Foreign Exchange
Partnership with Chinese university opens the door to broader global reach

A New Paradigm
UCLA puts patients front and center

Sisterhood
Female philanthropists support research in women’s health

Conversation
Dr. Mario C. Deng takes heart

A Second Hand, a Second Chance
Surgeons at UCLA perform first hand transplant in the Western U.S.
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Cover: A study of a woman’s hands, c.1490. Leonardo da Vinci. The Royal Collection © 2011, Her Majesty Queen Elizabeth II.
**OUR CORE COMMITMENT.** Basic research is at the heart of everything we do, from work at the bench to educating future healthcare leaders to transforming patient care to promoting healthy communities.

**IMAGINE LIVING IN A WORLD** where there is no need for organ transplants – because failing kidneys and faltering hearts can be induced, through stem-cell therapy, to heal themselves. The dedicated women and men who conduct research at the David Geffen School of Medicine at UCLA and UCLA Health System have imagined such a world, and the work they are engaged in today is laying the solid scientific foundation for a future in which such miraculous self-repair is commonplace.

Little more than half-a-century ago, routine transplantation of organs seemed equally farfetched, but that did not deter a group of researchers at UCLA from envisioning such a world – and preparing for it by developing a method of tissue-matching that reduces the likelihood a donated organ will be rejected. Some 4,300 successful transplants of organs taken from 2,190 donors were performed in this country in the first two months of this year alone. All of those recipients were indirect beneficiaries of basic research conducted at UCLA in the 1960s.

At a time when we are celebrating the expansion of translational science at UCLA, and nationally, these heartening statistics remind us of the value and vitality of the fundamental research being conducted in our laboratories. This research undergirds and guides everything we do here at UCLA. It not only feeds our translational pipeline, it also underpins our efforts to educate leaders in the health sciences, to transform patient care, and to promote healthy communities.

Fortunately, we are building for the future on the bedrock of a rich history of biomedical discovery, aided by a faculty of basic scientists who are collectively committed to the School of Medicine’s new strategic plan to “discover the basis for health and cures for disease.” I could cite a dozen examples of basic research being conducted at UCLA that foster this plan, but I think that one will suffice, both because of its novelty and because of its potential application to a wide range of human cancers.

A group of researchers at the School of Medicine has succeeded in using genetically modified human stem cells to target melanoma, the least common but most deadly form of skin cancer. This cancer kills one American every hour, and the incidence of melanoma is rising faster than the rates for the seven most common cancers – up 60 percent in the last 30 years.

The stem cells used in this experiment were genetically altered to recognize and kill melanoma cells in mice with human immune systems. Treatment with these specialized cells led to a dramatic decrease in the size of melanoma tumors in the mice. Obviously, this new approach to targeting solid-tumor cancers is still in its infancy, but we can imagine a world in which many cancers will be treated in this way – with pinpoint effectiveness and without the onerous side effects of standard chemotherapy.

In pursuing our vision to “discover the basis for health and cures for disease,” we are recommitting ourselves to basic research, building an efficient infrastructure to facilitate that research, optimizing the use of laboratory space, and recruiting outstanding faculty members. Today’s medical reality is being auspiciously altered through the efforts of our biomedical scientists – men and women who keep UCLA in the vanguard of the basic science that will yield tomorrow’s medical reality.
The Pain of Loneliness

**LONELINESS IS NO FUN,** and now it appears it’s bad for you as well. UCLA researchers report that chronically lonely people may be at higher risk for certain types of inflammatory disease, because their feelings of social isolation trigger the activity of pro-inflammatory immune cells.

In their analysis of 93 older adults, the researchers screened for gene function among different types of immune cells and found that genes originating from two particular cell types – plasmacytoid dendritic cells and monocytes – were over-expressed in chronically lonely individuals, compared with the remainder of the sample. These cell types produce an inflammatory response to tissue damage and are part of the immune system’s first line of defense, which produces an immediate inflammatory response to tissue damage.

It’s this same inflammatory response that, over the long-term, can promote cardiovascular disease, cancer and neurodegeneration.

The report provides further evidence of how lifestyle and social environments can effect human health. In addition, the researchers suggest that evolutionarily ancient immune-system cells may have developed a molecular sensitivity to our social environment in order to help defend us against socially transmitted pathogens.

Extreme Morning Sickness? It Could Be Your Genes

**APPROXIMATELY 60,000 PREGNANT WOMEN ARE HOSPITALIZED** each year due to hyperemesis gravidarum (HG), an extreme form of nausea and vomiting that endangers their lives and often forces them to reluctantly terminate their pregnancies.

And for women with sisters, mothers and grandmothers who have experienced extreme morning sickness during pregnancy, the risk of HG may be heightened, according to a new study led by researchers from UCLA and the University of Southern California. Researchers traced the family histories of women with HG and found not only that the condition could be genetic, but also that women with sisters who had HG could have a more than 17-fold risk of experiencing the debilitating condition, too.

“Pregnant women with a family history of extreme nausea in pregnancy should be aware that they may have it, too, and healthcare providers should take a
Gone Today, Hair Tomorrow

IT HAS LONG BEEN KNOWN THAT STRESS PLAYS A PART IN HAIR LOSS, and over the years, numerous hair-restoration remedies have emerged, ranging from “miracle solvents” to medications such as minoxidil. But even the best have shown limited effectiveness.

Now, a team led by researchers from UCLA and the Veterans Administration that was investigating how stress affects gastrointestinal function may accidentally have found a chemical compound that induces hair growth. The serendipitous discovery is described in an article published in the online journal *PLoS One*.

For their research, the scientists injected mice that had been genetically altered to overproduce a stress hormone called corticotrophin-releasing factor, or CRF, with a compound, astressin-B, designed to block the action of CRF. Mice genetically altered to overproduce CRF exhibit signs of chronic stress, including baldness. The goal of the research was to observe how the CRF-blocking ability of astressin-B affected gastrointestinal function.

The initial results were unpromising; a single injection of astressin-B had no effect, so the investigators continued the injections over five days to give the peptide a better chance of working. There still were no significant findings.

About three months later, the investigators returned to these mice to conduct further studies and found they couldn’t distinguish them from their unaltered brethren. They had regrown hair on their previously bald backs.

The scientists confirmed that the previously bald mice had indeed regrown the hair on their backs, and that the hair growth was sustained for a period of about four months, which is a relatively long time for an animal that lives less than two years.

The effect has been seen only in mice, and it remains unclear whether astressin-B would have the same result in humans, but further study may reveal if “this could open new avenues to treat hair loss in humans,” says Million Mulugeta, D.V.M., Ph.D., adjunct professor of medicine in the Division of Digestive Diseases at the David Geffen School of Medicine at UCLA.

*UCLA researchers have pinpointed the culprit behind chronic rejection of heart, lung and kidney transplants. Published in the journal Science Signaling, their findings suggest new therapeutic approaches for preventing transplant rejection and sabotaging cancer growth.*

The team focused on the mechanism behind narrowing of the donor’s grafted blood vessels, which blocks blood from reaching the transplanted organ. Starved of oxygen and other nutrients, the organ eventually fails, forcing the patient back on the transplant waiting list.

Earlier research by Elaine Reed, Ph.D., director of the UCLA Immunogenetics Center and professor of pathology at the David Geffen School of Medicine at UCLA, and colleagues showed that patients whose immune systems manufactured antibodies to their donor’s human leukocyte antigens (HLA) were at higher risk for chronic rejection. In this study, Dr. Reed and her group looked at how HLA molecules on donor tissue trigger signals that spark overgrowth of the cells lining the inner blood vessels of the grafted organ.

The scientists discovered that HLA’s ability to stimulate cell growth and movement depends upon a quid pro quo relationship with another molecule called integrin beta 4, which enables cells to survive and spread. “We suspect that integrin hijacks HLA and takes over its functions,” Dr. Reed says. “When we suppressed integrin, HLA was unable to make cells grow and move.” Conversely, when the team suppressed HLA, integrin could no longer support cells’ communication with their environment.

“What I’m excited about from a medical point of view is how our findings offer new therapeutic opportunities,” says Dr. Reed. “If we can identify ways to disrupt the relationship between HLA and integrin, we may be able to prevent chronic organ rejection in transplant patients.”

A heart-transplant blood vessel in chronic rejection.
We are incredibly proud of our program, which has served so many patients with this life-saving procedure.

How Autism-Risk Gene Rewires the Brain

UCLA SCIENTISTS HAVE ILLUSTRATED how a gene variant tied to autism rewires the brain. Their discovery, which was published in the online edition of *Science and Translational Medicine*, pinpoints the crucial missing mechanism that links altered genes to modified brain function and disrupted learning.

“This is a key piece of the puzzle we’ve been searching for,” says Professor of Neurology and Psychiatry Daniel Geschwind, M.D., Ph.D., the Gordon and Virginia MacDonald Distinguished Chair in Human Genetics. “Now we can begin to unravel the mystery of how genes rearrange the brain’s circuitry, not only in autism but also in many related neurological disorders.”

The UCLA team scrutinized the differences in brain connectivity and function that result from two forms of the CNTNAP2 gene, one of which boosts the risk of autism. Expecting that CNTNAP2 might influence brain activity, the researchers used functional magnetic resonance imaging (fMRI) to scan the brains of 32 children as they performed learning-related tasks. Half of the children had autism and half did not.

Depending on which CNTNAP2 version the child carried, the researchers observed a difference in connectivity between the left and right sides of the brain. In children with the non-risk gene, communication pathways in the frontal lobe linked more strongly to the left side of the brain, which processes functions tied to language. In children with the risk variant, communications pathways in the front lobe connected more broadly to both sides of the brain, suggesting that the gene variant rewires connections in the brain.

The finding could lead to earlier detection of autism and new interventions to strengthen connections between the frontal lobe and the left side of the brain.

Heart Programs Earn Recognitions

AN AGENCY OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES has recognized UCLA’s heart-transplant program at Ronald Reagan UCLA Medical Center as the nation’s best. The recognition by the Health Resources and Services Administration (HRSA) followed a survey designed to evaluate and recognize the country’s highest-performing organ-transplant programs.

The survey was developed as a way to measure performance by assessing transplant rates, post-transplant survival rates and mortality rates for patients after being placed on the organ-donation waiting list. “This remarkable achievement is a testament to the efforts of our entire UCLA team,” says Abbas Ardehali, M.D., surgical director of UCLA’s heart-transplant program. “We are incredibly proud of our program, which has served so many patients with this life-saving procedure.”

In addition, the American Heart Association honored Ronald Reagan UCLA Medical Center with the Get With the Guidelines (GWTG)-Heart Failure Silver Plus Performance Achievement Award for its success in implementing a higher standard of care for heart-failure patients. The GWTG-Heart Failure initiative helps hospital staff to develop and implement heart-failure-care processes.
Tai Chi Soothes Depression

More than 2-million people age 65 and older suffer from depression, including 50 percent of those living in nursing homes. The suicide rate among white men over 85 is the highest in the country.

