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How we are keeping our patients safe

The Surgeon Scientist
Dr. Linda Liau's fight against brain cancer

Comfort Measures
A gentle hand at the end of life

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Cover: Sandra Dionisi
15 YEARS. As he prepares to step down as dean and vice chancellor for medical sciences, Dr. Gerald S. Levey reflects on his decade-and-a-half at the helm of UCLA’s medical school and healthcare enterprise and the notable evolution that has taken place under his leadership.

I ALWAYS HOPED to someday guide the fortunes of a major academic medical center. So when I arrived at UCLA in September 1994, it was, indeed, a dream come true and the opportunity of a lifetime.

I soon came to realize, however, that the job I accepted would not be exactly the job I had expected. To be sure, there would be the opportunity as dean and vice chancellor to restructure the governance of the medical school and hospital – a top priority of mine – and to expand and build, to create new departments and enhance existing institutes, and to recruit some of the finest faculty found anywhere in the country. But the job description and discussions leading up to taking the position hadn’t really contemplated the extent of the damage that was inflicted by the Northridge earthquake, which had occurred nine months earlier. Add to that, in 1994 California was in the midst of a recession. Put those two factors together and the challenges that lay ahead from the moment my wife Barbara and I set foot in L.A. became evident.

Under these circumstances, it was essential to hit the ground running. And I did. In my second month, I met Leslie and Susan Gonda at the annual Aesculapians Ball. It was an instant connection that led to an ongoing relationship – and a major gift to build the Gonda (Goldschmied) Neuroscience and Genetics Research Center.

We also quickly launched several initiatives, including one to rejuvenate our research laboratories, which were, frankly, in terrible shape. At the same time, we entered what would become two years of discussion with the Federal Emergency Management Administration to secure funding to rebuild our damaged hospital.

Of course, rebuilding our hospital became a consuming task. The completion and opening of Ronald Reagan UCLA Medical Center in June 2008 was certainly a significant high point – the culmination of 14 years of difficult effort. It was, for me, a seminal event, and perhaps one of the most emotional. About 18 months before it was done, I was walking through the halls of the new hospital, and, despite the clutter of construction, it started to look like a hospital to me, and I knew it was going to really happen. My eyes started welling up with tears. The project had been so hard, with such obstacles, and more than once I was deeply concerned we might not complete the project. But my consistent mantra was we must not and cannot fail, and our team did not. On June 29, 2008, Ronald Reagan UCLA Medical Center opened.

As significant as the opening of the new hospital was, however, it was not the only most memorable event of my life at UCLA. The other would be the $200-million gift from David Geffen in 2002 to endow the medical school, which was renamed the David Geffen School of Medicine at UCLA in his honor. When our discussions were completed, I felt an overwhelming sense of joy. It was one of the most special feelings I’ve ever experienced in my professional life. To receive an unrestricted gift of such magnitude to support programs, faculty and students was invaluable, especially when it comes to competing with private institutions for the best faculty, and it secured the financial future of the school for generations to come. It absolutely changed the history of the medical school.

Building a new hospital and endowing the medical school were not the only things that have been accomplished over these past 15 years. We have established five new departments, developed several institutes and other special programs, revamped the curriculum, recruited amazing faculty and department chairs and trained new generations of the finest physicians in the country. More than 100 chairs have been endowed, National Institutes of Health funding has increased three-fold and five new research buildings have been built.

Did I accomplish everything I wanted to do? Most, but not all. Have we left things in a better place than when we arrived? I will leave that for others to judge. What I do know is that I am thankful every day for the blessing of being able to do what I have done. After 15 years, I still can’t believe that this happened to me.

GERALD S. LEVEY, M.D.
Vice Chancellor, UCLA Medical Sciences
Dean, David Geffen School of Medicine at UCLA
The Lincy Foundation Distinguished Service Chair
The Sounds of Learning

IN JUNE 2009, newspapers reported that archaeologists in Germany had discovered a 35,000-year-old flute made of bird bone. It represented, one paper said, "the earliest known flowering of music-making in Stone Age culture." And we have been tapping our toes, humming along, singing and dancing ever since.

The power of music affects all of us and has long appealed to our emotions. It is for this reason that UCLA researchers are using music to help children with autism spectrum disorders (ASD), for whom understanding emotions is a very difficult task. This inability robs them of the chance to communicate effectively and make friends and can often lead to social isolation and loneliness.

A grant from the NAMM Foundation, the trade association of the international music-products association, is making a difference. Istvan Molnar-Szakacs, Ph.D., a research neuroscientist at the UCLA Tennenbaum Center for the Biology of Creativity and member of the of the Help Group-UCLA Autism Research Alliance, and colleagues have applied the grant to develop a music-education program designed to help children with ASD better understand emotions and learn to recognize emotions in others.

The children are using a method of music education known as the Orff-Schulwerk approach. Developed by 20th-century German composer Carl Orff ("schulwerk" is German for schooling), it is a unique approach to music learning that is supported by movement and based on things that kids intuitively like to do, such as sing, chant rhymes, clap, dance and keep a beat or play a rhythm on anything near at hand. Orff called this music and movement activity "elemental" — basic, unsophisticated and concerned with the fundamental building blocks of music.

"Music is a birthright of all children. To be able to listen and appreciate, sing or participate in music-making is as essential to development as mathematical or linguistic learning," Dr. Molnar-Szakacs says. "The purpose of this work is to provide a means for awakening the potential in every child for being 'musical' — that is, to be able to understand and use music and movement as forms of expression and, through that, to develop a recognition and understanding of emotions."

And participating in musical activities also has the potential to act as a scaffold on which to build other learning and development, from timing and language to social skills, he says.
Rethinking Alzheimer’s Disease

The myelin model suggests entirely different approaches to treatment and prevention of Alzheimer’s disease.

**THE STANDARD** hypothesis for what causes Alzheimer’s disease is that toxic protein fragments known as amyloid beta deposit in the brain as sticky plaques, resulting in the disease. Billions of dollars is spent targeting amyloids—but what if it is the wrong target? What if the disease begins much earlier, fueled by a natural process?

Reporting in the journal *Neurobiology of Aging*, George Bartzokis, M.D., professor of psychiatry and a member of UCLA’s Brain Research Institute, argues that a better working hypothesis is the “myelin model.” “The greatest promise of the myelin model of the human brain is its application to the development of new therapeutic approaches,” Dr. Bartzokis says.

Like insulation around wires, myelin is a fatty sheath that coats our nerve axons, allowing for efficient conduction of nerve impulses. But the lifelong, extensive myelination of the human brain also makes it uniquely vulnerable to damage. The central premise of the myelin model is that it is the normal, routine maintenance and repair of myelin throughout life that ultimately initiates the mechanisms that produce degenerative diseases like Alzheimer’s. Dr. Bartzokis notes that myelination of the brain follows an inverted U-shaped trajectory, growing strong until our 50s, when it very slowly begins to unravel as we age—eventually breaking down faster than it can be repaired.

Most drugs currently being developed for Alzheimer’s are targeting amyloid beta, but little if any clinical improvement is being seen. This process is, according to Dr. Bartzokis, “similar to cleaning up a house that’s been flooded by water but never repairing the actual pipe that created the flood.”

The myelin model suggests entirely different approaches to treatment and prevention of Alzheimer’s disease that precede plaque formation. With modern brain imaging technology, clinicians could track the dynamic changes taking place in the brain and intercede well before any signs of Alzheimer’s are seen. “With earlier intervention,” Dr. Bartzokis says, “we could reduce and potentially eliminate the increasingly catastrophic burden of dementia on the individual and their family, the healthcare system and our society.”

Adopting the myelin model could enable clinicians to track changes in the brain and intercede before signs of Alzheimer’s disease are evident.

UCLA RESEARCHERS have discovered that a combination of drugs, electrical stimulation and regular exercise can enable paralyzed rats to walk, and even run, while supporting their full weight on a treadmill.

The findings, published in *Nature Neuroscience*, may hold implications for rehabilitation after human spinal cord injuries. “The spinal cord contains nerve circuits that can generate rhythmic activity without input from the brain to drive the hind leg muscles in a way that resembles walking, called ‘stepping,’” says Professor of Neurology Reggie Edgerton, Ph.D. “Previous studies have tried to tap into this circuitry to help victims of spinal cord injury. While other researchers have elicited similar leg movements in people with complete spinal injuries, they have not achieved full weight-bearing and sustained stepping as we have in our study.”

Dr. Edgerton’s team tested rats with complete spinal injuries that left no voluntary movement in their hind legs. After setting the paralyzed rats on a moving treadmill belt, the scientists administered drugs that act on the neurotransmitter serotonin and applied low levels of electrical currents to the spinal cord below the point of injury.

The combination of stimulation and sensation derived from the rats’ limbs moving on a treadmill belt triggered the spinal rhythm—generating circuitry and prompted walking motion in the rats’ paralyzed hind legs.

Daily treadmill training over several weeks eventually enabled the rats to regain full weight-bearing walking, including backwards, sideways and at running speed; however, the injury still interrupted the brain’s connection to the spinal cord—based rhythmic walking circuitry, leaving the rats unable to walk of their own accord.

In humans, however, neuroprosthetic devices may bridge spinal cord injuries to some extent, so activating the spinal cord rhythmic circuitry as the UCLA team did may help in rehabilitation after spinal cord injuries.

To watch a video demonstrating the research, go to: http://streaming.uclahealth.org/treadmill
Return of the Jazz Singer

TRACEY WHITNEY appeared to have it all: good health, loving family and friends and beauty – with a voice to match – that allowed her to light up stages across the world as a jazz soloist and backup singer for the likes of Ray Charles. Then she began to experience changes in her eyes that were painful and scary. One day, her young nephew looked at her and said: “Auntie Tracey’s eyes are so big, they’re touching her glasses,” she recalls.

Physicians diagnosed Whitney with Graves’ disease, an autoimmune disorder that is the most common form of hyperthyroidism – it also affected former first-lady Barbara Bush and the late comedian Marty Feldman – and a severe form of Graves’ ophthalmopathy, in which the eyeballs bulge out past their protective orbit as tissues and muscles behind the eyes swell and push them forward. Whitney’s vision, pain and disfigurement worsened so much that she stopped performing.

“In severe cases like Tracey’s, ophthalmopathy can be debilitating and life-changing,” says Robert Goldberg, M.D., chief of orbital and ophthalmic plastic surgery and co-director of the aesthetic reconstructive surgery service at the UCLA Jules Stein Eye Institute (JSEI). “The disease tends to improve over time with appropriate medical treatment, but patients with severe ophthalmopathy may need surgery to get them back to the function and appearance they had before the disease started,” he adds.

Clinicians and researchers at JSEI are credited with developing and refining many of the treatments for Graves’ ophthalmopathy, including endoscopic orbital decompression surgery, a highly complex procedure to enable the eyeballs to be pushed back into place, as well as eye-muscle and eyelid surgeries to improve eye function and reduce disfigurement. Additionally, Dr. Goldberg says patients come to JSEI to receive hyaluronic acid-gel-filler injections, which address both functional and cosmetic changes from the disease. Researchers are now investigating new biologic agents that may eliminate the need for surgery.

Whitney had five surgeries and several injections over the course of six years. Now she is back to doing the things she enjoys most. She recorded a CD, sang at a local festival over the summer and plans to open her own jazz club. “The important thing about sharing my story,” she says, “is so that other people are made aware that they can get their eyes, their face and their lives back.”

New Dean Named

UCLA ANNOUNCED the appointment of A. Eugene Washington, M.D., M.Sc., as dean of the David Geffen School of Medicine at UCLA and vice chancellor of Health Sciences at UCLA, to succeed Gerald S. Levey, M.D., who is retiring after 15 years. Once approved by The UC Board of Regents, the appointment of Dr. Washington will be effective February 1, 2010.

Dr. Washington currently serves as executive vice chancellor and provost and professor of gynecology, epidemiology and health policy at UCSF, where he has been a member of the faculty since 1983. He was chair of the Department of Obstetrics, Gynecology and Reproductive Sciences from 1996 to 2004 and director of the UCSF Women’s Reproductive Health Research Career Development Center from 1998 to 2004.

Dr. Washington co-founded UCSF’s Medical Effectiveness Research Center for Diverse Populations in 1993 and served as director through July 2005. He also co-founded the UCSF-Stanford Evidence-based Practice Center and served as its first director from 1997 to 2002. Prior to joining the faculty at UCSF, Dr. Washington worked for the Centers for Disease Control and Prevention (CDC) in the U.S. Public Health Service.

A respected clinical investigator and health-policy analyst, Dr. Washington has published extensively in his major areas of research, which include prenatal genetic testing, cervical cancer screening and prevention, non-cancerous uterine-conditions management, quality of healthcare and racial/ethnic disparities in health outcomes.
How to Build a Bigger Brain

PUSH-UPS, crunches, gyms, personal trainers – people have many strategies for building bigger muscles. But what can one do to build a bigger brain?

Meditate.

In a study published in the journal NeuroImage, UCLA researchers who used high-resolution magnetic resonance imaging (MRI) to scan the brains of people who meditate report that certain regions in the brains of long-term meditators were larger than in a similar control group. Specifically, meditators showed significantly larger volumes of the hippocampus and areas within the orbito-frontal cortex, the thalamus and the inferior temporal gyrus – all regions known for regulating emotions.

