chef and restaurateur Wolfgang Puck and hosted at the home of Dr. Eric Esrailian (FEL ’06), co-chief of the division, and his wife Dr. Melina Esrailian.

The Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA hosted the inaugural Leo Rangell Endowed Lecture on November 14, 2013, at UCLA’s Carnesale Commons. Dr. Eric R. Kandel, a 2000 Nobel Laureate in Physiology or Medicine and 2013 Leo Rangell Visiting Scholar from Columbia University, was the keynote speaker. Nearly 700 faculty, students and guests attended Dr. Kandel’s presentation, which featured a discussion of the arts and artists of the early 1900s in Vienna and an examination of the modern understanding of the human mind. The Leo Rangell Professorial Endowment in Psychoanalysis is made possible by a generous gift from Stewart and Lynda Resnick to celebrate, perpetuate and advance the work of Dr. Leo Rangell in psychoanalysis through an investment in scholarship, education and research in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.
Gifts

The Bloomfield Family Foundation, in memory of Kory Lewis Hunter, made a $250,000 gift to support Dr. Timothy Cloughesy (RES ’91, FEL ’92), director of the UCLA Neuro-Oncology Program, and his innovative brain-cancer research. Mr. Hunter passed away in May at the age of 43, after a 22-month battle with brain cancer. He was a devoted husband, father, brother and son and a dedicated community volunteer, committed to helping others.

The Goldhirsh-Yellin Foundation made a multi-year gift of $475,000 to the UCLA Division of Endocrinology, Diabetes and Hypertension to support the research of Dr. Anthony Heaney, director of the UCLA Pituitary Tumor and Neuroendocrine Program. Neuroendocrine tumors (NETs) are difficult to diagnose in the early stages and often present with extensive metastases. While the death rates from many cancers have decreased in recent years, mortality rates for NETs remain high. This vital support will provide seed money for promising innovative research leading to a better understanding of the progression of the disease and novel treatments to combat these intractable and often fatal cancers.

Melissa and Timothy Pennington have pledged $300,000 to the Jonsson Cancer Center Foundation at UCLA to advance pediatric sarcoma care and research under the direction of Dr. Noah Federman (RES ’05, FEL ’08). This generous gift continues the Penningtons’ ongoing support of Dr. Federman’s life-changing efforts and complements their long-standing commitment to highest priority research at UCLA’s Jonsson Comprehensive Cancer Center.

The Jean Perkins Foundation continues to generously support the UCLA Department of Surgery’s Center for Advanced Surgical and Interventional Technology (CASIT). The foundation renewed its commitment with a $425,000 gift that will underwrite the Prosthetic and Balance Haptic Project and fund a new MIMIC surgical simulation training system. Joining a da Vinci robotic surgery system, a human patient simulator and laparoscopic surgical simulators and tools maintained by CASIT, the MIMIC will help recreate the look and feel of operating on the robot. It will provide 3D visualization across a wide variety of surgical-skills exercises and enable residents, fellows and students to realistically learn the robotic-surgery system. CASIT, a research facility led by executive director Dr. E. Carmack Holmes, professor of surgery, David Geffen School of Medicine at UCLA, has a mission to advance surgical and interventional technology and revolutionize surgical education and training.

The Anthony & Jeanne Pritzker Family Foundation has made a $100,000 payment toward its $200,000 pledge to the Nathanson Family Resilience Center in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. This gift will enable Dr. Patricia Lester (FEL ’00), director of the center, and her colleagues to adapt the FOCUS (Families OverComing Under Stress) on the Go! mobile application to promote wellness in foster youth and families.

Board members of The Thalians present a check to Dr. Thomas Strouse, medical director of the Stewart & Lynda Resnick Neuropsychiatric Hospital at UCLA. Pictured are Ruta Lee (chair emeritus), Stephanie J. Hibler, Barbara Cohen-Wolfe, Kira Lorsch, Frank Sheftel, Brian Theobald, Larry Wolfe and Andrew Mc Donald. Photo: Reed Hutchinson

The Thalians made a $100,000 gift to the Stewart & Lynda Resnick Neuropsychiatric Hospital at UCLA to help support mental-health services for members of the United States military and their families who come to UCLA through Operation Mend.

The Jonsson Cancer Center Foundation at UCLA has received a $300,000 gift from Denise and Peter Wittich to support The Wittich Family Program for Clinical/Translational Cancer Research under the direction of Dr. Dennis Slamon (FEL ’83), Parlow-Solomon Professor on Aging in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. The Wittons, both UCLA alumni, have provided long-standing support for a multitude of programs within UCLA.

The check was presented during The Thalians’ annual Holiday Dinner Dance at Bel-Air Country Club on December 6, 2013. For more than 60 years, The Thalians “Hollywood for Mental Health” has made great strides in raising awareness of mental illness and supporting research, education and treatment for patients of all ages.

Bob and Marion Wilson made a generous gift of $1 million to fund research on early detection and treatment of Alzheimer’s disease under the direction of Dr. Gary Small (FEL ‘83), Parlow-Solomon Professor on Aging in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. The Wilsons, both UCLA alumni, have provided long-standing support for a multitude of programs within UCLA.