How to help elderly depressed individuals?

Researchers at UCLA turned to a gentle, Westernized version of tai chi chih, a 2,000-year-old Chinese martial art. When they combined a weekly tai chi exercise class with a standard depression treatment for a group of depressed elderly adults, they found greater reduction in the level of depression – along with improved quality of life, better memory and cognition, and more overall energy – than among a different group in which the standard treatment was paired with a weekly health-education class.

“This is the first study to demonstrate the benefits of tai chi in the management of late-life depression, and we were encouraged by the results,” says Helen Lavretsky, M.D., director of UCLA’s Late-Life Depression, Stress and Wellness Research Program. “We know that nearly two-thirds of elderly patients who seek treatment for their depression fail to achieve relief with a prescribed medication.”

The study, which was published in the online edition of the American Journal of Geriatric Psychiatry, looked at 112 adults age 60 or older with major depression. The participants were treated with the drug escitalopram, a standard antidepressant, for approximately four weeks, and 73 participants who showed only partial improvement continued to receive the medication daily but were also randomly assigned to 10 weeks of either a tai chi class or a health-education class for two hours per week each.

While both groups showed improvement in the severity of depression, greater reductions were seen among those taking escitalopram and participating in tai chi, Dr. Lavretsky says.

“Depression can lead to serious consequences, including greater morbidity, disability, mortality and increased cost of care,” Dr. Lavretsky says. “This study shows that adding a mind-body exercise like tai chi that is widely available in the community can improve the outcomes of treating depression in older adults, who may also have other co-existing medical conditions or cognitive impairment. “With tai chi,” she says, “we may be able to treat these conditions without exposing these older adults to additional medications.”

iCase Online

In this Internet age, ongoing medical education can be just a mouse-click away. A case in point is the UCLA Pituitary iCase of the Month. Launched by neurosurgeon Marvin Bergsneider, M.D., and colleagues, iCase is an educational web feature with roots in UCLA’s monthly Pituitary Tumor Board.

The monthly meetings draw upward of 40 multidisciplinary participants who hear a variety of case presentations, and it is cited as among the most thorough discussions of clinical issues at UCLA. Last year, “several of the participants approached me to suggest that we try to invite community physicians to the conference,” says Dr. Bergsneider.

While the idea of expanding the conference to include physicians outside of UCLA had great appeal, asking community colleagues to brave West L.A. traffic was a down-side. “This led us to think about recording the conferences and posting the presentations on our website,” Dr. Bergsneider says. After purchasing the necessary equipment and software, the project began.

The case that is posted online each month is selected from among the three-to-four cases that are discussed at each tumor board. While the iCase website is tailored for the iPad, the cases, which include high-resolution MRI and pathology images, can also be viewed on any smartphone or computer.

“This really is an example, we feel, of how post-graduate medical education is evolving to provide media-rich content,” Dr. Bergsneider says. “Innovations like this can make free, extremely high-quality educational content available to both the local and global medical communities.”

To access UCLA Pituitary iCase of the Month, click on the link at www.pituitary.ucla.edu
A National Institutes of Health study has found that adding one or two drugs to the standard ZDV treatment can reduce the chances by more than 50 percent that an infant will develop an HIV infection.

**Heart in a Box**

**SINCE THE ADVENT OF TRANSPLANTATION**, the only method to preserve a donor heart has been to place it in a cold preservation solution during transport to the recipient. But that may change with a new heart-preservation system designed to maintain the organ in a warm, beating and functioning physiologic state outside of the body.

“Human hearts were never meant to be put on ice in a cooler,” says Abbas Ardehali, M.D., surgical director of the UCLA Heart and Lung Transplant Program. He also is principal investigator of the Organ Care System—a trial in the U.S., which is being conducted at UCLA and four other leading heart-transplant centers across the country.

Many major transplant centers only consider using donor hearts that can be transplanted within six hours or less of recovery. Using a new organ-preservation system in which the heart is revived to a beating state, protected within a sterile chamber and continuously perfused with warm, oxygenated, nutrient-rich donor blood, the heart may potentially be kept outside of the body for longer periods of time. “If we’re able to safely transport donor hearts across longer distances, from the East Coast to West Coast for example, we may be able to increase the pool of donor hearts available to patients,” Dr. Ardehali says.

Another potential benefit of the new system, Dr. Ardehali adds, is the ability to more comprehensively assess the heart prior to implantation using imaging, functional and metabolic testing. This may lead to improved immediate and long-term heart function, reduce the risk of organ rejection and increase the number of hearts accepted for transplant.

The “heart in a box” may extend how long a donor heart can be kept outside the body, increasing the pool of available organs.

**Stemming Infant HIV**

**WHEN HIV IS NOT DIAGNOSED** until a pregnant woman with the virus goes into labor, her infant is usually treated soon after birth with the anti-HIV drug zidovudine (ZDV) to prevent the baby from becoming infected. Now, a National Institutes of Health study has found that adding one or two drugs to the standard ZDV treatment can reduce the chances by more than 50 percent that an infant will develop an HIV infection.

The study was conducted at 19 research hospitals in South America, Africa and the United States, under contract to the National Institutes of Health’s Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD).

From 100 to 200 infants are born with HIV in the U.S. each year, many to women who either were not tested in early pregnancy or who did not receive treatment during pregnancy. Internationally, estimates of HIV testing vary, with only 21 percent of pregnant women in low- and middle-income countries having been tested during pregnancy.

Infants in the study born to women whose HIV was not diagnosed until they were in labor, and who were treated after their birth with the routine six-week course of ZDV plus three doses of nevirapine (NVP) during the first week of life or with ZDV plus two weeks of lamivudine and nelfinavir, were more than 50 percent less likely to be infected with HIV than those infants who received ZDV alone.

“Our results showed conclusively that the two- and three-drug regimens are superior to the standard treatment with zidovudine,” says the study’s chair, Karin Nielsen-Saines, M.D., clinical professor of pediatrics in the division of infectious diseases at the David Geffen School of Medicine at UCLA and a member of the UCLA AIDS Institute.
The Coffee-Diabetes Connection

COFFEE MAY GIVE US AN EARLY JUMP-START, but numerous studies have shown that it also may be protective against type 2 diabetes. Yet no one has really understood why. Now, UCLA researchers have discovered a possible molecular mechanism behind coffee’s protective effect: a protein called sex hormone-binding globulin (SHBG).

The protein regulates the biological activity of testosterone and estrogen, which have long been thought to play a role in the development of type 2 diabetes. And coffee consumption, it turns out, increases plasma levels of SHBG.

Reporting with colleagues in the journal Diabetes, Atsushi Goto, a doctoral student in epidemiology, and Simin Liu, M.D., professor of epidemiology, show that women in the study who drank at least four cups of coffee had significantly higher levels of SHBG and were less than half as likely to develop diabetes as non-coffee drinkers.

A large body of clinical studies has implicated the important role of sex hormones in the development of type 2 diabetes, and it’s known that SHBG not only regulates the sex hormones that are biologically active, but may also bind to receptors in a variety of cells, directly mediating the signaling of sex hormones.

“It seems that SHBG in the blood does reflect a genetic susceptibility to developing type 2 diabetes,” Dr. Liu says. “But we now further show that this protein can be influenced by dietary factors such as coffee intake in affecting diabetes risk — the lower the levels of SHBG, the greater the risk beyond any known diabetes risk factors.”

Unfortunately, decaf doesn’t seem to convey the same benefit. Says Goto: “You probably have to go for the octane!”

Wake-up Call

UCLA SCIENTISTS HAVE DISCOVERED a way to “wake up” the immune system to fight cancer by delivering an immune-system-stimulating protein directly into lung-cancer tumors. The new method harnesses the body’s natural defenses to fight disease growth.

The protein, CCL21, is delivered in a “vault,” barrel-shaped nanoscale capsules found in the cytoplasm of all mammalian cells. Pre-clinical studies in mice with lung cancer showed that the protein stimulated the immune system to recognize and attack cancer cells, potently inhibiting cancer growth, according to the study’s co-senior author Leonard Rome, Ph.D., a cell biologist at UCLA’s Jonsson Comprehensive Cancer Center and associate director of the California NanoSystems Institute at UCLA.

The goal of the research, Dr. Rome explains, was to alert the immune system, which has been suppressed in lung tumors, to the presence of the tumor cells, “to have the cancer say to the immune system, ‘Hey, I’m a tumor and I’m over here, come get me!’”

The study was published in the journal PLoS One.

The new vault-delivery system, which Dr. Rome characterized as “just a dream” three years ago, is based on a 10-year research effort. The research focused on using a patient’s white blood cells to create dendritic cells — immune-system cells that process antigens which, when presented to T cells, stimulate an immune response.

The vault nanoparticles containing the CCL21 have been engineered to slowly release the protein into the tumor over time, producing an enduring immune response. Although the vaults protect the packed CCL21, they act like a time-release capsule, Dr. Rome says.

If proven successful, the vault-delivery method would add a desperately needed weapon to the arsenal in the fight against lung cancer. “It’s crucial that we find new and more effective therapies to fight this deadly disease,” says Steven Dubinett, M.D., director of the Jonsson Comprehensive Cancer Center’s lung-cancer program. “Right now, we don’t have adequate options for therapies for advanced lung cancer.”

The researchers plan to test the vault-delivery method in human studies within the next three years. The vault nanoparticle would require only a single injection into the tumor because of the slow-release design, and it eventually could be designed to be patient-specific by adding the individual’s tumor antigens into the vault, Dr. Dubinett says.
**DR. MARIO C. DENG.** The internationally recognized physician and researcher takes the reins as medical director of UCLA’s Advanced Heart Failure, Mechanical Circulatory Support and Heart Transplant Program.

**HILE A MEDICAL STUDENT AT THE UNIVERSITY OF BERLIN IN 1977, Mario C. Deng, M.D., was working the nightshift in the resuscitation center, when his team sought to transfer a dying 45-year-old heart-failure patient more than 5,500 miles to Stanford University, one of only three centers in the world performing heart transplants at the time. The man died before he could receive a new heart, but the experience had a lasting impact on Dr. Deng, who went on to become an internationally recognized leader in the field.**

On April 1, 2011, Dr. Deng arrived at UCLA as medical director of the Advanced Heart Failure, Mechanical Circulatory Support and Heart Transplant Program at Ronald Reagan UCLA Medical Center.