“We know that people who consistently meditate have a singular ability to cultivate positive emotions, retain emotional stability and engage in mindful behavior,” says Eileen Luders, Ph.D., lead author and a postdoctoral research fellow at the UCLA Laboratory of Neuro Imaging. “The observed differences in brain anatomy might give us a clue why meditators have these exceptional abilities.”

Dr. Luders and her colleagues examined 44 people – 22 control subjects and 22 who had practiced various forms of meditation. The amount of time they had practiced ranged from five to 46 years, with an average of 24 years. More than half of all the meditators said that deep concentration was an essential part of their practice, and most meditated between 10 and 90 minutes every day.

Using high-resolution MRI technology, the researchers measured differences in brain structure. They found significantly larger cerebral measurements in meditators compared with controls, including larger volumes of the right hippocampus and increased gray matter in the right orbito-frontal cortex, the right thalamus and the left inferior temporal lobe. Because these areas of the brain are closely linked to emotion, Dr. Luders says, “they might be the neuronal underpinnings that give meditators the outstanding ability to regulate their emotions and allow for well-adjusted responses to whatever life throws their way.”

What’s not known, she says, and will require further study, are what the specific correlates are on a microscopic level – that is, whether it’s an increased number of neurons, the larger size of the neurons or a particular “wiring” pattern meditators may develop that other people don’t.

Protecting Med Students from Influences of Pharma

THE DAVID GEFFEN SCHOOL OF MEDICINE

at UCLA is one of only nine medical schools out of 149 to earn an “A” grade in a nationwide survey by the American Medical Students Association of educational policies governing students’ contact with the pharmaceutical industry.

“We are proud to be in the top 6 percent of medical schools addressing this important issue,” says Andrew Leuchter, M.D., associate dean. “It is crucial that our nation’s physicians be trained to make decisions in the best interests of patients, free of influence from private industry.”

UCLA was one of the first U.S. medical schools to adopt tough industry-relations guidelines. In November 2006, UCLA prohibited all industry gifts to faculty, staff and students; banned industry advertising materials and sales calls in patient-care areas; and limited the use of drug samples to circumstances in the best interests of patients, such as cases of financial need.

In July 2007, UCLA’s guidelines were incorporated into the policy for the entire University of California system. In addition, UCLA now requires annual reporting by faculty members of all financial relationships with healthcare vendors.

Developed with the Pew Prescription Project, the 2009 scorecard evaluated each medical school’s policies in 11 areas, including restrictions on gifts, free meals and drug samples; paid promotional presentations; interaction with sales representatives; and industry-funded education. The results provide a school-by-school analysis of policies that govern the pharmaceutical industry’s interaction with faculty and students.

Pharmaceutical marketing to physicians has been estimated at up to $46 billion annually – roughly $35,000 per physician each year. These figures do not factor in promotion by the medical-device industry. More than 100,000 pharmaceutical sales representatives visit U.S. doctors, often providing free lunches, gifts, drug samples and promotional medical literature.
Chain of Life

HARRY DAMON is a Michigan firefighter who wanted to honor the memory of his son, who died at age 24 in a snowmobile accident. Nicole Lanstrum is a U.S. Air Force technical sergeant from Iowa who specializes in intelligence analysis.

Both came to Ronald Reagan UCLA Medical Center in June to donate a kidney to a complete stranger, starting a chain of donations that resulted in at least six kidney patients being freed from lives on dialysis.

Here is how it works. An altruistic donor, like Damon or Lanstrum, offers a kidney that is then transplanted into a recipient who already has a willing donor but whose organ is not a match. The incompatible donor then gives a kidney to another patient who has been identified as a match. Theoretically, the chain can continue indefinitely, with each donated organ generating another donation to someone else.

Such a chain “is really a revolution,” says Albin Gritsch, M.D., surgical director of the UCLA Kidney Transplant Program. “It’s such a simple idea ... so elegant and so creative, yet extremely powerful in its effect. It is a huge move ... for patients with kidney failure.”

For Damon, donating his kidney to a complete stranger was a healing experience in itself. “For me, I’m doing this to have new beginnings in my own life,” Damon says. “If I can help create new beginnings for someone else, it’s all the better.” Damon was matched with Sheila Whitney of Compton, Calif., who had been on dialysis for more than six years and whose son, Reginal Griffin, was an incompatible donor. Griffin, in turn, donated his kidney to Keenan Cheung, a father of three from La Canada, Calif. Cheung’s wife, Jeanne, then donated to Sonia Valencia, of Commerce, Calif., and her friend, Celia Contreras, of Pico Rivera, Calif., donated to a patient at a hospital in Northern California. That patient’s brother then donated one of his kidneys, to kick off a new chain.

A similar chain was initiated by Lanstrum. “I just feel we’re all put on this earth to make it better, and no one has the same game plan,” she says. “I think this is something that God supports me in.”

Transplantation Milestones

THE UCLA heart and intestinal transplantation programs marked important milestones in 2009. The heart transplant program celebrated 25 years of extending lives, while the intestinal transplant program performed its 100th procedure.

UCLA is a leading heart transplantation center in the nation, with more than 1,800 heart transplants performed and survival rates that exceed those reported by the International Heart Transplant Registry. The heart transplant program has worked in partnership with the Ahmanson-UCLA Cardiomyopathy/Heart Failure Program.

“UCLA has saved thousands of lives, improved the control of patients’ immunological responses to transplantation, expanded the criteria for who is eligible to receive transplants and improved our ability to preserve donor hearts prior to transplantation,” says Richard J. Shemin, M.D., chief of cardiothoracic surgery at UCLA.

The innovative heart failure disease-management program pioneered at UCLA has helped patients with advanced heart failure improve their health.
More Obesity Blues

THE WORLD HEALTH ORGANIZATION calculates that more than 300-million people worldwide are obese, with a billion more overweight. With obesity comes an increased risk of cardiovascular disease, type 2 diabetes and hypertension.

Now there is more discouraging news.

In a study published in Human Brain Mapping, UCLA Professor of Neurology Paul Thompson, Ph.D., Cyrus A. Raji, a medical student at the University of Pittsburgh School of Medicine, and their colleagues compared the brains of elderly people who were obese, overweight and of normal weight to see if they had differences in brain structure – that is, if their brains looked equally healthy.

They found that obese individuals had, on average, 8 percent less brain tissue than people of normal weight, while overweight people had 4 percent less tissue. According to Dr. Thompson, it is the first time anyone has established a link between being overweight and having what he describes as “severe brain degeneration.”

“That’s a big loss of tissue, and it depletes your cognitive reserves, putting you at much greater risk of Alzheimer’s and other diseases that attack the brain,” he says. “But you can greatly reduce your risk for Alzheimer’s if you can eat healthily and keep your weight under control.”

Researchers examined brain images from an earlier study called the Cardiovascular Health Cognition Study, and, using a neuroimaging method that offers high-resolution mapping of anatomical differences in the brain, converted them into detailed three-dimensional images. In looking at both the gray matter and white matter, researchers found that the people defined as obese or overweight had lost tissue in several different areas of the brain. “The brains of obese people looked 16 years older than the brains of those who were lean, and in overweight people, they looked eight years older,” Dr. Thompson says.

“It seems that along with increased risk for health problems such as type 2 diabetes and heart disease, obesity is bad for your brain. We have linked it to shrinkage of brain areas that are also targeted by Alzheimer’s,” says the University of Pittsburgh’s Raji. “But that could mean exercising, eating right and keeping weight under control can maintain brain health with aging and potentially lower the risk for Alzheimer’s disease and other dementias.”

status, quality of life and survival, allowing heart transplantation to be reserved for select patients who will derive the greatest benefit and leading to UCLA’s position as one of the largest heart transplantation centers in the nation.

The intestinal transplantation program is a more recent addition. In June, the program performed its 100th intestinal transplant. Under the direction of Douglas Farmer, M.D., the program was established in 1991 and is one of only five such programs in the country to reach this important transplantation target. In addition, UCLA’s intestinal transplant survival rates are equal to or better than any center in the world, Dr. Farmer says.

“Given the complexity of the procedure, intestinal transplantation is not widely performed,” Dr. Farmer explains. “We built intestinal transplantation within our liver transplantation program (which also marked its 25th anniversary this year) because we found that many patients with intestinal failure also had liver failure. When we performed combined liver-intestinal transplants, we got better results,” he says.

“It has not been an easy road,” Dr. Farmer adds. “It has required tremendous work and resources and personnel involved in all aspects of transplantation to nurture the patients and the program through the years.”
When was autism first recognized?

**Dr. Geschwind:** Autism wasn’t recognized as a distinct condition until it was described by [Austrian psychiatrist and physician] Leo Kanner in the 1940s. In his seminal publication, Kanner described 11 children, mostly boys, who had an autistic disorder. If one goes back and looks at that, it’s extremely accurate, vivid and in-depth, and really does relate to a lot of what we see in autism today. The key aspect is a dysfunction in normal social interaction and engagement, but it also includes problems in language and difficulties in an area that can be thought of as mental flexibility, so that the children might have repetitive behaviors, or restrictive behaviors, or a resistance to changes in their normal routine that can cause them to become quite disruptive. That’s really the fundamental core three features of autism.

What about the inability to express emotion or reciprocate affection?

**Dr. Geschwind:** Emotion and affection and their reciprocation are not considered core features of autism, although they may often be abnormal. Many autistic children are very affectionate. It’s an issue of how they relate socially, and so there is quite a range. Now, that doesn’t mean that it’s absolutely 100 percent
normal, but it’s not the absence of those things that defines autism; it’s just that they may be slightly or moderately abnormal. Many autistic children have difficulty properly perceiving emotions in others. We don’t know whether the core problem with social behavior and social cognition and what we call social reciprocity or engagement are due to a difficulty with emotional regulation or the ability to perceive emotions in the faces of others or in the gestures, or if that’s just a part of it.

Is there some thought that an appropriate reaction is going on in the brain, but the actual expression of it to the outside world is encumbered?

Dr. Geschwind: Social interaction—the sharing and giving of ideas and mental states—requires an integration of an enormous amount of the brain and its systems. You can have pieces of things, but it can look very abnormal on the outside because of the really delicate orchestration that has to go on within the brain. The one thing about autism is that it’s very heterogeneous in what its causes are, its etiology, as well as what it clinically looks like, so that there are people with autism who have severe dyspraxia (difficulty with planning and executing complex movements) or difficulty actually speaking (dysphasia), and its variability is remarkable. Now, people have gotten some of those folks to type, and it’s clear that some non-verbal children have rich language and are very intelligent. There definitely is a subset of these children and adults who will have quite complex and meaningful inner worlds that aren’t being expressed to the outer world. We don’t know the extent to which that might be universal across autism, but I suspect that it’s more frequent than we thought before.

In the early 1970s, the influential psychologist Bruno Bettelheim promoted what he called the “refrigerator mother” theory, which held that cold, un-nurturing parents, especially mothers, were to blame for autism. How long did this view of the condition prevail, and how pervasive and influential was it?

Dr. Geschwind: The “refrigerator mother” theory was quite unfortunate in the sense that it really moved autism out of being a biological or biomedical disorder
into the realm of poor parenting, which totally influenced the direction of research. If you think that something is not biological, that it’s just due to poor parenting, then you don’t look into its causes and etiology. Now we know that autism has an enormous genetic liability, that there are environmental things as well that can lead to autism. So, we know that poor parenting is not the cause of autism.

But, one also has to put Bruno Bettelheim’s work in perspective in that although his theory was, I think, very destructive for the field and very tough for families as well, it was based on research that actually had gone on in the 1940s and 1950s with monkeys. The psychologist Harry Harlow and his colleagues showed that if you don’t give monkeys the right mothering, they end up being socially awkward and looking somewhat autistic and showing autistic-like behaviors. I think that extreme examples of extraordinary deprivation of normal parent/child bonding will cause all kinds of mental illness or contribute to them, but those extremes are seldom seen in any society.

One example of children under such deprivation is orphans in Romania who have an increased prevalence of autistic behaviors due to the fact that they basically had no proper parenting and were abused or mistreated. I don’t know the literature there perfectly, but that’s a really big outlier in terms of parenting, and that would not explain the vast majority of autism. But autism and brain development and brain disorders are also due to an interaction of genetic factors and things that happen in the environment. So, extreme forms of deprivation in the right genetic context could certainly lead to severe abnormalities of behavior that might be considered along the autistic spectrum. One thing to say, though, about the issue of the parent/child interaction, it’s clearly important in child development, but the point of the “refrigerator mother” was that it was causal, and it’s very clear that in the vast, vast majority of cases, the parents have nothing to do with the causality.

**Autism is genetic, yet you don’t have autistic parents of autistic children. How do you explain that?**

*Dr. Geschwind:* Genetics works in many ways. If we think about autism like we would think about height or weight, often we see tall parents who tend to have tall kids, but not always. In fact, if tall parents have five or six children, the children may vary in height quite a bit. You may have thin parents and slightly heavy children, or vice versa. This is complex genetics. It’s not that there is one gene where there’s a relationship that causes obesity or tallness in most cases. These common conditions, or a condition like autism, have to be thought of as quantitative traits, parts of a spectrum where we all have a lot of variation.