You have the power to make a difference! By making a gift to Partners for Care, you help us fulfill our mission to deliver outstanding, compassionate care to every patient who comes through our doors. Share your power by becoming a member of UCLA Health’s Partners for Care today.

For more information or to make a gift, go to: uclahealth.org/pfc or contact Brian Loew, director of development, Patient Programs, at (310) 794-7620

To learn more about CASIT, go to: casit.ucla.edu

power of U
Partners for Care
Education and friendship marked the celebratory Second Annual UCLA Health Board Meeting on November 14, 2013. After welcoming remarks from Chairman Henry Gluck, former CEO and chairman of Caesar’s World, Drs. David T. Feinberg (RES ’92, FEL ’94), president of UCLA Health System, and Eric Esrailian (FEL ’06), co-chief of the UCLA Division of Digestive Diseases, discussed how changes in healthcare today affect individuals. Dr. Linda Liau (RES ’97, FEL ’98), director of UCLA’s Brain Tumor Program, then discussed promising research breakthroughs in personalized medicine. The distinguished board members are ambassadors for UCLA Health and support its purpose to heal humankind one patient at a time by funding invaluable health-system programs that address the crucial healthcare issues of today, further its patient-centered efforts and provide care to families in financial need.
(From left) Dr. A. Eugene Washington, vice chancellor of UCLA Health Sciences, Richard Hilton, Gloria Holden and Ambassador Glen Holden.

Dr. David T. Feinberg (RES ’92, FEL ’94), president of UCLA Health System, discusses healthcare reform.

People-Animal Connection Program volunteer Don Rottman with Finn.

(From left) Ronald Katz, Meyer Luskin and Jeff Pion.

(From left) Dr. David T. Feinberg (RES ’92, FEL ’94), Victoria Murray, Carl Murray and Marcia Shackelford, executive director of UCLA Health Development.

Henry Gluck, chairman (right), with Neal and Beth Cutler.
The people of Erbil, Iraq, are a fascinating bunch, resilient and strong. My UCLA colleague, social worker Albert L. Hasson, and I are here to help the Iraqis develop a survey to assess substance abuse in their country and, ultimately, to develop a system to address substance abuse.

In spite of all they’ve been through — tyranny, war, genocide, invasion, insurgency — our hosts are warm and generous. The food is excellent — masgoof, a seasoned flame-grilled carp that is Iraq’s signature dish, is particularly delicious — and the portions are gigantic.

The company, however, is all men. A woman from the U.S. Department of State was invited to dinner, but she had to decline. People who work in Iraq for the State Department cannot leave the embassy grounds without major armed support, so they spend 95 percent of their time within the secure compound. Earlier, this attaché — a former social worker from Northern California —
Letter from Erbil

By Richard A. Rawson, PhD

The people of Erbil, Iraq, are a fascinating bunch, resilient and strong. My UCLA colleague, social worker Albert L. Hasson, and I are here to help the Iraqis develop a survey to assess substance abuse in their country and, ultimately, to develop a system to address substance abuse.

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The company, however, is all men. A woman from the U.S. Department of State was invited to dinner, but she had to decline. People who work in Iraq for the State Department cannot leave the embassy grounds without major armed support, so they spend 95 percent of their time within the secure compound. Earlier, this attaché — a former social worker from Northern California — was able to come to one of our training sessions, and she said it was the highlight of her last six months in Erbil. I can assure you that our training should not be the highlight of anyone’s life, but since she rarely had an opportunity to leave the embassy grounds without major armed support, so they spend 95 percent of their time within the secure compound. Earlier, this attaché — a former social worker from Northern California —

The training is going well, but this is not an easy group. We have Sunni, Shia and Kurds from all over Iraq as trainees. There are many disagreements about how the survey should be conducted, but our host and friend, Dr. Nesif Al Hemiary, a psychiatry professor at the University of Baghdad’s College of Medicine, is an absolute magician. With his use of gentle humor and cajoling, he gets people to stop arguing. When that doesn’t work, he takes command and makes whatever decision needs to be made.

I’m not sure that the national drug survey we are helping the Iraqis with is going to make this country a safer or saner place. But I do think it’s important for Iraqis to know that there are others in the world who are interested in what happens here. And like everyone else everywhere, the people we work with want to have families and jobs and futures. The smiles, handshakes and thanks we get for coming and being interested in them is worth a 16-hour plane ride, several nights in a 1-star hotel and being awakened by the morning call to prayer blared from the nearby mosque at 5 am.

You make Arabic burritos and, voilà, a morning meal. The people gather in the dark, eating their food, illuminated only by the light from the bakeries and the fires under the ful pots. They usually greet us with “Salaam alaikum” — peace to you — with a hand over their hearts and a slight bow.

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Neuromodulation uses magnetic or electrical stimulation to alter the patterns of electricity in the brain and has proven beneficial for many patients like Junie Raypach with intractable depression.