Born and raised in Berlin and Hamburg, Germany, Dr. Deng spent his senior year of high school in Southern California as part of an international-student-exchange program. He returned to Germany for medical school and trained in internal medicine and cardiology. In 1992, he came back to California to complete a postdoctoral fellowship in heart transplantation/molecular cardiology at Stanford University. He then served as medical director of the Interdisciplinary Heart Failure and Heart Transplant Program at Muenster University in Germany before moving to Columbia University Medical Center in New York City in 2000, where he was director of cardiac-transplantation research for more than a decade prior to coming to UCLA.

In Germany, and then at Columbia, Dr. Deng conceived of and pioneered one of the seminal recent advances in heart transplantation, in close collaboration with UCLA and other leading academic U.S. heart-transplant centers: the first FDA-cleared blood test to rule out cardiac rejection, known as the Allomap test. The genomics-based test has greatly reduced the number of invasive cardiac biopsies required by heart-transplant recipients.

Dr. Deng spoke with UCLA Medicine contributor Dan Gordon about his career, his humanistic perspective on patient care and about his vision for UCLA’s Advanced Heart Failure, Mechanical Circulatory Support and Heart Transplant Program.

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**How did the Allomap test come about, and what has its development meant for heart-transplant patients?**

**Dr. Deng:** When I arrived at Columbia University, we asked questions based on work we had done, both at Stanford and in Europe, on the interaction between the immune system and the cardiovascular system. For 30 years, every heart-transplant center had been using heart-muscle biopsy with an invasive heart catheter to rule out heart-transplant rejection. We learned, through a large study involving collaboration among 20 of the largest U.S. heart-transplant centers and a biotech company, Expression Diagnostics in San Francisco, that we could determine the absence of rejection by drawing the recipient’s white blood cells and subjecting these cells to gene-expression profiling with DNA microarray technology, which had become increasingly available during the years before the Human Genome Project was completed in 2001. This finding led to Clinical Laboratory Improvement Amendments approval in 2005 and FDA clearance in 2008 of the Allomap test, which is now used in many U.S. transplant centers to rule out rejection in stable heart-transplant patients coming in for their routine...
follow-up visits. In April 2010, we reported in the *New England Journal of Medicine* that it has led to a reduction of biopsies by at least 25 percent. Besides its scientific merit, this is a major advance from the patients perspective because it is less invasive, i.e., less risky and painful.

**Where is your research focused now?**

**Dr. Deng:** At the invitation of the National Institutes of Health, we are using a similar design to conduct the first pilot studies for a clinical problem that all of us encounter in the advanced-heart-failure population: multi-organ dysfunction syndrome. This syndrome, unfortunately, occurs in very-ill patients in the intensive care units for different reasons, for example, after a very-advanced-heart-failure patient has a surgical intervention such as mechanical-circulatory-support device implantation. A fraction of these patients die without ever leaving the hospital, and no one has a good grasp of how to predict this clinical course before a heart surgery takes place, or even early after surgery but before it becomes a clinical problem. The concept of our work in recent years, just as we did with the Allomap test, is to utilize the information carried by white blood cells to predict if and when this process will occur to alter the impact of the multiorgan-dysfunction syndrome.

All of our studies take place in a framework of systems biology, because the relationship between the white blood cells’ gene products, the organ function and the whole person is not a simple one. It’s translational bench-to-bedside research involving a multidisciplinary team, which is what we assembled in our research lab at Columbia and what we will be expanding at UCLA.

**What drew you to UCLA?**

**Dr. Deng:** There were both personal and professional attractions. For one, my wife, Federica Raia, and I love the Californian spirit of exploration. I grew up in Germany, but at age 16, I was privileged to live in the United States as part of the Youth for Understanding International Student Exchange program. I came to Southern California, was placed with a family, who I consider my American Family, in Garden Grove and graduated from Bolsa Grande High School in 1972.

I went with my American brother to Disneyland and the drive-in movies and surfed, and I fell in love with the culture and the international-cultural-exchange
perspective. Twenty years later, I came back to the United States to train in the sub-specialization of heart failure, transplant and molecular cardiology at Stanford University, where many of the heart-transplantation concepts had been developed. As a result, I associated California with the spirit of exploring novel concepts and testing boundaries.

I knew and had always admired the UCLA organ-transplant and heart-failure program – both its outcomes and its team-oriented approach. Most important, I felt that the vision of the hospital CEO, Dr. David Feinberg, and the medical school dean, Dr. A. Eugene Washington, were well-aligned with mine.

What is that vision?

Dr. Deng: The core of my clinical convictions is that high-tech modern medicine can be practiced in a humanistically sound way only if we empower patients and their families to make decisions, and that we physicians see ourselves not as gods or goddesses – the sole possessors of knowledge and truth – but as consultants in our patients’ decision-making process. I believe that at the center of anything we do in medicine is the encounter between a person who has an illness and seeks professional help and a health professional who has a white coat on but is also a human being. These two meet, and within this encounter everything unfolds. I listen to you as the patient, clearly communicate different options for you based on my expertise and experience, and empower you as the patient to make an appropriate decision, in consultation with your family and other second opinions. I would never say, “Either you have a heart transplant or you will die,” because eventually we all will die, and no matter how white our coat is, none of us can predict with certainty what is going to happen. Everything we do within the specialized field of advanced heart failure – including education, training, translational research and collaboration with other healthcare providers in the region – should take place within the framework of these humanistic, patient-centered values.

How does this patient-centered approach play out in the clinical landscape for advanced-heart-failure patients, in particular, given the shortage of organs available for transplant?

Dr. Deng: Our goal is to recommend to our advanced-heart-failure patients various options in answer to their question: “Doc, which treatment concept gives me the best chance of growing old and living a good quality of life?” I will be working closely with my colleagues in the Ahmanson-UCLA Cardiomyopathy Center, the Ahmanson/UCLA Adult Congenital Heart Disease Center and the Division of Cardiothoracic Surgery to meet the needs of patients along the continuum of heart failure. In the Greater Los Angeles Area, there are roughly 100,000 to 200,000 people with heart failure, and of them, at least 10,000 have advanced heart failure. The number of donor organs for heart transplantation is 100-200 a year, leaving at least 9,800 persons who have to be treated in other ways. Mechanical circulatory support is a rapidly evolving therapy with which I have been intimately involved in Europe long before coming to the United States. Currently, the number of patients with lifetime-assist heart pumps is already similar to the number of patients with a heart transplant. In 10 years, we will probably have a fourth- or fifth-generation device with completely implantable assist heart pumps that stay in the body 10-to-20 years, along with a transcutaneous belt energy transformer and a very low risk of infection. With that advance, similar to the evolution of pacemakers over the last 50 years, another 1,000 to 2,000 of these persons may choose to

“The most rewarding moments for me are those times when I am interacting with my patients in a way that connects us as two individuals – not white coat and patient, but two human beings.”
have a mechanical-circulatory-support device for their lifetime. But many of these individuals may opt to live a life with less aggressive treatment options. For example, in 2008, my American father was 82 and in advanced heart failure, and he was asked if he wanted a lifetime-assist heart pump. After careful discussions and deliberations, he opted to live with his own heart as long as it would carry him. He spent a beautiful holiday season with his family and passed away one week later. That kind of informed-patient preference has to be respected.

How can the program best position itself to be able to meet patient needs and preferences?

Dr. Deng: Obviously, if someone opts to have a heart transplant, UCLA – with a tradition of more than 25 years and having recently been ranked by the U.S. government as the nation’s top-quality heart-transplant program – must continue to deliver world-class outcomes through its clinical teams, as well as continue to be a leader in discovery through its basic-science teams. We will also be rapidly expanding our lifetime-mechanical-support program to offer more options for people who make that choice. Assist heart pumps are moving rapidly from bulky, crisis-intervention treatments toward small, completely implantable devices that allow patients to return to a fairly normal life. We will take on the challenge to develop a network with community cardiology providers who are an integral part of a lifelong-care continuum for these patients after their devices are implanted.

And finally, if after being evaluated, patients opt to have a less-aggressive treatment plan, as my American father did, we need to provide what is usually termed palliation care. What it really means is a focus on quality of life not just at the end of life but during the entire continuum of the illness, in conjunction with the family and community, as part of a broader vision.

We also have a responsibility to play a leadership role in creating what the current administration and healthcare discourse has termed accountable healthcare organizations. The outcome measure should not be how many transplants we do or how many assist devices we implant. Instead, it should be how these 10,000-to-20,000 patients in the region with advanced heart failure are treated in an evidence-based-medicine way that respects their personal choices, their humanity and their dignity. Part of this vision for our program at UCLA is that we will be working very closely with cardiologists, primary-practice offices and community hospitals in the Greater Los Angeles Area and beyond, guaranteeing their indispensable active role and responsibility in the healthcare continuum. That’s a vision that should be owned not just by UCLA but by all of us who provide care in the region.

Reflecting back to when you were first starting in this field, what are the most striking advances that have been made?

Dr. Deng: Starting with the development in medical therapies, there has been a more complete understanding of what the dysfunction in heart failure is about – not seeing it only on the isolated organ level, but also taking the person as a complex, dynamic system and treating him or her accordingly. The field of mechanical circulatory support has been rapidly advancing over the last 20 years. We have moved to more evidence-based, less-invasive types of assist heart pumps that are smaller, more durable and allow the patient much more freedom to move about. And finally, in heart transplantation, I think one of the most important advances is the introduction of non-invasive monitoring based on molecular white blood cell gene-expression testing. Not only does this procedure expose patients to fewer of the invasive heart-muscle biopsies, but now we are also using this gene-expression profiling approach to safely down-titrate immunosuppression therapy, thereby reducing their side effects.

Where do you derive the most personal satisfaction from your work in this field?

Dr. Deng: To have had the underlying vision and to have been intimately involved with the implementation of the first-in-history genomic heart-transplantation test is certainly very rewarding. But the most rewarding moments for me are those times when I am interacting with my patients in a way that connects us as two individuals – not white coat and patient, but two human beings. This interaction is the spirit in which we must conduct our high-tech modern medicine.

“The core of my clinical convictions is that high-tech modern medicine can be practiced in a humanistically sound way only if we empower patients and their families to make decisions, and that we physicians see ourselves ... as consultants in our patients’ decision-making process.”
At 2:55 in the afternoon on March 5, 2011 – one of those lovely sun-washed days in Los Angeles – Emily Fennell moves the index finger of her right hand. This wouldn’t be remarkable if not for the fact that just hours earlier Emily had no right hand at all.

But now, 16 hours after she was wheeled into O.R. 12 on the second floor of Ronald Reagan UCLA Medical Center, Emily has a new right hand of flesh and bone, with five long, slender fingers, and the hope of recapturing a more normal life. And with that slight, almost imperceptible stirring of her finger, Emily Fennell, a 26-year-old mother from Yuba City, California, becomes a part of history as the first patient in the Western United States to receive a hand transplant. And UCLA makes history as the first hospital west of the Rockies to perform the landmark surgery.