So in autism, we see that in the parents of autistic kids, there is — especially in families that have more than one child — a clustering of very sub-threshold symptoms. They wouldn’t be called autism, but if you compared a group of parents with these traits to a group of parents who have non-autistic children, they might be characterized as more aloof or more rigid. They may have had a higher incidence of language delays as children. Those kinds of things are seen. So, the idea is it’s a kind of mixing of multiple genetic risk factors with the environment that ends up with the child with
autism, but that’s not the case in every family. There clearly are different kinds of autisms. A common form of autism would be this kind of familial autism where you see very subtle signs or hints in the parents of specific aspects that relate to the condition, like the rigidity I mentioned, but you would never call the parents autistic. In fact, they’re not.

Let’s go back to the issue of psychology versus biology. Are there still people today who dispute the biological interpretation?

Dr. Geschwind: Now that we know that the mind emanates from the brain, it’s hard to separate psychology from the biomedical because a lot of what we think and feel comes from this organ called the brain. And so, there are different ways to approach different levels and kinds of disorders. Some need medication. Some need medication plus therapy, and others are much better off without any medication and with in-depth therapy. Imagine if you have a bad experience, or a series of bad experiences, even bad parenting, that kind of experience is going to need therapy. Again, it really depends upon where the disorder really comes from, where its roots and etiology are. I think that very few people would now say that autism is not a biomedical disorder. I think the major debate at this point is how much of it is genetics and how much of it is environment.

If a percentage of the genetic mutations that are believed to be responsible for autism have been identified, are you hopeful that one day we will be able to interfere with these genetic abnormalities and effect a cure?

Dr. Geschwind: I think it’s too early to know exactly where the genetics is going to lead us. One hope would be that we can identify biochemical pathways that are disturbed at least in a fraction of children who are amenable to treatment. We already know in mice models that if we introduce certain mutations, some of which are related to autism, that cause a severe neurodevelopmental disorder and let their brains develop, and if we then turn the gene on or off or give the adult mouse a drug that would treat the pathway, that we can have a major effect on the adult with the disease.

So, in some cases, it may not even be necessary to intervene at the developmental stage to change the brain development. We may be able to affect brain function in children or in adolescents or even adults, and that gives me a lot more hope because the difficulty of intervening in-utero with gene therapy or something like that is really off the table right now in terms of a viable therapy. So, the idea of being able to intervene later would be helpful.

“I think that very few people would now say that autism is not a biomedical disorder. I think the major debate at this point is how much of it is genetics and how much of it is environment.”

On the other hand, we know that if we look at 100 children with autism, we can take one-third of the children who don’t speak, let’s say, at age 2½ or 3, and with the proper and most state-of-the-art cognitive and behavior intervention, we can get those children speaking. But that kind of therapy takes money, it takes very specialized expertise – there aren’t enough people trained to deliver it – and it’s going to take research to know how to best implement that on a large scale. But there’s enormous hope that if we took what we know now and actually could apply that in our educational and early-development systems, that we’d have an enormous impact on children.

That’s why it’s critical, even though we don’t have genetic interventions, to diagnose children with autism as early as possible, while the brain is still plastic and while these behavioral and cognitive interventions actually can do the most good. The earlier we intervene, the better chance we give a child with autism or another neurodevelopmental disability to eventually be mainstreamed or to have a successful and satisfying life.

To listen to the complete, unedited L.A. Theatre Works interview with Dr. Geschwind, go to: www.uclahealth.org/danielgeschwind
primum non nocere
In today’s highly complex medical setting, opportunities for mistakes abound. But by retooling infrastructure and putting quality-control tools in place, it is possible for large systems like UCLA to create the safest possible environment for patients.

PRIMUM NON NOCERE

In today’s highly complex medical setting, opportunities for mistakes abound. But by retooling infrastructure and putting quality-control tools in place, it is possible for large systems like UCLA to create the safest possible environment for patients.

By Kathy A. Svitil  Illustration by Sandra Dionisi

Upon its completion in 1937, the Golden Gate Bridge represented a milestone in construction—and not just because it was, at the time and for decades afterward, the world’s longest suspension bridge. When building got underway in the early 1930s, there existed a grisly rule of thumb: One worker would be killed for every million dollars spent on a high-steel construction project.

The problem was not a callous disregard for human life but reflected the newness of the technology required for such ambitious projects. “The engineers had to first figure out how to build these structures before they could figure out how to build them safely,” says Tom Rosenthal, M.D., chief medical officer for UCLA Health System.

Hospitals today face a similar problem, argues Dr. Rosenthal and others. New methodologies, from organ transplants and microneurosurgery to intensive care medicine, have been developed to save lives that previously would have been lost. But in lockstep with these miraculous techniques has come an equally staggering rise in the complexity of the practice of medicine itself—one that makes mistakes almost impossible to avoid.

“Obviously,” says Dr. Rosenthal, “everyone who goes into a healthcare field does so to help people. No one wants to cause harm”—primum non nocere. But in a system with so many moving parts that touch on so many lives, even a staff of highly trained
In a system with so many moving parts that touch on so many lives, even a staff of highly trained and dedicated professionals sometimes might falter. There need to be tools and infrastructure to control and manage the intricacies of modern medicine.

And dedicated professionals sometimes might falter. To guard against that happening and create the safest-possible environment for patients, there need to be the tools and infrastructure to control and manage the intricacies of modern medicine.

To beat the grim odds at the Golden Gate Bridge, chief engineer Joseph Strauss devised an elegantly simple solution: a giant safety net, slung under the nascent bridge 60 feet below the construction workers, at a cost of just $130,000. The net would ultimately save 19 lives.

Backed by an institutional commitment to ensure the highest levels of patient care, and aided by both innovative science and the most basic health measures, UCLA Health System is at the forefront of a national effort to create a similar kind of safety net in medicine. It has embarked on an ambitious program to enhance patient safety that touches on a variety of areas, including eliminating medication errors, improving incident reporting, enhancing surgical safety and controlling infections.

“Our hospitals are very safe,” says Dr. Rosenthal. “But we can always do more.”

Each year, half-a-million injuries occur in the United States because of medication errors. To help prevent such mistakes, UCLA Health System and its four hospitals – Ronald Reagan UCLA Medical Center, Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA, Mattel Children’s Hospital UCLA and Santa Monica-UCLA Medical Center and Orthopaedic Hospital – recently rolled out its long-awaited bar-coded medication-administration system, Centricity Admin.

Adding bar codes to the drugs given to patients could substantially reduce the number of medication errors, experts say, by applying an extra layer of oversight to every step in the delivery process.

In a 2008 commentary about bar-coding systems in the Journal of the American Medical Association, University of Toronto physicians David W. Cescon, M.D., and Edward Etchells, M.D., compared the bar coding of medicines to the coding systems used by delivery companies. “Just as couriers are empowered with bar codes to track their packages for safe delivery,” Drs. Cescon and Etchells wrote, “so, too, can nurses be empowered with bar codes to ensure the safe administration of medication to patients.”

Unlike the bar codes on cereal boxes and milk cartons at the supermarket, medication bar codes aren’t just for inventory control but play an essential role early on in the medication-delivery process. At UCLA, after a physician sends a patient’s prescription to the hospital pharmacy, the patient’s nurse receives an electronic order for the drug, verifies it against the doctor’s orders and gathers the appropriate meds. Before administering the drug, the nurse must scan the patient’s arm band – which contains a bar code unique to that patient – then scans the bar code for each individual pill, tablet, injection or other drug to be administered. If the medication order requires that two pills be administered, the nurse must scan both before the system will advance and the medication can be administered, says Virginia Moore, a computer support pharmacist with the Department of Pharmaceutical Services, who helped to develop UCLA’s system.

Similarly, if a nurse scans a drug that’s not ordered, she cannot go forward, nor can she advance in the system if she scans a patient and the drug orders are for a different patient.

“We want to be sure we are giving the right drug, at the right dosage, through the right route, at the right time, to the right patient,” Moore says.

It sounds like it should be easy enough, but implementing the system at UCLA was no simple task, says Moore, largely because of inconsistencies among the bar codes that pharmaceutical manufacturers use on their products. Although all drugs sold to hospitals must now be labeled with bar codes per the Food and Drug Administration (FDA), “the numbers are not standardized,” Moore says.

For example, she says, some bar codes have 10 digits, and some have 11, and some have longer numbers that include information like lot numbers and expiration dates. A company might use only the National Drug Code (or NDC – the 11-digit, three-segment code with unique identifiers representing the vendor, the product and the package size), or a prefix number followed by the NDC, or the NDC followed by a suffix number. To further complicate matters, the bar codes themselves can be written in a linear format or in a two-dimensional array. And some products don’t have any bar code or only one on the outer packaging of a box that contains multiple individual doses.

Because of bar-coding variation, Moore and her colleagues had to test numerous scanning systems. “We needed to find a scanner that could read all of the various codes, in different formats, and that was quick and easy to use – you can’t have the nurse scanning the same code over and over, or it gets frustrating,” she says.

Ultimately, they found a scanner that met all of their criteria: simple, durable, reliable and able to read a variety of codes. Moore and her colleagues devised a way to program the scanner to truncate bar codes after 15 characters, to remove information like lot numbers and expiration dates. Now, 90-to-95 percent of the medications used in UCLA hospitals are bar coded and able to be read by the system.
As in any complicated system, there are bound to be problems, even at hospitals like UCLA’s with an almost religious devotion to safety. Visitors occasionally take tumbles in hallways; equipment sometimes malfunctions; and patients may have bad reactions to their medication.

To track such mishaps, hospitals in California are now required to report any adverse events to the state’s Department of Health Services. As part of this effort, and to improve its own monitoring of the quality of care at its hospitals and clinics, UCLA has implemented a cutting-edge computerized event-reporting system. Before its development, individuals reporting adverse events had to fill out a lot of time-consuming paperwork, then deliver it to a central office, a process that was not exactly conducive to producing timely updates about issues at the hospitals.

The new computerized reporting system, in contrast, can be accessed from any computer terminal within the hospitals and affiliated clinics and by virtually anyone who has involvement in patient care, from physicians and nurses to respiratory therapists and housekeeping personnel.

“One goal of the program is to see more events coming in – not because we’re producing more errors but because the system makes the process easier,” says Tod Barry, quality director for Ronald Reagan UCLA Medical Center. “If people are comfortable in reporting, they’re more likely to report, and we are seeing increased compliance from year to year.” Currently, 500 to 600 events are reported each month, which means, Barry says, that the system is doing its job.

After logging in, reporters are guided through a series of screens that ask for information such as the reporter’s name; the names of the individuals involved; the date, time and location of the incident; and if harm occurred. Using drop-down menus, users can select one of 14 possible categories of adverse events, such as “medical treatment problem or complication,” “diagnostic/testing problem,” “falls” and “medication error,” and then, based on their characterization of the event, are provided with subcategories that further define what happened. Finally, space is provided for the reporter to write a narrative describing the incident.

Once the report is submitted, the system automatically generates e-mail reports that are delivered to the reporter’s supervisor and the hospital-wide supervisor of the particular unit where the event occurred. Notification is also sent to Barry’s quality-control office, which reviews every adverse-event report submitted from within the hospital system, typically within 24 hours, and makes sure that any necessary follow-up takes place.

That follow-up, says Barry, may be as basic as a comment added to the system by a supervisor or may require a “root-cause analysis” meeting to determine the cause of “sentinel” events – unexpected occurrences involving death or serious physical or psychological injury – and how they can be prevented in the future.

And, indeed, prevention is the goal of the event-reporting system, which exemplifies UCLA’s effort to improve the “culture of safety” in medical care. This initiative, says Barry, represents a shift from the traditional tendency to affix blame when an error is made.

*Everybody who goes into a healthcare field does so to help people. No one wants to cause harm,* says Tom Rosenthal, M.D., chief medical officer for UCLA Health System.
“Rather than a ‘blaming’ culture, we want a ‘just’ culture,” says Dr. Rosenthal, “where people aren’t afraid to report their mistakes because they fear punishment” but rather report mistakes in an effort to avoid them in the future.

EVERY PILOT learns in his or her first days of flight school that an airplane is too much machine to be operated by memory. For that reason, beginning in the mid-1930s, pilots have relied upon checklists that describe every step that must be taken before take-off, during flight, before landing, in emergencies, and so on. To a pilot, using a checklist is not an admission of fallibility but the clear-headed recognition that infallibility is impossible.

The practice of medicine – and surgery and intensive care, in particular – has reached this point. In response, standout hospitals have appropriated the wisdom of aviation experts and begun using safety tools such as surgical checklists to help reduce and prevent medical error.

A January 2009 study in the New England Journal of Medicine affirmed the benefit of these checklists. In the study, eight hospitals in eight cities from around the world adopted a 19-point surgical checklist based on the recommendations of the World Health Organization’s (WHO) Safe Surgery Saves Lives program. The result? Post-surgical complications and death were reduced by nearly 40 percent.

The checklist described in the study was divided into three stages, representing three critical points – and useful stopping points – in surgical care: the “sign-in” period, before anesthesia is delivered; the “time-out,” before an incision is made; and the “sign-out” period, after the procedure is completed but before the patient leaves the operating room.