Gathered around Emily’s O.R. bed before she is brought back to her room in ICU for recovery, the surgical team that began its labors in the darkness of a Friday night and has concluded them in the light of a Saturday afternoon appears to be in awe. Nick Feduska can’t peel his gaze from her right hand, which is sheathed in a thick wrap of white gauze and bandage with just the fingers, slightly curled, exposed.

“It’s beautiful,” says the organ preservationist for the fledgling UCLA Hand Transplant Program and a member of the recovery team that flew by helicopter to San Diego to procure the donor limb. The match is uncanny; the size and shape of the hand, the taper of the fingers, the skin tone and even the hair pattern are so close to Emily’s own hand that the new limb already seems to wholly belong to her.

“It looks great,” Feduska murmurs. “It just looks great.” His eyes, like those of many others now drawn together around Emily, are brimming with tears.

Kodi Azari, M.D., is a dedicated surgeon and scientist, but he becomes lyrical when he speaks of the hand – an organ of both delicacy and strength that is capable of painting a masterwork, playing a musical instrument, picking up a tiny pin or wielding a sledgehammer. “There is something magical about the hand,” he says. Not only do we use it to touch and feel, but also to see and to express ourselves and communicate with others. “I am not a religious man,” Dr. Azari continues, “but if there is an argument for creation, it is the hand. It makes no sense to me that something as exquisite as this could have been formed by just random chance.”

The human hand is as complex as it is elegant. Wrapped tightly within that small package are 27 bones, 34 muscles to move the fingers and thumb, 48 named nerves, dozens of blood vessels and more than 100 ligaments and tendons. With all those moving parts, transplanting a hand is a highly intricate and technical procedure that requires a large team of specialized surgeons. For Emily’s operation, the O.R. team assembled by Dr. Azari, the surgical director of the UCLA Hand Transplant Program, numbers 19: nine surgeons with expertise in hand, orthopaedic and plastic surgery, four nurses, two assistant nurses, two technicians, one orthopaedic technician, two operating room assistants, one perfusionist, two cardiothoracic nurses, and one anesthesiology nurse.
surgery; three anesthesiologists; four nurses; an O.R. technician, a preservationist and a transplant coordinator.

All surgery carries risk, and this operation will be particularly lengthy. But the greater risk comes from the immunosuppressive medication that Emily must take for the rest of her life to prevent rejection of her new hand. Though rejection has not proven to be a significant problem in past cases, it remains a primary concern, says Sue McDiarmid, M.D., a transplant specialist who was instrumental in conceiving the UCLA Hand Transplant Program and now is its medical director. When Emily was first being considered for the program, Dr. McDiarmid laid out all the potential consequences of immunosuppression: the possibility of renal failure, hypertension, liver damage, elevated cholesterol, ulcers.

“I think I scared the living daylights out of her,” she says. In truth, Emily appreciated Dr. McDiarmid’s frankness. “She wasn’t just selling the program. She really cared about me as a patient and that I have all the information necessary to make my decision,” Emily says.

Emily also benefits from the fact that she, unlike the majority of transplant patients, is young and very healthy. “She is an ideal candidate,” Dr. McDiarmid says. “She has a terrific support system. She is very together medically, emotionally, family-wise, support-wise, and she seems to have the ability to achieve this balance in her life in spite of what obviously was a horrendous event for her, the loss of her hand.”

Once the operation is complete, the first post-surgical measure of success is whether or not the graft survives. After that, Dr. Azari says, “we will be judged on how much function and sensation returns.” Function – the ability to move and use the hand – is the first to return. Because the tendons in the new forearm and hand, which are like cables to deliver movement, are attached to those embedded within the patient’s existing arm, the capability for gross movement – wiggling the fingers or bending the wrist, for example – is almost instantaneous, though return of strength and function to the small, intrinsic muscles that enable fine movement takes much longer.

Sensation returns more slowly. Reinnervation, the restoration of nerve function, progresses at about 1 millimeter a day, Dr. Azari says. At that rate, it can take 12-to-18 months to reestablish a good level of sensation in the new hand.

UCLA’s hand-transplant program is the fourth in the country, and the first in the Western United States. The others are in Louisville, Kentucky; Atlanta, Georgia; and Pittsburgh, Pennsylvania, where Dr. Azari participated in four of the previous 12 hand transplants that had been done in the country. The first successful hand transplant was performed in 1998 in France, and more than 40 have been done worldwide.

Limb transplantation is a still-experimental new frontier in medicine that involves composite tissues. Unlike a liver or a kidney, which has a more homogenous tissue composition, the hand is bone and nerve and tendon and muscle and skin and blood vessels, and each has its own characteristics for healing and regeneration. “Since UCLA is one of the premier transplant programs in the country, it is natural for us to start doing composite-tissue transplantation,” says Ronald W. Busuttil, M.D., Ph.D., executive chair of the UCLA Department of Surgery and a groundbreaking liver-transplant surgeon.

When he and Dr. Azari brought the idea of establishing such a program to the UCLA Health System’s leadership, it was immediately embraced. “I’m trained as a psychiatrist, so I wait until people finish their sentence before responding,” says David T. Feinberg, M.D., M.B.A., CEO of UCLA Hospital System. “Had I not been trained like that, I would have said ‘yes’ before they finished their sentence. The answer was, ‘Of course!’”

That decision was not without some cost; because
the procedure is experimental, it is not covered by insurance, so funds were secured from both within the health system and from outside sources to establish the program and to cover the first several participants.

In addition, embarking on such a program involves both ethical and economic concerns. Is it okay, for example, to potentially turn a healthy and well-adapted amputee into a transplant patient at risk for serious illness from a lifetime of immunosuppressive medication? What about the issue of identity? Would the recipient of a transplanted hand identify the limb as “self,” or would it create conflicts in identity? Is the cost of hand transplantation appropriate, given today’s constrained healthcare resources? After lengthy consideration and discussion with the principal physicians, members of the UCLA Ethics Committee were satisfied that all such concerns were being addressed.

At around 9:30 Friday morning, Lifesharing, a non-profit organ- and tissue-recovery organization for San Diego and Imperial Counties, notifies UCLA that there is a potential donor. E-mails and telephone calls fly back and forth. Is it a good visual match? Will the donor’s family consent? How soon can Emily be in Los Angeles? By early Friday afternoon, an e-mail message announces: “It’s a go!”

Emily is at work when she receives the call on her cell phone from Erin Core, the transplant coordinator, telling her there is a donor. Upon hearing the news, she bursts into tears. Emily calls one of her two sisters, Andrea, crying into the phone, “They have a hand!”

After a flight from Sacramento to Los Angeles, Emily and Andrea arrive at the front entrance to Ronald Reagan UCLA Medical Center at around 6:15 p.m.

While Emily is in the ICU to be prepped for surgery, Dr. Azari, Drs. Scott Mitchell and Tristan Hartzell, Feduska and Core take an elevator to the hospital roof, where a helicopter is waiting to fly them to San Diego to recover the donor limb.

A few hours later, the recovery team has completed its work. It is now time to bring Emily to the operating room. As she is rolled in her bed down the long corridor to the O.R. suites, Emily’s mother, Kim Herman, who arrived at the hospital shortly after her daughters, and Andrea follow. The procession stops at the red line on the floor, beyond which family cannot pass. It is the moment for Kim and Andrea to say good-bye. Each leans over to wrap Emily in a long, tight hug. The medical team has assured Emily that even at this stage, she can still change her mind about the surgery. “Are you sure?” Kim asks very softly. “Yes,” Emily responds. “I’m sure. I’m scared, but I’m sure.”

As Emily is undergoing further preparation, Dr. Azari and the procurement team enter the O.R., trailing a blue plastic cooler on wheels that contains the donor limb. “It went super well,” Dr. Azari says. “It could not have been better. The hand is, I think, perfect. We’re very excited.”

Shortly after, Emily is sedated. Dr. Azari opens the cooler, digs his hands into the ice and lifts out the limb that will become her new hand. It is wrapped in blue cloth and gauze. Once removed from its swaddling, the limb, which is small and delicate, with a yellowish cast, is placed palm-up on a steel tray that has been covered in a layer of ice and a slate-blue towel saturated with

IN THE O.R.
Left: The surgical team preps Emily for the surgery to transplant a new right hand. The operation, which begins at one minute before midnight, will take more than 24 hours to complete.

Right: Dr. Kodi Azari, surgical director of the UCLA Hand Transplant Program, completes reattachment of the tendons in Emily’s new hand. The next step will be to re-establish the blood flow.

To read more about Emily and her post-transplant recovery, and to view a slideshow of images of Emily and her surgery, click on the link to this story at: www.magazine.uclahealth.org
The Team

As Kodi Azari, M.D., surgical director of the UCLA Hand Transplant Program, notes, “No single person can do this by himself. It requires an enormous group of people who are dedicated, willing and believe in the mission. Without everyone giving 100 percent, this would not be possible.” His team in the O.R. for the first hand-transplant surgery performed at UCLA numbered 19. They were:

Surgeons
Kodi Azari, M.D. (hand surgery, orthopaedic surgery and plastic surgery)
Prosper Benhaim, M.D. (hand surgery, orthopaedic surgery and plastic surgery)
Christopher Crisera, M.D. (plastic surgery)
Jaco Festekjian, M.D. (plastic surgery)
Tristan Hartzell, M.D. (hand surgery, orthopaedic surgery and plastic surgery)
Timothy Miller, M.D. (plastic surgery)
Scott Mitchell, M.D. (hand surgery, orthopaedic surgery)
Roee Rubinstein, M.D. (hand surgery, orthopaedic surgery and plastic surgery)
Charles Tseng, M.D. (plastic surgery)

Anesthesiologists
Neesa Patel, M.D.
Randolph Steadman, M.D.
Bita Zadeh, M.D.

Nurses
Kristine Alessandrini, R.N.
Andrew Aybar, R.N.
Donna Russel-Larson, R.N.
Anna Wang-Matheson, R.N.

Transplant Coordinator
Erin Core

Organ Preservationist
Nick Feduska

O.R. Technician
Marco Rueda

For more information about the UCLA Hand Transplant Program and to view videos about the program and UCLA’s first hand-transplant surgery, go to: www.handtransplant.ucla.edu

Emily lost her hand on June 11, 2006, when a car she was riding in rolled over as the driver tried to avoid another vehicle that turned in front of them on a street in Inglewood, California. When the car started to tumble, Emily put her right arm up to brace herself, but her hand went out the open sunroof and was trapped between the top of the car and the roadway as the vehicle slid upside down. It was, in Dr. Azari’s words, “a complete degloving injury.” Emily’s hand was so badly mangled that surgeons at UCLA, where she was taken, had to perform a surgical reduction, in which the surgeons’ fingers chilled and aching as they work.