At each stage, members of the surgical team discuss information that is vital to the patient and the procedure being done. During sign-in, the team will, for example, confirm the patient’s name, surgical site and procedure; verify that pulse oximeters are functioning; note whether or not the patient’s airway and risk of aspiration have been evaluated; and confirm the availability of any necessary emergency equipment. During the time-out, the team introduces itself by name and role; again confirms the patient’s identity, surgical site and procedure; discusses the key events of the procedure and patient-related issues (such as allergies); and confirms the use of prophylactic antibiotics and the availability of instruments and imaging results. Finally, during the sign-out, the staff reviews the procedure performed; conducts needle, sponge and instrument counts; verifies that specimens are correctly labeled; and discusses the patient’s aftercare and recovery.

UCLA has developed its own modified version of the WHO model, which expands the surgical time-out that the hospital has used for nearly a decade. “Our old time-out procedure was basically to confirm that you had the right patient for the right procedure,” says Christine Pizzulli, manager of OR services. The new procedure addresses many other issues related to the patient (say, allergies), surgical logistics (if operating room personnel will be switching out, for example, because the procedure is particularly long), equipment and implant availability, and more.

“It’s an interactive discussion between all members of the team – surgeons, anesthesiologists, nurses, perfusionist and support staff. Everybody stops what they’re doing to give 100 percent of their attention to be part of the discussion, to make sure everyone knows if there are questions or concerns, or that the equipment, implants and blood that will be needed during the procedure are readily available,” she says.

“Traditionally, we’d have a surgeon who was familiar with the patient, an anesthesiologist/anesthetist who meets the patient on the planned date of care and who has reviewed the patient information in an electronic format. The OR clinical staff reviews the scheduling information, which focuses on the supplies, implant, instrument and equipment requirements for the procedure. They were all looking at the needs of the patient, but each member of the team had his or her own silo of information. The new process requires a few more minutes,” Pizzulli adds, “but it gives an opportunity to bring out all of the important issues and concerns to the attention of each member of the team.”

LOOKING BEYOND the high-tech computerized systems, bar-coded medications and other tools for promoting hospital safety, a simple fact emerges: Beating bad bugs saves lives. To that end, UCLA has developed sophisticated new protocols for tracking and controlling hospital-related infections.

Beginning in 2009, the State of California required that all hospitals report rates of particular healthcare-associated infections, such as the incidence of methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant bugs. UCLA, which has long tracked these rates, has begun to explore the use of decision-support software programs
that “link lab data with existing electronic data sources to automatically detect and predict infection sources,” says David Pegues, M.D., director of the UCLA Hospital Epidemiology Program. “These programs help to identify infections and other potential problems faster. That means less time for the infection preventionists sifting through data and more time on the floor to educate and put a face to our infection-prevention efforts.”

And that time “on the floor” can be used to focus on the first line of defense against all infections: proper hygiene. “It’s important to recognize that we need to go back to the basics, and the basics start with hand hygiene,” says clinical epidemiologist Teresa Zaroda, one of three infection-control professionals on Dr. Pegues’ staff.

The leadership of UCLA Health System, for example, has made an institutional commitment to hand hygiene. Patients and their family members are told that they have the right to ask anyone, at any time, to wash his or her hands. Meanwhile, staff members are encouraged to speak up if their colleagues have forgotten to wash. To further promote the practice, hand-hygiene-product dispensers are located inside and outside of every patient room, near elevators and other access points. “They’re visible everywhere,” Zaroda says.

Infection control isn’t just about bug tracking and hand hygiene, however. The Centers for Disease Control and Prevention estimates that 14,000 to 28,000 deaths occur each year due to infections in central venous catheters (CVCs) – lines placed into the large veins of the neck, chest or groin to administer medications and draw blood samples, for example. To prevent these entirely preventable infections, UCLA has developed a checklist of steps – placed prominently on the trays containing CVC instruments – detailing everything from hand-hygiene etiquette to proper mask, hair-cap, gown and sterile-drape usage. The health system has also developed codified procedures for airborne precautions (to use with patients on respirators, for example), droplet precautions, contact precautions and more, all of which are displayed throughout the hospitals and serve as constant reminders of the diligence, and standard of care, expected of every employee.

“Technology may help, but it’s not the complete answer,” says Zaroda. “We need to enhance our individual commitment to quality improvement and safety.”

The results of these efforts at UCLA are enviable – infection rates have dropped to the point that UCLA Health System’s numbers are among the lowest in the country.

A novel program developed at UCLA is helping to bolster these goals and ensure positive outcomes. The Measuring to Achieve Patient Safety (MAPS) program, started in 2006, enlists student volunteers to observe hospital personnel as they perform clinical procedures and report on any violations.

The volunteers, including pre-nursing, nursing, pre-med and sometimes high school students, will, for example, watch to see if patients are correctly identified before they’re given medication or have blood drawn and look to see if syringes are labeled and attended by a nurse or M.D. And, of course, MAPS students look at hand washing: Are healthcare workers washing when they should, how they should?

“The reports are very personal, describing if a person hasn’t done what they are supposed to do,” says Catherine Walsh, MAPS director and an accreditation manager in the Department of Nursing. “The report goes to the person’s unit director – or if it is an M.D., to their attending – and they get counseled, and then we go back and make sure they’re complying.”

Far from resenting the intrusion, UCLA’s healthcare professionals seem to welcome the reminders of the MAPS team, Walsh says. And the program has had an impact: “We have seen an increase in hand-washing compliance because of the program,” she says. While the hospital’s hand-washing rates were always high, now fully 90 percent of the UCLA staff correctly washes their hands, with the other 10 percent having one incident per month in which they deviate from protocol. That rate is a far cry from the 50-percent compliance seen in many hospitals.

The program – and UCLA’s overall commitment to hygiene, infection control and other safety measures – promises to have a lasting effect. “MAPS students are going to be the healthcare workers of the future,” says Walsh. “We’re helping to set a precedent for their later practices and creating a new generation with the same of commitment to safety.”

Ultimately, a safer hospital environment translates not just to healthier patients – no small measure of quality, to be sure – but also to satisfied patients and families. Says David T. Feinberg, M.D., M.B.A., chief executive officer of UCLA Hospital System: “UCLA’s hospitals are populated with brilliant and talented physicians and staff, but there is no one here who is more important than our patients. We are dedicated to delivering care to our patients that is safe and compassionate. That is both our commitment and our responsibility.”

Kathy A. Svitil is the lead science writer at the California Institute of Technology and a former writer and editor for Discover magazine.

To see detailed results of UCLA’s efforts to enhance hospital safety and patient satisfaction, go to: www.uclahealth.org/quality
The Surgeon Scientist

WHETHER IN THE OPERATING ROOM OR HER LABORATORY, DR. LINDA LIAU WORKS ON THE CUTTING-EDGE OF SCIENCE TO EXTEND THE LIVES OF PATIENTS WITH BRAIN CANCER.

LINDA LIAU, M.D., Ph.D., stands outside the neurosurgical operating room on an August morning, amiably talking with her husband about who is going to pick up the kids after school.

Her spouse, Marvin Bergsneider, M.D., is also a UCLA neurosurgeon, and he mentions that he has a meeting to attend, to which Dr. Liau, jabbing with her thumb over her shoulder toward the OR, responds, “Yes, but I have a brain surgery to do.” Brain surgery trumps meeting, and 15 minutes later, Dr. Liau, having resolved the minutia of everyday family life, is scrubbed and standing over a patient’s open skull preparing to save his life.

ON AVERAGE, Dr. Liau operates about four times a week – two-a-day on Mondays and Thursdays. One day a week, she is in clinic. For one week out of every six, she is on 24-hour call for emergencies, and she is the editor-in-chief of a prestigious academic publication, the Journal of Neuro-Oncology, which she works on at home, between the hours of 9 p.m. and 2 a.m., when her children, Bianca, 8, and Brendon, 11, are in bed.

And the rest of the time? Between meetings, rounds, responding to e-mails and collaborating with other physicians and postdoctoral fellows on various projects, Dr. Liau has made her mark as a pioneering scientist, working in her laboratory to refine a promising new vaccine that is custom-tailored to each patient to thwart the recurrence of brain cancer once it has been surgically removed. The vaccine is compounded from the patient’s own tumor and immune cells and is now undergoing its third clinical trial and showing remarkable promise. For some of the patients in Dr. Liau’s studies, it has probably added months, even years, of life following a disease that is frequently, and often quickly, fatal.

To manage all this work and her family, Dr. Liau averages about four hours of sleep a night, “which for me is plenty,” she says, although she does admit to being a little grumpy when she first wakes up in the morning.

IN A FIELD DOMINATED BY MEN, Dr. Liau’s reputation as a surgeon and scientist is international. Other top-ranked medical centers have tried to woo her, offering her chair positions in their neurosurgery departments. She is, say professional colleagues, among an elite handful of neurosurgeons who are leading the way in translational research to find solutions to a terrible disease. And in addition to being a gifted surgeon and innovative researcher, “Dr. Liau is an
It has been three years since singer-songwriter Dominic Bakewell underwent an awake craniotomy to remove a glioma. Today, he is back to enjoying being a husband to Sarah and father to Julian, and last year he released an album of children’s songs.

Asked if he has any comment to make about his experience, Bakewell responds: “I’d like to thank Dr. Liau for saving my life.”
loss of sensation – the list goes on. Bakewell's surgery was risky business.

IT WAS HER mother's death from a brain tumor that inspired Dr. Liau to pursue her current course. Her mom had long been Dr. Liau's chief cheerleader, encouraging her over and over that she could do whatever she wanted to do in life. Dr. Liau was in the third year of her residency at UCLA when her mother was diagnosed with cancer that had started in her breast and then progressed to her brain.

Two weeks before Dr. Liau's sister was to be married, their mother entered the hospital at UCLA. “My sister changed her wedding plans and was married in the hospital by my mother’s bedside,” Dr. Liau recalls. “The UCLA chaplain did the ceremony, and the nurses were the bridesmaids.” It was a nice moment, and a memorable one, but it was bittersweet – her mother died shortly after. She was only 51.

“After her death, I was angry as well as heartbroken,” Dr. Liau says. “I remember thinking, 'Why hasn’t there been more progress with this disease?’”

It was the motivation for her to begin a dual-career path as a surgeon and a researcher, and it had a positive side effect. “Doing lab work helped me deal with the emotional aspects with regard to my patients. It makes me feel better, because I feel that I am contributing to knowledge about this disease,” she says.

Her dedication in both the OR and the lab has made Dr. Liau, in the words of one admiring colleague, “the classic triple-threat.” “She is an innovative and caring physician; a superb teacher, mentor and example; and an investigator of international renown,” says Webster K. Cavenee, Ph.D., director of the Ludwig Institute for Cancer Research at the University of California, San Diego.

AS DOMINIC BAKEWELL is wheeled into the OR, following an emotional, tear-filled parting from Sarah, Dr. Liau and her colleagues are preparing to perform a procedure that only a handful of medical centers in the United States offer: an awake craniotomy. To the uninitiated, the procedure sounds ghastly, like something from a low-budget horror movie – the patient, a section of his skull sawed open and his brain exposed, is brought out from under anesthesia and awakened. It is possible to do this because the brain has no pain receptors. And it is a key surgical strategy when a tumor like Bakewell's is pressed tight against the brain's speech and motor centers.

Once the chunk of Bakewell's skull is taken out and a palm-sized area of brain revealed, it is time for Dr. Liau to go to work. Over the course of several hours, she resects, or cuts out, as much of the tumor as she safely can, based on what the multiple brain images show her. Finally, though, she is as close as she can get to the borderless margin where tumor and healthy brain matter intersect. It is time to wake Bakewell.

Neuroanesthesiologist Barbara Van De Wiele, M.D., carefully lightens Bakewell's sedation, allowing him to awaken from his sleep. “Sarah!” The first thing a foggy Bakewell does is cry out for his wife. The second thing he does is try to sit up.

But Bakewell has nowhere to go. His head is held tightly in a metal clamp; his body is strapped to the table; and nurses and doctors surround him, firmly holding him in place.

“Dominic, it's Susan. Can you hear me? You are in the operating room. You are waking up.”

The voice is that of Susan Bookheimer, Ph.D., a professor of psychiatry and member of the Brain Mapping Center. Dr. Bookheimer led the team that plotted Bakewell's brain to identify the location of the critical areas.

“Dominic, I need you to open your eyes and be very still.” Bakewell responds, groggily asking for water.

Using a grid developed from the brain map as her guide, Dr. Liau begins to probe Bakewell’s brain, trying to define the border between the tumor and the cells that control Bakewell's ability to speak. With a nod to Dr. Bookheimer, Dr. Liau uses an electrified wand to touch the surface of the brain to temporarily short-circuit the ability of Bakewell’s neurons to communicate. At the same time, Dr. Bookheimer holds up a flashcard inches from Bakewell's eyes. On it is a picture of a cat. As long as Dr. Liau stimulates those verbal cells to block their neural activity, Bakewell is unable to remember the word for cat. He knows what it is; he just cannot think of the right word.

When Dr. Liau lifts the wand, stopping the current, Bakewell responds. “Cat,” he whispers.

“Good,” replies Dr. Bookheimer.

Dr. Liau uses the wand to touch a different area of his brain. Dr. Bookheimer holds up another card, a house. Bakewell can’t think of the word until Dr. Liau lifts the wand. “House,” he says.