At one minute before midnight Friday, Dr. Azari makes the first long incision along the inner forearm of the donor limb. The surgery has begun. Two surgical teams work simultaneously, one to prepare the donor limb and the other to ready Emily’s arm to receive her new hand. For both teams, the task is essentially the same: dissect the limbs to reveal, identify and preserve the important internal structures – the bones, tendons, blood vessels and nerves – that must be connected to successfully accomplish the transplant.

Chatter in the O.R. is minimal. “How’s it looking, Prosper?” Dr. Azari asks the team working on Emily’s forearm at 12:45 a.m. “Veins okay?” “We have two really nice ones,” responds Prosper Benhaim, M.D., the lead surgeon working on Emily. “I can’t tell you how happy that makes me,” Dr. Azari says.

It is a slow, laborious process. After each structure is revealed and carefully trimmed away from the surrounding tissue, a small piece of blue cloth marked in indelible ink with an identifying abbreviation is sutured on: FDPs (flexor digitorum profundus tendon to the small finger); BV (basilic vein); PL (palmaris longus tendon), and so on. These bits of cloth are essential; when it is time to join the donor hand with Emily’s arm, they will ensure that the corresponding structures can be correctly matched and sewn together. The surgeons will tag 23 tendons, two arteries, four veins and three nerves.

By 3 a.m., the dissections of both the donor limb and Emily’s arm are completed. The bones of the donor forearm are then cut, so the length of Emily’s two arms will match. A pair of teal-green titanium plates are screwed onto the ulna and radius bones of the donor forearm and, after fluoroscopically confirming the positioning of the plates, the limb is carried across the table where Emily lies. The donor limb and Emily’s arm are aligned, and the surgeons screw the plates down onto Emily’s bones. At 4:30 a.m. – 4½ hours after the operation began – Dr. Azari lifts Emily’s arm with the now-joined donor limb and announces, “Emily has a new hand.”

There are still 10 hours to go before the surgery is finished.

A new hand, it is necessary to keep the hand as cold as possible throughout the procedure to minimize degradation of the tissues – an environment that leaves the surgeons’ fingers chilled and aching as they work.
no choice but to amputate about 1-1/2 inches proximal to her wrist. Neither the driver nor another passenger in the back seat was seriously injured.

On the underside of Emily’s left forearm is a tattoo that reads “Believe.” “After I had my accident, I just had to believe that I could get through it,” she says, scratching the ears of her white Lab, Duke, and talking on the back patio of the house in Yuba City that she and her 6-year-old daughter share with Emily’s father, Danny. She could have made another choice – “Woe is me, take drugs the rest of my life and be high and become the kind of person that nobody wants to be around;” she says – but instead, she recognized that “I was alive, I would still get to see my daughter grow up, I could still live my life.”

Before her accident, Emily was right-handed. Though she was fitted with both a myoelectric prosthetic hand and a traditional “hook,” she found them uncomfortable and awkward to use. With therapy, she learned to do everything with her left hand: groom herself, dress and tie her shoes, cook, write, drive, type (45 words a minute, fast enough to hold a job as an office assistant), and perform the basic skills necessary to take care of her child.

But she can’t put her hair in a ponytail. She can’t teach her daughter how to tie her shoes. She can’t ride a jet ski or snowboard. She can’t cut her food. “It’s been the little things that I think have been the hardest to overcome,” Emily says. And she can’t improve her typing enough to advance to the next level in her work to better support herself and her child.

So she must “Believe,” and she has faith that she can overcome this next trial as well, first the surgery and then the long post-surgery therapy – six days a week, three-to-six hours a day – and the years of ongoing rehabilitation. “If you believe you can get through something that is difficult, then you can,” she says.

The first connections Dr. Azari makes are the tendons. “It is one of the hardest parts of the surgery,” he says. The challenge is to establish the right tension and balance. If the tendons are too tight, Emily will have difficulty curling her fingers and closing her hand. If they are too loose, her fingers will be floppy. Getting it right “is an art,” Dr. Azari says. As he and Dr. Benhaim work, splicing and weaving the tendons together before suturing, they are assisted by Dr. Hartzell and Roe Rubinstein, M.D., and as they progress, they periodically stop to curl and flex the fingers to evaluate the quality of their connections.

By 8 a.m. Saturday, they are done with the tendons, and it is time to connect the blood vessels – first the veins and then the arteries. Working with a magnifying scope, microsurgeons Christopher Crisera, M.D., Jaco Festekjian, M.D., and Charles Tseng, M.D., skilfully manipulate and stitch the small vessels together. Once connection of the veins is completed, it is time to establish blood flow to Emily’s new hand.

Connection of the first artery is a milestone; it is finished at 9:39 a.m., and the tourniquet that has been restricting the circulation to Emily’s arm throughout the surgery is released and blood again flows through her vessels. As the blood courses through the newly connected artery into the donor hand, which has been without blood for more than 12 hours, it warms and slowly turns from a dull, lifeless pallor to pink and takes on the appearance of a living hand. The surgeons then connect the second artery. A Doppler is attached to Emily’s arm, and the whoosh-whoosh of blood flowing through her arm and new hand can be heard throughout the operating room. Finally, the nerves are connected. By 1:30 p.m., the skin flaps have been closed in an elongated zig-zag incision line. Drain lines are inserted and sewn into place, and final closures are made.

It is 2:30 p.m. More than 14 hours after Dr. Azari made the first cut, the surgery is over.

As Emily slowly emerges from anesthesia, Erin Core, the transplant coordinator, stands at the head of her bed. She asks Emily if she can see her new hand and then gently lifts Emily’s head so she can look. Though she is still very groggy, Emily casts her eyes down to her right arm. “Can you see it?” Core asks. Emily nods slightly. “Thumb,” she says. A few moments later, in response to Core’s encouragement, she moves her finger for the first time.

Upstairs in the ICU a short while later, Kim stands outside her daughter’s room as the nurses settle Emily back in following surgery. As Kim watches, she struggles to stay calm. “When you are about to become a mother,” she says, “one of the things that you hope for is that your baby will have all her fingers and all her toes.” Kim’s composure suddenly fractures. She presses her fingers to her lips and her eyes moisten. “Emily lost that. But now she has all her fingers and all her toes,” Kim continues, her voice choking as she looks at her child lying in bed with her new right hand resting beside her. “I’m so grateful. Now she has that back.”

David Greenwald is editor of UCLA Medicine.
Foreign Exchange

BY JUSTIN BERGMAN  X  PHOTOGRAPHY BY JAMES BOLLEN
BY PARTNERING WITH AN UP-AND-COMING MEDICAL SCHOOL IN CHINA,

UCLA HEALTH SYSTEM ELEVATES ITS INTERNATIONAL PRESENCE AND

BOOSTS ITS COMPETITIVENESS IN TODAY’S GLOBAL HEALTHCARE MARKET.

PUSHING DOWN THE HALL of the Second Affiliated Hospital of Zhejiang University School of Medicine wearing white lab coats and clutching computers, Qian Huan and Hu Wen look like the type of serious, hard-working medical students who are about to graduate and begin their careers as doctors. It’s only when they begin recounting their 10-week exchange program at Ronald Reagan UCLA Medical Center last year that they start to giggle like teenagers, even when describing the endless hunt for housing near campus.

“Renting an apartment in L.A. can be a nightmare,” says Qian, a 25-year-old dermatology major, sounding as world-weary as someone who has lived in Los Angeles her whole life. “So we tried to walk every street around campus. That was tough.”

On the day before they were to begin their rotations, Qian, Hu and their four classmates from Zhejiang University finally found a house. “It was quite near the hospital, so we can walk there in 10 minutes and we can stay up late,” says Qian, trailing off into more giggles. “All around us were fraternities, so that was quite new to us.”

Of course, this wasn’t a typical foreign-exchange program that’s more about the partying than it is the classes. The visit by the Zhejiang University students, all of whom are fluent in English and at the top of their class, was part of a much broader and more involved collaboration between UCLA and Zhejiang (pronounced JEH-jee-ahng) University in the eastern Chinese city of Hangzhou that could become the model for other universities seeking to bridge the educational and medical-research gap between the U.S. and China.

Driven by the mutual desire to boost their competitiveness in a rapidly globalizing healthcare industry, the two schools formed a partnership several years ago that sought to connect not only the academic sides of their institutions, but also the clinical functions of their hospitals. For Zhejiang University, the goal was simple: to improve its curriculum and hospital standards so it could one-day join the elite club of the world’s best medical universities and healthcare systems. “We believe that through a collaboration with such a world-class university as UCLA, it can bring our level up and improve our hospital to be a world-recognized hospital,” says Wang Jian-an, M.D., Ph.D., president of the Second Affiliated Hospital. “Bit by bit, we can
change our behavior and style of thinking and how to work and make us synchronized with the world.

UCLA had a very different motivation; it felt that in order to remain relevant in the new global order, it would need to start looking outward in a significant way. “The great medical schools of the 21st century are going to be international,” says Tom Rosenthal, M.D., chief medical officer for UCLA Health System. “In 20 years, we’re not just going to be competing to be among the top five or top 10 in the United States, we’re going to be competing to be one of the top five or top 10 in the world, and you’re not going to achieve that without having international presence.”

FORMING THAT PRESENCE IN HANGZHOU had as much to do with personal connections as with strategy on UCLA’s part. Zhejiang University, located on a sprawling campus of tree-lined boulevards and modern high-rises built on farmland outside the city, has one of China’s top engineering programs, but it has not especially been known for its medical school, which it only acquired 12 years ago. Since the merging, the medical school has been evolving and improving. UCLA’s engagement with the school began in the mid-2000s with one of UCLA’s professors of molecular and medical pharmacology, Ren Sun, Ph.D., who was born in Hangzhou. After arranging a few student exchanges with Zhejiang University, Dr. Sun met with the then-president of the university, Pan Yunhe, who had been an exchange student at UCLA himself in the 1980s, and they began discussing the possibility of Zhejiang University using UCLA’s curriculum to train its students. Before settling on the partnership with Zhejiang University, however, UCLA did reach out to the top medical schools in China to gauge their interest in collaborating. The response was surprising. Other schools showed little interest, perhaps because they were not inclined to change their systems, but Zhejiang University had signaled its desire right away, Dr. Rosenthal says. “There was a lot of enthusiasm of how a relationship with UCLA could enhance what they were trying to accomplish in their schools and hospitals and in their city,” he adds.

Specifically, Zhejiang University wanted to revamp the entire way of learning at its medical school. The traditional educational model in China is based on rote learning: Students memorize the lessons in their books and their lecture notes and then regurgitate the information on their exams. There is very little room for creativity or interaction with one another.

The UCLA system, by comparison, is centered on problem-based learning (PBL). In addition to attending lectures, students are given a specific problem or case that they are tasked with solving, so they have to “go out (and) acquire the knowledge rather than the knowledge being downloaded in the classroom to the student,” Dr. Sun says. “That is fundamentally different from the education philosophy and the methodology in China.” The Chinese were also impressed by UCLA’s integrated curriculum, in which individual courses like anatomy and biochemistry have been replaced by three-to-12-week “blocks” of related subjects, such as a grouping together of the respiratory, renal and cardiac systems.

Considering the magnitude of adopting UCLA’s entire curriculum, Zhejiang University devoted several years to the project, sending batches of professors to UCLA for two-month stints to participate in lectures and experiments and observe problem-based learning in action.

“They rented a few apartments in Westwood, and one group would trade out for the next group,” says LuAnn Wilkerson, Ed.D., senior associate dean for medical education in the David Geffen School of Medicine at UCLA. “Our courses occur one block at a time, so they could really concentrate on how everything in this course fits together. So by the end of the year, they had site-visited the entire curriculum that they wished to adopt.”

When they returned to China, the professors began translating the curriculum and making necessary adjustments, moving certain courses up in the schedule, for instance, to accommodate the different educational backgrounds of the Chinese students, says Xia Qiang, M.D., Ph.D., chairman of the Department of Physiology at Zhejiang University and one of the professors who visited UCLA. Then, after training other faculty in the new approach, the system was implemented in the fall of 2009. Dr. Xia says they are already seeing the results: On exams in February, the students using the new curriculum outperformed students learning in the traditional method by a sizeable margin. “It is very encouraging,” he says.

“PBL is very effective in learning, especially in medical education, because it can stimulate the students to learn by themselves,” he adds. “It’s actually an intrinsic, driving force to promote students to study. They just want to study more.”

That’s an easy claim for an administrator to make, but the students say as much themselves. “There’s teamwork – we solve problems together,” says Liang Luo, a 25-year-old in the sixth year of the medicinal-school program. “If we had to do this one by one, all by ourselves, it would be difficult. And we can learn from each other in the process. It’s a motivation for learning.”

Her classmate, 25-year-old Zhou Yijiang, says that although the
students still have a limited number of lectures each week, they are always related to the PBL sessions, creating a better overall educational experience. “We are combining the new way and the old way,” he explains. “The old way still exists, but with the adding of PBL, we can learn in the big classes more efficiently and in a more goal-oriented way.”

Zhejiang University officials realize, however, that there is only so much that can be taught in the classroom, which is why the collaboration also includes on-the-job training in U.S. hospitals for the lucky few chosen to participate in the 10-week UCLA exchange program. One of the elements of the UCLA educational system that’s been hardest to export to China is the focus on developing doctor-patient relationships. “That’s a very important and critical reason why we want to work with UCLA, to change the behavior and working style of our doctors,” says Dr. Wang. “However, this cannot be done in one day or one week, just by one visit or two visits. It’s a long-term thing, and it needs to be changed gradually. That’s why we want to send our students there.”

Hu Wen, one of the students who went to Los Angeles last year, says she was struck by the level of interaction between doctors and patients in the U.S. “When we’re in the clinic in your country, first the patient is seen by the resident, then the resident goes to the attending and then they go back together to see the patient again,” she says. “But here, we don’t have that much time. Our GI doctor sees almost 100 patients in one day.”

“Patients in the U.S. know their diseases a lot better, too,” adds her classmate, Qian Huan, the dermatology student. “They do research before they see the doctor, so they can tell him or her their symptoms and the names of their drugs. But here, doctors have to spend a lot of time educating patients. Sometimes we don’t have so much time.”

CHINESE HOSPITALS ARE INDEED CHAOTIC PLACES. On a recent Wednesday at the Second Affiliated Hospital of Zhejiang University, dozens of people jostled in line to pick up their medicine at the pharmacy, while others waited in queues to register or pay for their visits. Some patients carried suitcases and were accompanied by family members, a sign they’d traveled great distances to see a doctor and would camp out in the hospital until they received treatment. High-tech machines helped alleviate some of the confusion. In one corner, patients scanned the receipts from their doctor visits into machines that would instantly spit out the results of their exams. Another touch-screen monitor provided short bios on all of the specialists, directing patients where to find them.

Chen Gongxiang, Ph.D., the director of the hospital’s Center for Clinical Laboratories, says the Chinese healthcare system faces two main challenges: the sheer number of people demanding better treatment in the country and a lack of resources and training to provide that kind of quality care. After Zhejiang University’s medical school began working with UCLA to improve its curriculum, Dr. Chen says it was only natural for the Second Affiliated Hospital to form a partnership with Ronald Reagan UCLA Medical Center to try to address the latter problem and bring the level of its care up to U.S. standards, as well.

Sensing an opportunity to someday forge a more symbiotic relationship with Zhejiang University, UCLA agreed to share its expertise, starting with the development of a joint diagnostic center. Operational since last October, the center has already helped Zhejiang University doctors diagnose some 100 cases. The system is remarkably fast, given the technological hurdles that needed to be overcome. After a doctor in Hangzhou digitizes the patient’s specimen slide, it is sent electronically to UCLA, where a pathologist reviews the case and either makes a diagnosis or sets up a teleconference with the Hangzhou doctor to ask further questions or request additional tests. The aim is to finish the job in three days. “All the treatments, remedies, therapies start from the diagnosis. If you have a correct diagnosis, then you can have better treatment,” says Dr. Chen. “For the Chinese doctors, they’ll have more opportunities to learn U.S. ways, U.S. systems, and they can change their habits of working and improve their skills.”

For UCLA, the hope is for a future collaboration with the Second Affiliated Hospital in clinical research and perhaps in the future, even a joint venture, says Dr. Sun. The Chinese government recently relaxed its rules on foreign investment in government-run hospitals, allowing overseas hospitals to invest more capital in joint ventures and set up their own wholly owned private hospitals on a trial basis. “Once diagnosis (at Zhejiang University) is standardized according to American standards, then we can expand into clinical research. And then we can expand into clinical service,” Dr. Sun says.

“Someday we might build a hospital together with a partner, with Zhejiang University,” he continues. “That’s our goal. We’re moving toward that direction.”

Eventually, UCLA would also like to expand this type of partnership elsewhere in China and other Asian countries. “We’ve got a couple of other institutions that have expressed interest in having this kind of relationship,” says Dr. Rosenthal. “The next thing would probably be to see if any of the things we are doing in Hangzhou are exportable to other places, to see what part of what we are doing is franchisable.”

But that could be far down the road, Dr. Sun notes. The first priority is to develop a functioning model. “Once we work out the ins and outs with one university, we can expand it. But at this moment, we’re concentrating on one place to make it work well. And then it will have a significant social impact for people on both sides.” ●

Based in Shanghai, China, Justin Bergman is a correspondent for the British magazine Monocle and a regular contributor to TIME, China Economic Review and The New York Times.
When Ronald Reagan UCLA Medical Center opened in the spring of 2008, it was among the most sophisticated medical facilities of its kind, an architectural wonder heralded as the first in a new era of modern and technologically advanced teaching hospitals.

But for all the change embodied in the move from the aging Center for the Health Sciences structure to the contemporary facility across the street, it’s the initiatives that have either begun or accelerated since the move that are fundamentally transforming the patient experience, both at Ronald Reagan UCLA Medical Center and its sister facility, Santa Monica-UCLA Medical Center and Orthopaedic Hospital.

Driven by factors both external and internal – from the national imperative to deliver more cost-effective care and new restrictions on medical-resident work hours to a determination by the leadership of UCLA Health System to improve the patient experience – the hospitals have instituted changes designed to create a more integrated and purposeful system.

A newly created department is devoted to ensuring clear care strategies, prompt discharges and appropriate post-discharge planning. Interdisciplinary rounds have dramatically improved communication across the healthcare teams and with patients.

The increased use of hospitalists – physicians who specialize in inpatient care – has improved coordination and communication, reduced fragmentation of care and filled a void created by the lower number of hours residents can be on duty.

It is all adding up to a smoother system and a better experience for patients – a result that can be seen clearly in satisfaction rankings, which in only a few years have jumped from the 37th to the 98th percentile in an independent comparison of hospitals across the nation.

“We recognized that if we wanted to continue to thrive in today’s environment, we needed to improve the patient experience and use our resources as efficiently and effectively as possible,” says Tom Rosenthal, M.D., chief medical officer for UCLA Health System. “And to do that, we had to take a much more systematic approach to services within the hospital.”

Medicine has, until recently, largely resembled a cottage industry, with individual physicians responding to their patients’ needs and referring to specialists and subspecialists when a patient’s illness is beyond their expertise. “Even at a large hospital such as ours, most doctors worked fairly independently,” says Jan Tillisch, M.D., executive vice chair of the Department of Medicine in the David Geffen School of Medicine at UCLA. But particularly in the last decade, Dr. Tillisch notes, there has been a growing recognition that the
patient’s system-wide needs should be addressed, and that a multidisciplinary team of individuals should implement their care.

“When you come to UCLA, whatever your illness, it should be addressed in a way that reduces duplication and competition among alternative forms of therapy, and gives the patient the best access in the most efficient way,” Dr. Tillisch says.

“A system means you have a primary doctor who understands the priorities for that patient’s health but can also be educated by subspecialists as to what the patient needs, with strong communication and easily accessible information that everyone shares. We have begun to develop this type of integrated system, with more people involved and responsibilities distributed more widely.”

Under the banner of the UCLA Operating System, the hospitals have empowered performance-excellence teams, as well as outside consultants, to help implement process-improvement initiatives modeled after Toyota Lean production methods. The wide-ranging efforts aim to better organize the delivery of services and bolster communications across the healthcare team, as well as with patients. “Lean is a culture – it’s about engaging staff in eliminating waste and improving performance, so that everyone is looking at new and better ways of doing things,” says Douglas Gunderson, executive director of Operative Services and interim director of Performance Excellence.

Initiatives implemented by the performance-excellence group have included a “time out” before every procedure during which the healthcare team members validate that they are undertaking the right procedure with the right patient and know their role, and any questions or concerns can be raised and addressed. The group has analyzed how patients move from the emergency department to hospital beds to discharge, finding ways to improve the flow and ensure smooth transitions through better coordination. Closer scrutiny of supply needs has led to $10 million a year in cost savings without compromising care. A program called “C-I Care” trains all hospital staff in how to interact with patients in ways that show respect, ensure privacy and keep patients and their families informed of the care plan.

“We now have a comprehensive system that aligns our mission, vision and values to performance at the point of care,” says Gunderson. “We have metrics that allow us to track how we’re doing and see where we need to be more effective. Members of the staff are very open about opportunities to address problems, and are working together to improve performance. It’s been a very positive cultural change.”