And so it goes. Stimulate. Picture. Answer. When Dr. Liau stimulates a part of the brain and Bakewell can still...
“ONCE WE ARE ABLE TO PROLONG LIFE ... THE NEXT STEP IS TO CURE THE DISEASE BY GIVING A VACCINE THAT CAN GET RID OF THE MICROSCOPIC CANCER CELLS AND HOPEFULLY PREVENT THE CANCER FROM COMING BACK.”

respond, she knows she can safely slice away at the tumor without doing damage. At some point in the process, Dr. Bookheimer has Bakewell hum – they are searching for the exact location of his musical ability – and then has him wiggle his fingers to mimic the playing of a guitar.

Finally, at the end of a tiring six-hour surgery, Bakewell is put back under anesthesia, and his skull and scalp are replaced.

It has been three years since Bakewell’s surgery, and he is doing well. There was a scare in the months afterward; swelling in his brain prevented him from speaking yet, oddly, not from singing. But after therapy and hard work, he is singing and playing guitar again, and enjoying life as a husband and father. Last year, he released an album of children’s songs.

He has resumed driving, although he remains on anti-seizure medication. Every three months, Bakewell undergoes a nerve-wracking MRI to check for any new tumor growth; so far, his brain is clear, but it is always a “pins-and-needles” moment, says his wife. She notices her husband’s conversational skills are not as sharp as they once were, and he is a little quicker with his temper. Bakewell says he has not discerned either one. Asked if he has anything else to say about his experience, he pauses, and then says simply, “I’d like to thank Dr. Liau for saving my life.”

DR. LIAU WAS A YOUNG whippersnapper when she started working on a brain cancer vaccine in 1998. At the time, she was a 31-year-old assistant professor, working with Michael Roth, M.D., a professor of medicine in the Division of Pulmonary and Critical Care Medicine, and James Economou, M.D., Ph.D., a professor of surgical oncology and molecular and medical pharmacology. Both were working on vaccines – Dr. Roth on cellular vaccines for lung cancer, Dr. Economou on immunotherapy for melanoma.

“It was certainly not a eureka! moment,” says Dr. Liau. “It was more just a question that came to me. If it could possibly work for lung cancer and melanoma, why not brain cancer?”

While Dr. Liau has refined her brain cancer vaccine over the years, the process by which it is made has remained basically the same, with each vaccine custom-made for each eligible patient. (In her current clinical trial, only patients diagnosed with grade-4 glioblastomas are eligible.) Dr. Liau’s lab first extracts proteins from the patient’s tumor, then extracts the patients’ own dendritic cells from their blood. These dendritic cells are a special type of cell, says Dr. Liau, that are absolutely essential for the start of any immune-system response, be it to a bacterial infection, a virus or a tumor.

The dendritic cells are then loaded with extracts of the tumor cells and injected back into the skin of the patient, where they behave as if they just encountered an infection: They travel to the lymph nodes to “tell” the immune system about the tumor cells. The ensuing activation of the immune system results in the generation of killer T-cells that travel through the body. When these cells encounter a tumor cell, they kill it.

The ultimate goal, says Dr. Liau, is to make a clean sweep of whatever cancer cells are left behind after surgery. What makes glioblastoma so lethal is the speed at which it grows and sends microscopic shoots into different areas of the brain. Even the most talented neurosurgeon cannot excise a complete tumor cell by cell by cell.

“So we are hopeful that cancer vaccines have the potential to do more than kill what’s left of an existing tumor,” says Dr. Liau. “Once we are able to prolong life through molecular targeted cocktails of treatment, I think the next step is to cure the disease by giving a vaccine that can get rid of the microscopic cancer cells and hopefully prevent the cancer from coming back.”

Is the vaccine working? Dr. Liau has patients who have lived four and five years beyond the expected life span for glioblastoma. One has survived nine years.

SCOTT BURK is among those survivors. His doctors in Cincinnati offered him “no hope,” says his wife, Andrea, giving him at most two years to live when he was diagnosed in 1999 with an oligodendroglioma. He has survived three brain surgeries, all by Dr. Liau, in 2000, 2004 and 2008. He has been on the vaccine since 2004, when his tumor advanced to a malignant glioma, making him eligible for her trials under the protocols of Dr. Liau’s National Institutes of Health grant. Now Burk and his wife fly to L.A. every three months for him to receive a booster shot.

Burk was diagnosed at the age of 33, when he had a seizure after jumping into a swimming pool and passed out. “If Andrea hadn’t been there to pull me out of the water, I would have drowned,” he says.

His diagnosis embittered him for a time. Like Dr. Liau, Burk is an M.D./Ph.D., a Harvard-trained ophthalmologist and a molecular biologist. He was at the top of his game, performing some 10 cataract surgeries a week when the tumor struck. “It was about as not fair as it could be,” he says. They grieved and they cried, says Andrea, and then they got on with it. The consummate researcher, Burk found Dr. Liau.

At first, the tumor colored everything in their lives. They waffled back and forth about whether to have kids
(they did). They consulted a lawyer to get Burk’s affairs in order. Andrea, an ophthalmologist trained in her native Brazil and now a full-time mom, still thinks about returning to medicine.

But the days now are no longer so dark. They meet each hurdle as it comes. In 2004, when the seizures came back and Burk needed another surgery, he lost the fine motor skills in his right hand. He had to give up surgery but still sees patients in his practice. In 2008, he had his third surgery, which has affected his left leg, throwing off his gait.

Burk and his wife refuse to give in to pessimism. "We try not to suffer in advance of things," says Burk, now 43. "And we don’t argue anymore," says Andrea. "About anything. Nothing is worth arguing about. We are simply grateful for every day.”

THESE ARE THE LIVES that fuel Dr. Liau’s efforts with the vaccine. But developing a vaccine is an excruciatingly slow process. The main reason? Money. With just 20,000 or so new patients diagnosed with primary brain cancer each year, there is not a big profit to be made in developing a vaccine for this disease. “Most companies want to find the next blockbuster drug,” Dr. Liau says. And since each personalized vaccine must be developed for each individual, creating the vaccine is expensive as well.

But Dr. Liau soldiers on. She is careful to tell each of her patients the “what-ifs.” The tumor may always come back, “maybe next week, maybe in five years.” Still, she is cheered by the number of patients whose lives she has extended. “It does make me feel good. I do tend to get involved in the lives of my patients. They are, as a group, nice people leading interesting lives – musicians, firemen, doctors. But I really hope we can find a cure.”

Yet, always hovering over everything is the sobering realization that the cancer still wins. Last August 29, Dr. Liau lost one that really hurt. Kevin Carlberg was a father and husband, a musician like Bakewell, and a Dr. Liau cheerleader. He raised money for her research, he spoke to media, he wore a “Don’t worry, be happy” T-shirt to every medical appointment. He never gave in. He was a four-year survivor, and in that time he married, had a child, ran a marathon and cut a CD of his music.

It was Dr. Liau, surgeon and scientist, who gave him those precious, extra years.

Mark Wheeler is a senior media relations officer for UCLA Health Sciences covering neuroscience, and a former writer and editor for Discover magazine.
STER WALL’S father was always full of energy. Handsome, athletic and well-dressed, Ricardo Cortez Melendez was also known as a practical joker. “I remember him being the life of the party when we were kids,” Wall says. “He loved to dance and listen to music. He would take us out every weekend. I don’t remember ever being bored with my dad.”

But after Melendez was diagnosed with stage-4 lung cancer in 2008, at the age of 73, his health declined rapidly. He was confined to a hospital bed and in considerable discomfort, experiencing both pain and shortness of breath. “It was so stressful to see my dad like that,” says Delia Aguiar, the youngest of Melendez’s four daughters.

As a social worker at Santa Monica-UCLA Medical Center and Orthopaedic Hospital, Aguiar had worked with members of the palliative-care team and knew they were expert in managing symptoms and at providing information and counseling families facing the imminent death of a loved one. She requested a consultation with the group, beginning a relationship that Aguiar and her sister say was immensely helpful during the final days of their father’s life.

“Our palliative-care doctor was informative, available, respectful and caring,” Wall recalls. “Palliative care made things less painful for our dad and helped us all to cope with his death.”

IT WASN’T LONG AGO that comfort and the psychosocial needs of seriously ill patients and their families were not top priorities for medicine, but that has changed. “The relief of suffering and the cure of disease are both obligations of the medical profession,” says Bruce Ferrell, M.D., director of palliative-care services at UCLA. “People sometimes see a rigid healthcare system that can become disconnected from the mission of providing people with humane, respectful care. Our goal is to assist them so that patients don’t suffer needlessly.”

Palliative care – which aims to relieve suffering and assist seriously ill patients and their families to address issues of treatment and support that arise in life-threatening illnesses – is among the fastest-growing medical subspecialties, fueled by a number of forces, not the least of which is consumer demand. The Journal of Palliative Medicine estimates that palliative-care programs have doubled since 2000, with more than half of hospitals with at least 50 beds now having such a program. That includes UCLA, which since 2007 has had a palliative-care service providing consultations 24 hours a day, seven days a week, at both its Westwood and Santa Monica campuses.

“While years ago it was thought to be a small piece of what was important in providing care, today palliative care is front and center as an integral part of care for virtually any seriously ill patient,” says Neil Wenger, M.D., director of the UCLA Health System Ethics Center.

Palliative care is typically provided by a multidisciplinary team, including physicians, nurses, social workers and clergy. The primary focus tends to be relieving pain through medications and other strategies, but all potentially distressing symptoms are targeted – from fatigue, anxiety and shortness of breath to nausea, depression, insomnia and others. Of equal importance are discussions among palliative-care teams with patients and their families, in consultation with the medical-care team, about goals of care and treatment plans.

“The goals that we concentrate on are the patient’s goals,” says Jeannette Meyer, a clinical nurse specialist for palliative care at Santa Monica-UCLA Medical
Center and Orthopaedic Hospital. “We try to create a treatment plan that will speak to the things that are most important to that person.

Perhaps the most common misconception about palliative care is that it is synonymous with hospice care; in fact, though it plays a prominent role in the final days or hours of a dying patient’s life, it is also offered in conjunction with life-prolonging and potentially curative treatments for patients with cancer, heart failure and other chronic and life-threatening conditions.

“It used to be that all of our efforts at patient care were directed at curative interventions up until the point that patients were on their deathbed, and then everything turned to comforting them in the last few days of life,” says Dr. Ferrell. “Today, there is greater appreciation for the importance of symptom control and discussions with patients and their families about the natural history of their disease early in the course of the illness.”

At UCLA, considerable effort has been made to educate hospital staff about this shift. “We believe

we have much more to offer in terms of symptom control earlier on in the disease process,” says David Wallenstein, M.D., a UCLA palliative-care physician. In addition to preventing needless pain and discomfort, he notes, such interventions can improve the likelihood that curative approaches will succeed. For example, helping to control symptoms for chemotherapy patients can enhance their ability to maintain the strength and function they need to withstand the treatment. Earlier involvement of palliative-care teams can also help to facilitate important discussions about advance directives and other end-of-life issues at a more opportune time.

“It’s so much easier for the patient and their family to have these discussions in a controlled environment, as opposed to at the bedside in the intensive care unit at 2 a.m. when there’s a crisis,” says Dr. Wallenstein.

Delia Aguiar, Ester Wall and another sister were at their father’s bedside the evening when Dr. Wallenstein arrived for an initial consultation. The physician discussed a drug regimen that could help to make
“At first I didn’t know who they were or why they needed to be there,” Katerina Hoyo (right) recalls of the palliative-care team. But in the weeks leading up to the death of her mother, Georgia Platana (left), in 2008, she was won over by the compassion of the team: “They were a constant presence, so caring and willing to spend time with me.”

Melendez comfortable. Dr. Wallenstein cautioned the family that once Melendez was on the medication, there was a good chance he would no longer be able to interact with them. He suggested that they say whatever they wanted to say to him then in case this was to be their final opportunity.

Looking back, Aguiar remembers that Dr. Wallenstein had tactfully introduced the concept of end-of-life care and what their father’s wishes might be — but at the time, the family wasn’t ready to accept the inevitable. “He was really insightful and in tune that we weren’t quite there,” she says. “At that point, we just wanted our father to be comfortable.”

Once that was accomplished, the family was more receptive to the overtures of the palliative-care team members as the end neared. “I had avoided talking about death,” says Wall. “I know it sounds weird, but their telling us that it was the end was very helpful. They seemed very comfortable with the situation, which made me comfortable. For the first time in a long time, I felt I could let someone else take charge.”

The palliative-care movement was born in the 1980s, driven in large part by patients and families who were dissatisfied with hospital care — particularly as it involved life-sustaining treatments. Far more people were living many years in the advanced stages of chronic diseases, from stroke and dementia to heart failure and emphysema. Cancer was increasingly moving from an immediate death sentence to an illness that people could live with for years, though without being cured. Coronary-artery-bypass surgery, dialysis, ventilator support and other procedures and technologies similarly contributed to more years for people living with chronic illnesses.