That imperative led to the building of a care-coordination department to support the physician and nurse teams around transitions of care both within the hospital and out of the hospital. The department’s nurse case managers and social workers work with the care team on each hospital service to establish and coordinate the target date and plan for discharge, identify any barriers, and help facilitate a plan of care to ensure that proper steps are taken to meet the goals. Social workers help families with decision-making and potential conflicts, and link them to community services.

Last year, a consulting group, Stockamp, was brought in to work with both the Westwood and Santa Monica hospitals on the issue of patient progression – how to appropriately move patients through the system to avoid bottlenecks and ensure their stay isn’t any longer than necessary. The effort touched key hospital services such as transportation and patient placement (assigning patients to the right bed on the right service at the right time), as well as care coordination and the structure of patient-care rounds. The consulting group also introduced a new database system – metrics that the hospitals use to ensure proper patient progression.

“We have become much better at communicating with one another, identifying the status of any given patient and informing patients and families when we expect to discharge them, which is very important,” says Marcia Colone, Ph.D., director of care coordination for UCLA Health System. “With good communication we all have the same focus and priorities, which has a direct effect on both quality and satisfaction.”

MAJOR CHANGES HAVE ALSO TAKEN PLACE in the structure of the rounds on which these discussions occur: They are more systematic than in the past, and they are now interdisciplinary.

The challenges in the daily coordination of care have become increasingly intense in recent years for two major reasons, Dr. Rosenthal notes. First, given the growing number of health services that can be provided on an outpatient basis, patients who are hospitalized are much sicker than in previous times.

The difficulties in managing these complex cases have been compounded in recent years by the restrictions on residents’ work hours. “It used to be you’d have a team of residents taking care of patients, with oversight from an attending physician,” Dr. Rosenthal explains. “They were the glue – they coordinated all of the care, and there were no handoffs necessary because it was basically the same doctors 24/7. With resident-work-hour restrictions, they began changing shifts more often and sometimes working only a week at a time, and that has increased the chances for daily care to become disorganized.”

One of the responses has been to formalize the way nurses and physicians communicate with each other on a daily basis. “In healthcare, there has always been some kind of rounding by each service, but on the acute-care floors it tended to be haphazard,” says Cathy R. Ward, R.N., D.N.Sc., UCLA Health System’s director of nursing. “The doctors would come through and see the patient, and they might not even see the nurse to have a coordinated discussion about the care.”

As patients’ acuity has increased, Ward contends, so has the need for
good communication. “There is a lot of evidence that says the better communication and collaboration you have amongst the team, the better the outcomes will be,” she says. “There are so many things that have to get done during a patient’s stay, and often the nurses weren’t aware of the plan. When all team members are hearing the same thing, they can act right away.”

Now each service runs its own version of a program called Every Patient Every Day in which the entire care team discusses each case during rounds – ideally with the patient and family present – on a daily basis. The team – which, in addition to nurses and physicians, includes the care coordinator and other relevant disciplines such as social work, physical therapy and pharmacy – discusses the care plan and sets daily goals as well as the goals toward discharge. In some cases, a plan is written on a whiteboard in the patient’s room to ensure that all parties are aware of the direction being taken.

“In the complex, fast-paced environment of a teaching hospital, it’s easy for decisions to be made without pivotal members of the team being present or becoming aware of them in a timely fashion,” says Mark Flitcraft, R.N., M.S.N., unit director of the medical intensive care unit at Ronald Reagan UCLA Medical Center. The interdisciplinary rounds enable key team members, each of whom offers a different perspective, to participate in those decisions, Flitcraft notes. It also ensures that the desires of the patient and patient’s family remain central to the discussion.

Ward’s team studied the effect of the interdisciplinary rounds and found that across the board, nurses and physicians at the hospital believe care has improved on their units as a result of the clearer and shared decision-making, and that patients are more likely to know what to expect. The study also found that average length of stay and hospital readmissions have been reduced.

Dr. Lazarus says, involve communication with the patient’s primary-care physician to ensure that information about the patient’s status and needs is clearly understood and appropriately acted on.

UCLA Health System is in the process of expanding its hospitalist program significantly – from 26 to 40 full-time physicians. Traditionally confined to medicine units, the hospitalist role is also expanding to surgical services – including orthopaedics, urology and, within the next year, neurosurgery – as a way of freeing up surgical house staff to spend more time in the operating room.

**ALL OF THESE DEVELOPMENTS ARE HAVING A MAJOR IMPACT ON THE TRAINING OF NEW PHYSICIANS.** Dr. Tillisch notes. Now that residents are less likely to manage patients throughout their hospital stay, a greater emphasis is being placed on interpersonal matters. Residents are being taught to make sure they introduce themselves to the patient every time they enter a room, explain what they’re about to do, and assure the patient that, despite being a new face, they are well versed in the intricacies of the case. A detailed computer sign-out system has been developed for house staff to ensure that no information is lost in handoffs.

Other changes are related to a widening of the physician’s scope as UCLA moves toward a more integrated healthcare system. “Because of all these system needs, it’s important to train physicians much more broadly,” Dr. Tillisch explains. “We have to teach them not just how to treat disease but also how to help patients navigate through that system to get the support they need. Particularly for the physicians who are most involved with a continuum of care, we’re teaching them how to participate in a more collaborative way. That’s a different kind of teaching, going beyond understanding the fundamental mechanism of disease. So the content of medical education continues to expand, even as the training hours are reduced.”

For all of the challenges in teaching physicians in new ways, though, Dr. Tillisch believes the move toward a more integrated, systematic approach is to everyone’s benefit. Dr. Rosenthal agrees. “Our goal is to deliver reliably excellent care, 100 percent of the time,” he says. “To do that, we need to look at all of the processes and explicitly determine the best ways to operate. At the end of the day, all of these changes are being made in the service of making the patient experience better, and we have clear evidence that we are succeeding in doing that.”

Dan Gordon is a regular contributor to UCLA Medicine.
Those words rang through an otherwise quiet hallway prior to the opening of Ronald Reagan UCLA Medical Center in June 2008. David T. Feinberg, M.D., M.B.A., and CEO of UCLA Hospital System, not only made that proclamation but he and leaders throughout the system have been on an unrelenting mission ever since to elevate the satisfaction levels of patients.

While stories of revolutionary medical breakthroughs and extraordinary clinical outcomes are common at UCLA, the health system’s leadership did not always hear that patients were impressed with their treatment journey. In fact, when Dr. Feinberg was promoted to CEO, in 2007, he took the reins of an organization that was rich with strengths in medical education, research and healthcare delivery but decidedly deficient in leaving its patients and their families with a warm feeling about their experience. UCLA’s overall patient-satisfaction scores were in the 30th- to 40th-percentile range and in need of considerable improvement.

Rather than looking at the miserly numbers and feeling discouraged, Dr. Feinberg saw in this a significant opportunity. “To be honest, being chosen for this job was rather daunting,” he says. “This is a place where miracles are performed every day, however, when I talked to patients I heard some disconcerting things. I’d gone to business school and they taught me that you should know your customer. But how much were we talking to our customers at UCLA, and why were our satisfaction scores so low?” Even more disconcerting was the fact that few patients indicated they would refer their family or friends to UCLA, in spite of the excellent medical care they had received.

“Some people [within the system] told me that our scores were inevitable given the complexity of the cases we treated and the training nature of our facilities,” Dr. Feinberg says. “I just couldn’t accept that.”

From that point forward, Dr. Feinberg’s overarching goal was to boost those scores by giving patients and their families the level of care, both medical and personal, that any member of his own leadership team would expect for themselves or their families. To that end, Dr. Feinberg inserted the “face of the patient” into every business discussion at UCLA by starting each meeting with a patient story. He also asked leaders in the organization to get out of their offices and go up to the floors to talk with patients.

“OUR SENIOR-MOST LEADERS ASKED ME IF I SAW PATIENTS… and I realized at that point that my contact with patients was merely incidental and not the focus of what I did as a leader,” recalls Mark Speare, senior associate director for patient relations and human resources. “It was a significant ‘aha!’ moment for me. The first patient visits were a little awkward and angst producing. Initially, the staff members were perplexed, if not suspicious, of hospital administrators when we visited the patient floors.”

But it soon became evident, Speare says, “that listening to the patients was the only way anyone could truly learn how to serve them, and patients wanted us to listen. Now, some years later, visits with patients and families come naturally. All of our directors and managers participate in patient rounds, and our staff members enjoy seeing us and getting feedback on what we are doing to make the patient experience better.”

Informal processes of listening like those described by Speare have evolved at UCLA into systems that increase the consistency of service delivery and ardently solicit the voice of the patient. “To turn our patient-satisfaction numbers around, we had to go back to the basics,” Dr. Feinberg notes. “We took our mission statement, ‘Delivering leading-edge patient care, research and education,’ and personalized it for staff with a strong emphasis on care delivery. Specifically, we redesigned our vision statement to say ‘Healing humankind, one patient at a time, by improving health, alleviating suffering and delivering acts of kindness.’” By linking that vision to UCLA’s underlying values of integrity, compassion, respect, teamwork, excellence and discovery, “we built a framework to solicit staff’s commitment to caring.”

Providing excellent medical care was never the issue. “We knew we delivered great clinical outcomes and that we are one of the finest healthcare facilities in the world but we needed to be challenged to be, first and foremost, known for our compassion and our relationships with patients and their families,” says Tony Padilla, director of patient affairs and volunteer services. “We have faced and met that challenge by demonstrating unprecedented increases in our satisfaction levels from the 30s to greater-than-95th percentile systemwide.” Those systemwide improvements have led to UCLA being recognized as one of the nation’s top-rated academic medical centers from a patient-satisfaction standpoint. More importantly, they have caused those receiving care, like Rachel Vollmer, to say, “Hospitals are not exactly the most fun place to be … but I actually look forward to going to UCLA when we have post-operative appointments … and I don’t want to think of a world without UCLA Health System.”

UCLA’s turnaround of the patient experience, elevating it to the forefront of the system’s thinking about how it delivers care, is just part of the story that I learned while researching my book about UCLA Health System. The lessons revealed have relevance beyond healthcare. For anyone interested in “serving well” — whether personally or professionally — the experience of UCLA Health System offers an opportunity for insight, renewal and transformation.

Author, public speaker and organizational consultant Joseph A. Michelli, Ph.D., has written extensively about transformative corporate cultures, including Starbucks, Ritz-Carlton Hotel Company and the online retailer Zappos. His book about UCLA Health System, Prescription for Excellence (McGraw-Hill, 320 pages), has just been released. Dr. Michelli is donating proceeds from the book to benefit UCLA’s Operation Mend.