But there was also concern that many medical interventions, while technically effective, fail to achieve patients’ goals — and in some cases themselves become a source of suffering. A growing number of family members were distressed at seeing a loved one experiencing pain and discomfort as a result of all-out efforts to keep them alive. This dissatisfaction helped to propel the hospice movement, which had originated in Great Britain two decades before. But as the concept of addressing the comfort of terminally ill patients took hold in the hospice setting, more and more people began to call for hospitals to integrate palliative-care concepts earlier in the course of the patient’s illness, even as approaches to prolonging life were ongoing.
The desire among patients and their families for more control over the dying process has been reflected in the consistent public support for the decriminalization of physician-assisted suicide, notes Diane Meier, M.D., director of the Hertzberg Palliative Care Institute at Mount Sinai School of Medicine in New York City and director of the Center to Advance Palliative Care, a national organization devoted to increasing the number and quality of palliative-care programs in the United States. This support, Dr. Meier suggests, has underscored failures of the medical system to address the desire of seriously ill patients and their families for more say in the treatment process and more attention paid to their symptom management.

“It seemed people were interested in legalizing assisted suicide because they didn’t trust the medical profession to treat pain or respond to other sources of physical and emotional suffering,” Dr. Meier says. “They felt that their only alternative, absurdly, was to hasten their death. The palliative-care movement in many ways was a response to this by saying we don’t have to help people die; we can help them live with these diseases, and we should be doing everything we can to make that additional time of the highest possible quality, to the extent that that’s what patients want.”

Palliative care has come into its own as a discipline in the last decade, Dr. Meier adds, with the recognition that while patient autonomy and self-determination are important, they are not enough. “There was a realization that the medical profession also needs to have the skills necessary to respond in an expert way to pain, shortness of breath and other physical symptoms, as well as existential suffering, depression and anxiety,” she says.

Adds Dr. Ferrell: “These things have not been covered a great deal in the curricula of medical schools or in continuing medical education, so it is important to have experts involved.”

INEVITABLY, AN ISSUE AS SENSITIVE as end-of-life treatment and counseling is emotional and controversial. This was illustrated most recently in the national debate over healthcare reform: A provision in an early version of one of the bills would have provided Medicare funding enabling seniors to consult with practitioners on advance directives and available end-of-life services and support. This provision was mis-characterized by some opponents as establishing “death panels” that would represent a step toward government-mandated euthanasia for the elderly.

But outside the political realm, surveys have consistently shown widespread support for palliative-care concepts of end-of-life counseling and symptom control. According to the Center to Advance Palliative Care, pain is the most common and widely feared symptom of hospital patients, and untreated pain results in medical complications, increased length of hospital stay, increased use of healthcare resources and decreased patient satisfaction, as well as unnecessary suffering.

And in the vast majority of cases, pain episodes and other symptoms can be effectively treated. “Medicine can’t always cure, we can’t always restore function, but we have an almost complete ability to palliate, and we don’t do enough of it,” says Dr. Wenger. “Although at times we might palliate less in order to maximize the chances of survival or cure, by and large we can do both simultaneously.”

At UCLA, the need to develop a palliative-care service was also driven by factors unique to the institution and its mission. On the one hand, notes Tom Rosenthal, M.D., chief medical officer of UCLA Health System, the university now has a significant primary-care presence throughout the Westside of Los Angeles, including a substantial geriatrics program. Many of these older patients have chronic illnesses and can benefit greatly from what palliative care can offer, Dr. Rosenthal says.

On the other end of the spectrum, as a tertiary/quaternary hospital system that sees some of the most complex cases, UCLA is at the forefront in applying ever-more-sophisticated technologies to the care of some of the sickest patients, many of whom come to UCLA after conventional treatments have failed. But these treatments are not always successful.

“We know, as a result, that we will have a significant number of patients who will be in our intensive care units for whom the curative approach has run its
The bread and butter for all palliative-care teams in working with patients is the control of pain and other symptoms. This can be helpful for those who are undergoing active therapies ... as well as for those who are no longer benefiting from treatment and can be made more comfortable.

course, and thus we needed a multidisciplinary team that could work closely with families in offering insights and developing care plans in that setting,” Dr. Rosenthal explains.

Adds Dr. Wenger: “UCLA is a place where people come hoping for a miracle. High-quality palliative care is necessary to ensure good outcomes, even when the miracle doesn’t happen.”

There are many challenges to building a palliative-care program from the ground up, starting with the need for appropriate resources and personnel to ensure that a multidisciplinary team is available for consultation. Beyond that, the field is still new enough that raising awareness of the service among attending physicians and nurses is critical. “The biggest challenge is integrating this awareness into a culture that is very focused on heroic and spectacular lifesaving treatments,” says Dr. Rosenthal. “It can be difficult for a doctor whose passion is to do everything possible to help the patient recover to recognize that another approach may need to be incorporated.”

But Dr. Rosenthal believes such attitudes have begun to change, and that as more physicians learn about the palliative-care service, they are embracing the opportunity to call on the team’s expertise.

That’s been the experience at UC San Francisco Medical Center, whose palliative-care service, established in 1999, is among the nation’s oldest. “Places like UCSF and UCLA are large, highly specialized institutions built on research and clinical care designed to cure disease,” says Steve Pantilat, M.D., the founding director of the UCSF palliative-care program. “A focus on symptom management and the recognition that people die despite the treatment we give them is not an intrinsic part of the culture. And so a palliative-care service, at least at first, is swimming against the tide.”

But in the decade since his program was established, Dr. Pantilat has seen a major shift in that culture. His multidisciplinary team service is being called on to consult with more patients at, on average, earlier points in the disease process. “Among physicians, nurses, medical students and residents, palliative care isn’t new anymore – it’s just a standard part of the care we provide,” Dr. Pantilat says. Palliative care is now among the most highly sought-after electives among medical students and medicine residents at UCSF, he adds.

In building its service, UCLA has consulted with Dr. Pantilat, as well as with palliative-care experts at other established programs. A three-phase plan was developed to be implemented over the course of more than a decade. The first phase was to develop a system in which a team of well-qualified palliative-care providers was assembled, and physicians at both the Santa Monica and Westwood hospitals became familiar with their services and comfortable requesting consultations for their patients. The plan’s second phase involves introducing educational opportunities for physicians, nurses, social workers and other staff, as well as medical students and residents. Ultimately, the plan will move into a third phase: developing and carrying out a research program.

WHEN HE IS CALLED in to consult, Dr. Wallenstein explains, his first step typically involves sitting down with the patient and family to discuss their goals. “We talk about whether or not these goals are realistic, given the bigger picture, and then we operationalize these goals as much as possible,” he says. This tends to involve sensitive discussions with the patient and family members about the disease process and the patient’s prognosis – often representing the first time they have had these issues raised. Some families aren’t ready to think about worst-case scenarios, and those wishes are always respected. “I just try to make sure they have all the information they want to hear,” Dr. Wallenstein says.

Often, before patients and family members are able to have those discussions, efforts must be undertaken to make the patient more comfortable. To be sure, the bread and butter for all palliative-care teams in working with patients is the control of pain and other symptoms. This can be helpful for those who are undergoing active therapies – such as the chemotherapy patient who may need palliation to be able to withstand the regimen – as well as for those who are no longer benefiting from treatment and can be made more comfortable.

When patients are able to set treatment goals early
in the process of a potentially fatal illness, Dr. Wal- lenstein explains, it can help them to feel empowered. “They might not have much control over whether they’re dying of cancer, but they can have control over their dying process, including the type and amount of treat ment they get and their level of comfort,” he says.

Inevitably, family members may be faced with wrenching decisions concerning how aggressively to treat loved ones who are near death and unable to speak for themselves. There, too, the palliative-care team can be a welcome ally for both information and counsel. When patients or families are interested in discussing spiritual issues related to their decisions, UCLA’s chaplaincy service can be brought in to assist. “The hospital is trying to approach patients holistically, which includes not only patients’ bodies but their mind and spirit, and the importance of the spiritual care often becomes even more acute when the physical reality is harsh or limited,” says Rev. Yuko Uesugi, manager/chaplain of the Spiritual Care Department at Santa Monica-UCLA Medical Center and Orthopaedic Hospital. “It is human nature that many of us look for resources that help us to transcend that reality, to find comfort or some sense of hope and meaning in not only relationships with others, but also relationships with a larger reality that often includes the spiritual aspect of our lives.”

For Katerina Hoyo, the palliative-care team at Santa Monica-UCLA Medical Center and Orthopaedic Hospital provided much-needed support during the dark two-week period in September 2008 leading to the death of her mother, Georgia Platana, at age 62 from melanoma. “At first I didn’t know who they were or why they needed to be there,” she recalls. “You’re in denial about it being the end for your family member.” But Hoyo was won over by the compassion of the team members; soon she was having lengthy discussions about her options, including the physiological process that would occur if she decided to take her mother off of the ventilator that was keeping her alive — a path Hoyo ultimately chose. “They were a consistent presence, so caring and willing to spend time with me,” Hoyo says. “That’s a big deal when you’re in the hospital all the time and feeling all alone.”

For many family members experiencing the anguish of a dying loved one, a hospital can indeed feel like a cold, dark and lonely place. One of the goals of UCLA’s palliative-care service is to change that sense. It started with Dr. Ferrell’s notion that when a patient dies in a hospital, the family should, at minimum, receive a condolence card before getting a bill. Last spring, that notion was taken a step further with the establishment of a bereavement program at Santa Monica-UCLA Medical Center and Orthopaedic Hospital. An educational packet was developed for families with an overview of the bereavement process and information about mortuary and counseling services. The palliative-care team began making routine follow-up calls to see how the families were doing and, if requested, make referrals.

“Often after patients have passed, I make calls to see how their significant others are doing and to offer any additional help we can provide,” Meyer, the palliative-care nurse, says. “So many of these people express such gracious appreciation of what we were able to do — that we’ve relieved pain and symptoms, provided emotional support, given them the information they needed to make complex and difficult decisions on behalf of their loved ones.”

Last summer, the first “celebration of life” was held — a memorial service at the hospital for patients who had recently died. Families were invited, but as much as anything the service was for the staff. “Members of our staff tend to become very close to the patients, and this is a way for them to celebrate the lives of these patients and experience some closure,” Dr. Ferrell explains. “It also sends a message that we do care about our patients and about what happens after people leave the hospital.”

Dan Gordon is a regular contributor to UCLA Medicine.
Dr. Slamon’s Perspective

WHEN THE U.S. FOOD & DRUG ADMINISTRATION approved the use of Herceptin to treat advanced breast cancer 11 years ago, Dennis Slamon, M.D., predicted that the new therapy would someday become one arrow in a quiver of molecularly focused drugs that target tumor cells, while leaving healthy cells alone.

It appears that he was right.

Dr. Slamon has a good vantage point from which to view recent developments. His research at UCLA directly led to the development of Herceptin, and has earned him worldwide recognition, including more than two-dozen national and international awards. Today, Herceptin is accepted as the standard of care for the 20 percent of women with breast cancer who have the HER2 mutation.

And Dr. Slamon is confident that new treatments deriving from clinical trials now underway will offer even more potent therapies. “The one-size-fits-all approach for the major cancers, including especially for breast cancer, was not as effective as it could have been,” says Dr. Slamon, who is the director of clinical/translational research at UCLA’s Jonsson Comprehensive Cancer Center. “What we’ve been doing here is trying to design therapies very specifically for what’s driving the cancer and develop something that is more effective and less toxic.”

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In the 11 years since it was approved, Herceptin has been tested against breast cancer in clinical trials with different chemotherapy combinations. In two studies, one pairing Herceptin with Avastin, a drug that attacks tumors by inhibiting the growth of new blood vessels, and one combining it with an inhibitor of the epidermal growth factor receptor, Tarceva, chemotherapy was removed from the mix entirely. And Herceptin is currently being tested in a large international trial paired with chemotherapy and Avastin.

In early-stage breast cancer trials, Herceptin paired with chemotherapy significantly increased disease-free survival time. The study also tested Herceptin with a chemotherapy combination that eliminated Adriamycin, an anthracycline that is commonly used to treat breast cancer but which, when used with Herceptin, can cause heart damage. That altered regimen also significantly improved disease-free survival.

Oncologists have been reluctant to remove Adriamycin from their arsenal, but Dr. Slamon says that his study definitively proved it is possible to get the same result without it, which may lead to yet another paradigm shift in treatment for breast cancer.

The Herceptin-Avastin and Herceptin-Tarceva studies also have been promising. But UCLA oncologists are most excited to see results from the large international study.

Ultimately, Dr. Slamon says, “we hope these studies will lead to another very effective treatment option for women with breast cancer.”

Awards/Honors
Dr. Edward De Robertis, the Norman Sprague Professor of Molecular Oncology, has been appointed by Pope Benedict XVI to a lifetime term on the Pontifical Academy of Sciences, a 406-year-old organization of 80 scientists who work to promote the progress of the mathematical, physical and natural sciences. The academy is an international and interdisciplinary body that reports to the Pope. About 30 current members are Nobel Laureates, including theoretical physicist Stephen Hawking.

Dr. Eric E. Johnson, chief of Orthopaedic Trauma and the Mullikin Professor of Orthopaedic Surgery, has received an Honorary Membership in the Royal College of Surgeons of Ireland. He was inducted during ceremonies at the College in Dublin, Ireland.

Dr. Gerald S. Levey, dean of the David Geffen School of Medicine at UCLA and vice chancellor for UCLA Medical Sciences, received the Charles Drew University of Medicine and Science Board Medal of Honor during the school’s commencement in June 2009.

Dr. Areti Tillou, assistant professor of surgery, received the Dennis W. Jahnigen Career Development Scholars Award from the American Geriatrics Society. The award provides a two-year grant to assist young faculty to initiate and ultimately sustain a career in research and education in the geriatrics aspects of his/her discipline.

Dr. Hong Wu, professor of molecular and medical pharmacology, has been named the inaugural David Geffen Chair in Medical Research, a position that will focus on advancing the field of cancer research. Dr. Wu is the associate director for research at the translational Institute for Molecular Medicine (IMED) and also a researcher with the Jonsson Comprehensive Cancer Center. She is known for her work with PTEN, the second most frequently mutated tumor-suppressor gene.

Grants
Funding agency: National Institute of Neurological Disorders and Stroke
Grant amount: $6.241 million
Grant duration: 5 years
Principal investigator: Dr. David Hoxha, professor of neurosurgery and molecular and medical pharmacology/director, UCLA Brain Injury Center
Summary: Explores how the brain’s fuel demands...
THERE ARE ROCK STARS. And there are rock stars of science, like UCLA’s Jeffrey Cummings, M.D., a professor of neurology and director of the Mary S. Easton Center for Alzheimer’s Disease Research and the Deane F. Johnson Center for Neurotherapeutics at UCLA. Dr. Cummings is among 11 “Rock Stars of Science” who were paired with iconic stars of the stage – guitarist Joe Perry of Aerosmith, singer-songwriters Sheryl Crow and Seal, Black Eyed Peas front man will.i.am and pop crooner Josh Groban – for a six-page photo spread in the June 2009 issue of GQ. (Single-page spreads also have run in The New Yorker, Vogue and Vanity Fair, among other publications.)

Dr. Cummings is a leading researcher into the mechanisms of Alzheimer’s and other neurological diseases. He and his team are working to understand how Alzheimer’s disease kills cells to produce memory loss and to develop answers that potentially could lead to cures.

The “Rock Stars of Science” public-service campaign, which is sponsored by the Geoffrey Beene Foundation, aims to elevate the public’s awareness of the crucial role of science and scientists and to encourage support for more funding for research toward cures for cancer, Alzheimer’s disease and HIV/AIDS.

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Was Dr. Cummings surprised to learn he’d been selected as a Rock Star? “I was incredulous,” the soft-spoken scientist says. “Then I thought this sounds like a kind of cool idea – a way to reach out to an audience who would not ordinarily think about Alzheimer’s disease but should because their parents and their grandparents are of the age when it might become an issue for them.”

While he hasn’t exactly been basking in the adulation that usually comes with being a genuine rock star, there have been moments. He’s been recognized while shopping for clothing at Nordstrom and by a fellow customer at the bank. “That made me feel incredible,” Dr. Cummings says. “I had a moment of what it is like to be a celebrity. But I was disappointed that nobody asked for my autograph.”

For more about “Rock Stars of Science,” to see the complete spread, read profiles and watch videos of the scientists talking about their work, go to: www.rockstarsofscience.org.

For the “Rocks Stars of Science” photo shoot, Dr. Jeffrey Cummings was posed with singer Josh Groban (center) and Alzheimer’s vaccine researcher Dale Schenk (right) of the Dublin, Ireland-based biotech firm Elan Corp. Afterward, Groban commented: “It’s like being in the middle of a genius sandwich.”

Funding agency: National Institute of Allergy and Infectious Diseases
Grant amount: $2.566 million
Grant duration: 2 years
Principal investigator: Dr. Gay M. Crooks, professor of pathology/laboratory medicine and pediatrics
Summary: To understand how the immune system develops in young children in order to devise better therapies through the use of stem cells to cure life-threatening diseases.

Funding agency: National Library of Medicine
Grant amount: $1.25 million
Grant duration: 2 years
Principal investigator: Dr. Ricky Taira, professor of radiological sciences
Summary: Development of a system for facilitating the review of clinical data for neuro-oncology patients, intended to promote an orderly process of problem understanding and care.

Funding agency: U.S. Army Medical Research Acquisition Activity
Grant amount: $849,000
Grant duration: 1 year
Principal investigator: Dr. E. Carmack Holmes, professor of thoracic surgery
Co-principal investigators: Dr. Erik Dutson, professor of surgery; Dr. Petros Faloutsos, professor of computer science; Dr. T.C. Tsoa, professor of mechanical and aerospace engineering
Summary: The project will test whether the laparoscopic robot developed by the Center for Advanced Surgical and Interventional Technology can perform telesurgery, telementoring and hands-on teaching at a remote site.
A Toast from Classes Past

On May 8, the MAA welcomed back the classes of ’59, ’84 and ’99 for a reunion weekend in conjunction with UCLA Alumni Day. Beginning with a pool-side cocktail reception at the Luxe Hotel Sunset Boulevard, the weekend was filled with opportunities to reconnect with former classmates and rediscover UCLA. Here are some reflections.

Marilyn and I thoroughly enjoyed the Friday night party. It was really fun to see and chat with old friends, especially those who went through as much as we did. We were all so supportive of each other and have a tight bond. The Saturday UCLA Alumni Day event was a bonus. We are not able to travel much and would never have gone to that event if it had been on another weekend. So the entire weekend activities get a big vote of confidence from Dr. and Mrs. Charles Gehibach.

– Charles Gehibach, M.D. ’59
Auburn, California

We had a great time at the MAA reunion dinner and at UCLA Day the next day. Having both events the same weekend gave us an opportunity to become immersed in UCLA spirit and reconnect with friends and activities with a great UCLA flavor. The setting for the dinner was beautiful and thoroughly enjoyable – we talked about old times until late into the night. We complained about residents and new partners and how things just weren’t the same as 25 years ago when we all worked so hard – then met the class of 1959 who said the same about us.

UCLA Day was great, with our highlight being the tour of the new Ronald Reagan UCLA Medical Center – quite an impressive piece of work. The entire experience had a particularly personal feel, and had special meaning to us as our daughter was recently accepted into the freshman class at UCLA to start this fall. Upon learning of her acceptance, she told me, “Dad, you know I bleed blue and gold.” I was so proud. We talked to so many nice people, and especially the students – and the alumni scholarship recipients were very helpful and full of useful information. Oh yeah, the double-decker bus ride is always a lot of fun, trading made-up facts with the student guides. Can’t wait to come back next year.

– Rick Fischel, M.D. ’84
Orange, California

Cheers to the Classes of ’55-’60, ’70, ’80, ’90 and ’00

MAKE PLANS to join your classmates at the Medical Alumni Association’s 2010 Reunion Champagne Brunch on May 16 in Westwood at the Palomar Hotel, which will serve as the MAA host hotel for out-of-town alumni. For the first time, graduates celebrating more than 50 years will be included in the reunion festivities. Invitations will be mailed in the spring. Call the MAA office at (310) 825-0988 or go to medalumni.ucla.edu to update your contact information.

For more information on the brunch, go to www.medalumni.ucla.edu/events/reunion.shtml

Come One, Come All

THE 2010 Medical Alumni Association Reunion Weekend coincides with UCLA Alumni Day, formerly UCLA Day, on May 15. All medical alumni, regardless of graduation year, are invited to enjoy this special event, which includes lectures, tours and presentations and culminates with the Chancellor’s BBQ. UCLA Alumni Day and the MAA Reunion Champagne Brunch require separate registrations.

For more information on UCLA Alumni Day, visit www.UCLADay.UCLA.edu

Give Back

THE UCLA Medical Alumni Association (MAA) is looking for alumni who can share their time, energy and talents to make the organization better through service on the Board of Directors and/or other volunteer opportunities. If you are interested, contact MAA Director Valerie Walker at (310) 794-4025 or email vwalker@support.ucla.edu.
**Welcome Back, Donald**

DONALD A. ADAMS has three degrees from UCLA – undergraduate degree in 1950, a master’s in ’51 and his M.D. in ’55, and his affinity for his alma mater has been demonstrated through a professional lifetime of service and philanthropy. He also is a founding member of the original UCLA Medical Alumni Association (MAA), and now he has returned to again be a member of the MAA’s Board of Directors.

HE DESCRIBES IN HIS OWN WORDS HIS BACKGROUND AND HIS VISION FOR MAA:

Over the course of my career, I have always been active participating in or helping organize various medical endeavors. In medical school, I helped form a medical fraternity and develop a student American Medical Association chapter. In the 1960s, with assistance from several of my colleagues and Dean Stafford Warren and later Dean Sherman Mellinkoff, we started the Medical Alumni Association. I was the first president, and I still have the original by-laws. The fledging MAA faltered after a few years because of a lack of funding, but the current MAA is flourishing with fine leadership and financial support.

In my nearly 55 years since graduation, I have had an active and productive career in private practice and in various administrative medical positions. I was on the boards or president of several medical societies and received many honors and awards, including the coveted UCLA Medical Alumni Association’s Professional Achievement Award in 1996.

I was recently invited to join the current MAA Board, and I’m pleased to offer my experience and institutional knowledge. I have long appreciated what UCLA and the school of medicine have given me. I am particularly interested in fostering medical student scholarship funds. The need has always been great. Now, it is greater. I’m proud to say that through the efforts of my classmates and friends, the Class of ’55 was the first to reach $100,000 and endow a medical student scholarship. My personal vision is to see that all of our graduating classes achieve that goal.

To find out how much your class has in its fund and/or to make an online donation, visit www.medalumni.ucla.edu/donation/donation.shtml

**Supper Time**

ALUMNI HOSTS have been making UCLA a warmer and friendlier place for students since 1968 by serving up good food and conversation through Dinners for 12 Strangers. After 40 years, this UCLA tradition is expanding to students in the professional schools, including the David Geffen School of Medicine at UCLA, with alumni guest/host dinners throughout the country.

The award-winning Dinners for 12 Strangers is based on a simple idea: On three specific dates, local alumni host dinners in their homes for students, faculty and fellow alumni. Dinners range from catered affairs and simple buffets to home-cooked fare. In addition to a great meal, the program offers participants an opportunity to make new friends and valuable Bruin connections.

The 2010 Dinners for 12 Strangers will be held on February 27, 28 and March 6. Every effort will be made to match medical students with Medical Alumni Association members. To host or co-host a dinner, go to the website below to complete the online registration form by January 15. For information, call (310) 206-2426 or e-mail Dinners@UCLAlumni.net.

For more information and to register, go to www.UCLAlumni.net/Dinners

**The Dean’s Visit**

DURING THE FALL MAA Board of Directors meeting, Gerald S. Levey, M.D., vice chancellor for UCLA Medical Sciences and dean of the David Geffen School of Medicine at UCLA, gave his annual address. He expressed his pride for the medical school’s new Learning Center, the growing number of medical student scholarships, and the school’s relationship with Charles R. Drew University of Medicine and Science and the University of California, Riverside, and the extraordinary success of the new Ronald Reagan UCLA Medical Center.

“Over the last 15 years, we have expanded and enhanced our donor base, increased the number of scholarships, added more than 100 endowed chairs, increased National Institutes of Health grant funding almost threefold, strengthened relationships with our colleagues across campus, completed construction of Ronald Reagan UCLA Medical Center and five new research buildings and experienced the exhilaration of Mr. David Geffen endowing and naming the school of medicine,” he said.

Dr. Levey reported that the school and hospital system are in great shape and that his successor will inherit an “A-team” to manage the large, complicated and dynamic academic medical center.

Dr. Gerald S. Levey (center) met with members of the MAA Board.
IN A CELEBRATORY EVENING that was filled with touching moments, the appearance of entertainment executive Joan Hyler on the stage of the Department of Neurosurgery’s 2009 Visionary Ball to accept the first-ever Courage Award was one to remember.

Ms. Hyler has been fighting her way back to full recovery after she was hit by a speeding car while crossing Pacific Coast Highway last year. She was wheeled onto the stage at the Beverly Wilshire Four Seasons Hotel during the October 1 event to receive the award from her long-time friend, comedy-writer and multiple Emmy Award-winner Bruce Vilanch, who spent many hours with her at Ronald Reagan UCLA Medical Center. Leaning on Mr. Vilanch, she stood from her wheelchair to accept her award.

“We thought it was over when they brought her in,” Mr. Vilanch told the audience. “They wanted to amputate her legs. She wasn’t breathing on her own, wasn’t responsive. She had to learn to speak again and is now relearning to walk. It’s still an uphill climb, but at least she can climb.”

The Visionary Ball, co-chaired by Edie Baskin Bronson and Jill Grey, raises funds to help sustain the Department of Neurosurgery’s pursuits in research, teaching, patient care and public service. The event also honored Tony Pritzker, managing partner of The Pritzker Group, and David T. Feinberg, M.D., M.B.A., chief executive officer of UCLA Hospital System and associate vice chancellor, with Visionary Awards for their accomplishments and dedication to excellence in their respective fields. Actor/comedian Jim Carrey was the recipient of the Rodney Respect Award, presented by Joan Dangerfield, widow of comedy legend Rodney Dangerfield.

Another highlight of the event was a series of moving patient testimonials, including one from 32-year-old Brina Limon, who had a special story to share. At the last Visionary Ball, in 2007, Neil A. Martin, M.D., W. Eugene Stern Chair in Neurosurgery, was unable to attend because he was in the midst of a 16-hour surgery to save Brina’s life. This year, she glowed from her seat, telling the audience that thanks to Dr. Martin’s efforts, she was now well and enjoying life.

The event, emceed by Tom Bergeron, Emmy Award-winning host of the hit TV show Dancing with the Stars, and with entertainment from five-time Grammy winner and former Doobie Brother Michael McDonald, raised $1.84 million.
**Gifts**

Jim Easton, a 1959 graduate of UCLA, donated $10 million to the UCLA Alzheimer’s Disease Center, directed by Dr. Jeffrey Cummings. The center was founded in 1991 to conduct research and provide care relevant to normal aging, mild cognitive impairment, Alzheimer’s disease and other causes of late-onset cognitive decline. In recognition of Mr. Easton’s generosity, the Mary S. Easton Center for Alzheimer’s Disease Research was named in honor of his mother. The gift includes a $5-million endowment plus $5 million to support research by the newly established Jim Easton Consortium for Alzheimer’s Disease Drug Discovery and Biomarker Development.

Mr. Easton is chairman and chief executive officer of Jas. D. Easton Inc., a privately owned manufacturer of sports equipment, and is a member of both the U.S. and the International Olympic Committees. “My mother lived a long and productive life that ended in a devastating way,” Mr. Easton says. “I hope my gift, along with donations from many others, will help make it possible for the talented scientists and physicians at UCLA to develop a cure and eventually prevent Alzheimer’s disease.”

In addition, the UCLA Cardiovascular Discovery Fund (CDF) received $1.65 million to establish the Jim Easton Investigator Fund to support the work of a researcher. CDF targets promising, novel strategies that will expedite the acquisition of basic-science results and translate them into clinical applications for patients with cardiovascular disease.

The Entertainment Industry Foundation (EIF) directed gifts totaling $3 million to the Jonsson Cancer Center Foundation during the 2008-09 fiscal year. These contributions support high-priority clinical/translational women’s-cancer research projects led by Dr. Dennis Slamon. Over the past 15 years, EIF has contributed nearly $30 million to support cancer research at UCLA.

Ronald A. Katz, in honor of his late wife, Maddie, pledged funds to fully endow the Maddie Katz Chair in Palliative Care Research and Education in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. He made an additional gift to create the Katz Family Palliative Care Education Endowed Fund under the direction of the chair holder.

Dr. S. Sanford Kornblum and Charlene S. Kornblum have made a $1-million gift to the Jonsson Cancer Center Foundation to establish the S. Sanford Kornblum, M.D., and Charlene S. Kornblum Family Quasi-endowment for Brain Cancer Research at the Jonsson Comprehensive Cancer Center. The Kornblums’ generosity will fund innovative research in this challenging field for many years to come.

The Mattel Children’s Foundation, in celebration of the 10-year anniversary of Mattel’s partnership with the UCLA Department of Pediatrics and Mattel Children’s Hospital UCLA, made a pledge of $2 million to support nanopediatrics, which will focus on technology and medicine at the molecular level for the care of children. The gift also underwrites the International Network Initiative to bring these developments to kids around the world.

“The Mattel Children’s Foundation is excited to support this groundbreaking program in nanopediatrics, which will revolutionize the research and treatment of illnesses that affect young patients,” says Kevin Farr, chairman of the foundation and chief financial officer of Mattel, Inc. “Our philanthropic vision is to make a meaningful difference, one child at a time, and we believe that the nanopediatrics program will advance more personalized, and consequently more effective, healthcare treatments for children.”

**Events**

The UCLA Division of Head and Neck Surgery celebrated the naming and dedication of the Jack H. Skirball UCLA Cochlear Physiology Laboratory in the Rehabilitation Center on August 12, 2009, in recognition of The Skirball Foundation’s generous support of the Cochlear Implant Program. This program helps make possible research into more effective treatments for hearing loss and the availability of more cochlear implants for indigent patients, particularly youngsters. The event also recognized the close friendship Mr. Skirball shared with Dr. Victor Goodhill, world-renowned UCLA otologic surgeon for whom the Victor Goodhill Ear Center at UCLA was named. Dr. Gerald Berke, chief of the Division of Head and Neck Surgery, welcomed Dr. Uri Herscher, founding director and president of the Skirball Cultural Center; Ms. Kathryn Girard, its chief of staff; and division supporters. Also present were Dr. Akira Ishiyama, director of the Cochlear Implant Program, and Dr. Rinaldo Canalis, professor-in-residence.

Mattel Party on the Pier – the signature fundraiser for Mattel Children’s Hospital UCLA – celebrated its 10th anniversary on October 18, 2009, at Pacific Park on the Santa Monica Pier. The hospital honored Shawn and Larry King, who were married in Mr. King’s UCLA Medical Center room just before he underwent heart surgery and who had their two sons delivered at UCLA. Mattel Children’s Hospital UCLA relies on Mattel Party on the Pier to provide unrestricted funds needed to support its pediatric faculty and bring children the very best in medical care.
FRIENDS

Chairs of Distinction

CLINICAL PHARMACOLOGY bridges the gap between laboratory science and the practice of medicine. Its primary aims are to promote safe and effective pharmaceutical-drug use in patients and to optimize the medical benefits and minimize the potential risks of prescription drugs. The Rosalinde and Arthur Gilbert Foundation has pledged $1 million to establish The Rosalinde and Arthur Gilbert Foundation Endowed Chair in Interdepartmental Clinical Pharmacology. This administrative chair is currently held by Dr. Barbara A. Levey, director of UCLA’s Interdepartmental Clinical Pharmacology Training Program.

“The vision to establish this chair in a critical area of medicine by The Rosalinde and Arthur Gilbert Foundation will benefit the health of future patients worldwide,” says Dr. Levey, who is also assistant vice chancellor for biomedical affairs at UCLA. “Our program is particularly well-positioned to become the country’s leading advanced, patient-oriented research-training program that has an emphasis on appropriate medication dosages, with a particular focus on medication issues as they affect minority populations.”

The Rosalinde and Arthur Gilbert Foundation was created to promote education, tolerance, social services and the arts. The Gilberts were passionate philanthropists, dedicated art collectors and astute business people. Born and raised in England, the Gilberts immigrated to Los Angeles in 1949 and became successful real estate entrepreneurs. They committed their efforts to significant charitable endeavors locally and in the State of Israel, while assembling one of the world’s preeminent collections of decorative arts. After the deaths of Rosalinde in 1996 and Sir Arthur in 2001, the remainder of their estate was donated to the foundation. Richard Ziman and Martin H. Blank Jr., the foundation’s directors, are long-time UCLA supporters and have continued the foundation’s enduring commitment to the university.

For more information about The Rosalinde and Arthur Gilbert Foundation: www.thegilbertfoundation.org

A DYNAMIC, ENERGETIC 12th-grade advanced-placement English teacher, Mrs. Rose Gilbert is now one of the oldest full-time teachers in the Los Angeles Unified School District, and one of the oldest in the nation. For more than 50 years – first at University High School in West Los Angeles and then at Palisades Charter High School in Pacific Palisades – the UCLA aluma has imparted her love of literature, poetry and life to her students.

Mrs. Gilbert and her husband, successful developer Sam Gilbert, who died in 1987, spoke 10 foreign languages between them and traveled the world. Mrs. Gilbert also took trips with her daughter, Maggie, deceased, who was a trust attorney and UCLA graduate herself.

A generous UCLA supporter, Mrs. Gilbert had endowed more than a dozen scholarships and underwritten numerous academic initiatives for Intercollegiate Athletics at the time that Maggie died suddenly in 2004 at the age of 58. Mrs. Gilbert then directed her philanthropy in her daughter’s memory to benefit UCLA student athletes, honors students, alumni scholars, future teachers and a special biomedical book collection. Additionally, Mrs. Gilbert created the Maggie G. Gilbert Endowed Chair in Bipolar Disorders, established in 2008 at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.

A DISTINGUISHED UCLA NEUROSCIENTIST, Dr. Joaquin M. Fuster has performed landmark studies on the cellular basis of working memory, which he calls “a central element in the organization of behavior, language and thinking.” He dedicated his life’s work to a greater understanding of the cognitive disorders at the root of neurological and psychiatric conditions such as brain trauma, Alzheimer’s disease and schizophrenia. Among his honors are awards from the National Institute of Mental Health, the Fyssen International Prize (Paris) for scientific achievement, the Goldman-Rakic Prize in Cognitive Neuroscience and the George Miller Prize of the Cognitive Neuroscience Society. He is an elected Member of Honor of the Spanish Royal Academy of Medicine and Doctor Honoris Causa of the University Miguel Hernández (Alicante) and the Autonomous University of Madrid.

Born in Barcelona, Spain, Dr. Fuster received his M.D. degree in medicine and surgery at the University of Barcelona and his Ph.D. degree in neurophysiology at the University of Granada. In 1956, he immigrated to the United States to initiate a career in neuroscience at UCLA. He serves as director of the Cognitive Neuroscience Laboratory at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA and is an active member of the Brain Research Institute. In appreciation of UCLA’s support over so many years and to advance scholarly work in his field, Dr. Fuster established the Joaquin M. Fuster Chair in Cognitive Neuroscience in 2004. Its principal focus is on the brain mechanisms of cognition. The first holder of the chair is Professor Susan Bookheimer.

“After 46 years of service to the university,” Dr. Fuster says, “this matter is as close to my heart as my children and grandchildren.” He is married to Elisabeth Baladia, and together for those many years they have been dedicated supporters of UCLA.
MARWA NAIM CAME INTO MY LIFE nearly four years ago. She was a 12-year-old Iraqi girl who had suffered a horrible tragedy: A mortar round fired during an assault in Baghdad killed her mother, and the fragment of another shell took away Marwa's nose and the thumb of her left hand. A relief agency called me to ask if I would be willing to reconstruct her nose. I said yes, and the wheels of the process to bring Marwa to Los Angeles and UCLA began to turn.

Her long journey started with a clandestine, night-time trip to Jordan, hundreds of miles from her ruined home, and then a flight to Los Angeles, where she arrived at 1 o'clock on a Sunday morning. What would I encounter when I first met her, I wondered. What would she be like, this too young, too innocent child, so far from her home, her language, her culture, facing an unknown future? Would she be terrified? Distraught? Suspicous? Angry? She was none of those things. The child I met was, simply, Marwa, a bashful 12-year-old with unmistakable dignity and intelligence, and a distinctive wry smile that suggested, as she looked at me, "I'm OK, but you don't look so good."

It was remarkable that from the very beginning, Marwa did not seem to be disturbed or shy or embarrassed about her injury. If she was, she did a magnificent job covering it up. I remember hearing a report shortly after we had cut a flap from her forehead that had been turned 180 degrees to form her new nose that she went riding a bicycle along the beach in Santa Monica. The pedicle – the piece of skin that connected the flap to her forehead – was still attached! It surely was not attractive, even to her surgeon, but to my astonishment, Marwa did not seem to be the least bit bothered.

Sure, her self-confidence understandably would crumble on the day of each surgery, but as we went along, I could see that she recognized her face would be restored, and I like to think she trusted I would take care of her even though she did not fully understand what I was about to do. Then came the moment when the attachment was divided, and, for the first time, something that looked like a nose was there. Her smile, which was truly beautiful, appeared more often, and her spirit seemed to soar.

So did mine. In the final operation, I placed cartilage from her ear under the forehead to sharpen the projection of the tip of the nose. When she came to have the sutures removed four days later, I asked Marwa how she liked her new nose. She smiled broadly as she looked in the mirror and shook her head up and down. It was a very happy occasion, but there was also, for me, some sadness. I realized at that moment that my job was done and Marwa would be leaving.

For Marwa, the idea of returning home was filled with uncertainty. "Who knows the future?" she would say, through her interpreter and marvelous friend, Teresa Moussa, an international patient liaison at UCLA. Her feelings were clearly mixed – torn between a place that had welcomed her and many new friends who, over the four months she was with us, had grown to love her and her sense of loyalty and obligation to her family.

I didn't go to the airport to see her off when she left; it would have been too difficult, both of us crying. But from the day she left, I believed somehow I would see her again. I've spent many nights worrying about her. I'd watch the news and see some of the terrible things happening in Iraq and wonder, "Where is she? Is Marwa OK?"

And Marwa did return. This July, she was able to come back for some further revisions of her nose. It was a joyful reunion, but also marked with sadness. Marwa told me how insurgents had fire-bombed her house in Baghdad because she had come to the United States for treatment, and that she was not allowed to return to school because she had spent so much time away. Yet, despite the ongoing hardships in her life, she is still Marwa – a beautiful young woman, now 15 years old, who is determined to endure and let her spirit shine.

I knew that she wanted to stay, but Marwa returned to Iraq in September. Much more verbal now, she would tell me how she needed to take care of her father and the rest of her family at home.

I am sure that is what she is doing now. And I also know she is thinking about those who cared for her, and who still care about her. It was a privilege for us to help her, but what Marwa may not know is that she has given us more than we have given her.

Dr. Timothy A. Miller is chief of the UCLA Division of Plastic and Reconstructive Surgery.
Visionary Music

Michael McDonald, rhythm-and-blues/soul singer, songwriter and former member of the Doobie Brothers, performed at the 2009 Visionary Ball, which supported the Department of Neurosurgery.