To watch a video about Prescription for Excellence and UCLA Health System’s patient-first culture, go to: www.uclahealth.org/excellence
A new book details how UCLA Health System elevated the patient experience and transformed itself into an architect of the customer-service revolution.
SEVEN YEARS AGO, Janet Pregler, M.D., invited a small group of successful executives to breakfast. Over coffee and croissants, the affable director of the Iris Cantor-UCLA Women’s Health Center proceeded to tell the high-powered bankers, lawyers and assorted professionals an improbable tale.

Deploying a Power Point presentation, she trotted out a series of blunt facts. Did they know, for instance, that when she was in medical school in the 1980s, that apart from obstetrics and gynecology, there wasn’t a single course devoted to women’s health? Were they aware that, historically, medical-research subjects were often exclusively men, in part because women had this reproductive issue that made it easier and cheaper for scientists to study males? Furthermore, did the audience realize that even the mice used in studies – the mice! – were usually male?

The guests at the breakfast, who happened to be exclusively female, had heard enough. "All those things were new to me," recalls Julia Gouw, one of the attendees, "Whether it’s research or medical treatment,
women are the stepchild of the medical field.”

Soon after, Gouw, president of East West Bank and a member of the board of directors of The UCLA Foundation, placed a few strategic calls. She told her friends about the funding crisis in women’s health, and then she asked them a probing question: Would they be willing to kick in $10,000 a year to advance research solely on women? They, in turn, asked other prominent executives they knew. And with that, a unique philanthropic effort was born called the Iris Cantor-UCLA Women’s Health Center Executive Advisory Board.

“It has always made me angry that research was not done on women,” says Jan R. Cloyde, co-founder and former president of Grandpoint Bank, and one of the three original board members Gouw recruited. “So I was immediately interested in helping support and grow this group. Originally, we thought if we could get 10 or 15 members, that would be great. We now have 27.”

Since then, “the capitalists,” as they jokingly call themselves, have provided UCLA scientists with more than $1 million to advance women’s health, including more than $600,000 in seed money for research related to women’s health. With that funding, investigators across UCLA have tackled studies ranging from heart failure in women and sex differences in migraine to understanding menstrual irregularity and the effects of female hormones on stress.

Each year, Dr. Pregler huddles with a group of handpicked scientists who sift through proposals from campus researchers to winnow the recipients to four. In many cases, the researchers have been able to leverage those initial small studies to obtain much larger grants.

The chemistry between the capitalists and the researchers has also led to another memorable meal. Now, every winter, Dr. Pregler and Gail Greendale, M.D., research director of the Cantor Center, host a “Lunch with the Scientists.” There, over iced tea and grilled salmon, the female rainmakers hear presentations from the researchers who’ve benefited from their feminist vision and largesse. “To sit in the lunch with those scientists,” says Cloyde, “is beyond words.”

Here are stories of some of those researchers whose work has been supported by these forward-thinking women.

VISIONARIES. (From left) Dr. Janet Pregler with philanthropists Jan R. Cloyde and Julia Gouw.
Richard Pietras: Women & Lung Cancer

WHEN DANA REEVES DIED IN 2006 OF LUNG CANCER, AT AGE 44, the beloved widow of actor Christopher Reeve had never smoked a cigarette. Her shocking diagnosis led many to ask the same question: How could she have gotten such a toxic form of lung cancer and died at such a young age?

It was precisely because of her high profile that Reeve drew attention to a largely invisible medical crisis. Since 1987, lung cancer has surpassed breast cancer as the leading killer of women; more than twice as many women die of lung cancer as succumb to breast cancer. And, like Reeve, an astonishing 80 percent of nonsmokers who get the deadly disease are women.

Richard Pietras, M.D., Ph.D., is all too aware of these grim statistics. For the past seven years, he’s been researching what he calls the “epidemic” of lung cancer in women. He will tell you that female lung-cancer deaths have soared 600 percent since 1950. He will also tell you why there’s so little awareness of this fact. “It gets lost in the wave of publicity for all these other cancers, especially breast cancer,” says Dr. Pietras, professor of medicine-hematology/oncology and director of the Stiles Program in Integrative Oncology.

While there are advocacy groups to fight breast cancer and prostate cancer, lung cancer is another story. There’s no real advocacy group for lung cancer because the survival rate of patients is so poor. “In the first five years, most patients with advanced lung cancer will pass away,” he says. “You don’t have these survivor groups for research funding.”

Lung cancer also has an image problem; it is a grim disease with a grim outcome and often elicits judgment and disdain as something that is self-inflicted. “Most people would right away think you were responsible for getting lung cancer because you smoked,” Dr. Pietras says. “Even patients themselves feel that way. They don’t want people to know.”

As it happens, one of the under-reported findings of the 15-year, National Institutes of Health’s Women’s Health Initiative study was that women who took hormone-replacement therapy were more likely to die of lung cancer than women who had a placebo. Dr. Pietras was already studying the hormone-lung cancer connection, and he suspected that estrogen was fueling the disease. With a grant in 2008 from the Iris Cantor-UCLA Women’s Health Center Executive Advisory Board, he and co-investigator Diana Marquez-Garban, M.D., made a pivotal contribution to the field: Dr. Pietras confirmed the presence of estrogen-receptors in lung-cancer cells. That research has enabled Dr. Pietras to pursue a new study, one that could lead to better treatments for the deadly disease. Along with Edward Garon, M.D., professor of hematology and oncology, he is now running a clinical trial to explore the benefits of using anti-estrogen therapy in more than 100 female lung-cancer patients.

“We always knew the breast was a target,” says the scientist of estrogen’s role in breast cancer. “But most people never thought about the lung as a target organ. So having this seed funding is very critical to try to inspire people to move forward in areas where there’s not a proven track record.”
Kathrin Plath & Alissa Minkovsky: The X Factor

**AS EVERYONE LEARNED IN HIGH SCHOOL BIOLOGY**, males carry one X and one Y chromosome while females have two X chromosomes. Yet in females, this XX is toxic. So during embryonic development, a remarkable thing happens. One of the Xs in females is “silenced,” or inactivated.

How does this process happen? Scientists don’t really have a clue, but it is a puzzle that Alissa Minkovsky finds fascinating. “It’s a crazy thought you can silence an entire chromosome,” says the young researcher, a fourth-year student in a joint M.D./Ph.D. program in the David Geffen School of Medicine at UCLA.

And it’s a puzzle the enterprising medical student could eventually help solve. Last year, Kathrin Plath, Ph.D., assistant professor of biological chemistry, invited Minkovsky to join a pilot study she’s leading to unravel the mysteries of the double X. With a $30,000 grant from the Iris Cantor-UCLA Women’s Health Center Executive Advisory Board, Dr. Plath and Minkovsky are trying to understand how X inactivation occurs. They’re hoping to find the proteins involved.

If they succeed, the researchers could provide insights into one of the most important mysteries surrounding female biology. As Minkovsky explains, “The larger part of women’s health focuses on studying the function of reproductive organs and hormonal axes. Yet X-chromosome inactivation is one of the most basic cellular differences between men and women.”

X-inactivation affects the outcome of mutations on the X chromosome. Rett syndrome, for instance, a rare brain disorder caused by a genetic mutation on the X, occurs almost exclusively in girls. After six to 18 months, girls with the disease suddenly develop severe learning, communication and language problems. Male cells only have one X, and if that X has a mutation, embryos die.

“On average, every cell in a girl with Rett syndrome will have 50 percent of cells expressing a mutant form of the protein and 50 percent of the normal one, due to X inactivation,” says Minkovsky. Therefore, females are born but carry the disease. In the lab, the two scientists have been taking normal cells and manipulating them into stem-like cells that express the normal protein. Potentially, these cells could be made into neurons and then reintroduced into patients to treat disease. “The beauty of that is you’ve derived the cells from the patient to begin with,” Minkovsky says.

Although it’s not yet clear, studies suggest that X inactivation could play a role in breast cancer and other diseases affecting women. “You’ve got this whole chromosome that’s been inactivated,” says Minkovsky. “It’s such an important process, and if it goes wrong, female cells don’t behave correctly at all.”

For researchers to prove that intimate connection, she adds, “We must identify more molecular players involved in silencing the X chromosome.”

Maureen McMahon: Lupus & Heart Disease

**IN 1997, WHEN MAUREEN McMAHON, M.D., graduated from the University of Chicago’s Pritzker School of Medicine, women’s health was not a priority at the well-regarded institution. “It did strike me as a little odd,” recalls Dr. McMahon, assistant clinical professor of rheumatology at the David Geffen School of Medicine at UCLA.**

At the time, Dr. McMahon was beginning to focus on lupus, a little-understood disorder that affects some 1-million Americans with conditions that range from arthritis to severe fatigue. The disease can damage the brain, the kidneys and other organs. “Lupus was interesting to me largely because it’s a disease that can affect women, and often young women,” she says. “It has a wide range of what it does.”

When she had the opportunity to launch her own study, Dr. McMahon thought she’d approach it a little differently. The scientist knew that women with lupus are at much greater risk of heart attacks and strokes, even when you consider normal cardiac-risk factors like high blood pressure. Yet, despite the high prevalence of heart disease in females in both the general and the lupus populations, Dr. McMahon was struck by one prevailing fact: “When you start to look through the cardiovascular literature, a lot of the studies had been done on primarily male populations. The number of studies done in populations of women with additional risk factors like lupus was even smaller.”

She also knew that some men with heart disease had an elevated level of dysfunctional, pro-inflammatory HDL – the so-called “good” cholesterol. Was this dysfunctional “good” cholesterol playing a similar role in women with lupus and their enhanced threat of heart disease?

In 2007, with $20,000 in seed money from the Iris Cantor-UCLA Women’s Health Center Executive Advisory Board program, Dr. McMahon set out to test her theory – this time using women as her research subjects. In the study, she examined more than 300 women with lupus and more than 165 healthy women for atherosclerosis and the HDL abnormality.

The results were staggering. “We found, lo and behold, that HDL does seem to strongly associate with the risk of heart disease in lupus patients,” says Dr. McMahon. Nearly 87 percent of the women with lupus and thickening of the arteries characterized by cardiac disease had dysfunctional HDL. Even after accounting for traditional cardiac-risk factors, women with lupus and dysfunctional HDL were 10 times as likely as women with normal-functioning HDL to develop atherosclerosis. Similar increases in risk were seen in non-lupus women with dysfunctional HDL.

Although it wasn’t her primary goal, Dr. McMahon also set straight a widespread misconception about women and heart disease. “Our mean age was about 45,” she says of the participants, “so it’s a younger age than you’d think of as being the age for onset of heart disease. Yet in women with lupus, we do see this increased risk.”

She also proved the importance of doing gender-based studies on women. Unlike men, women typically have “silent” heart attacks, where their symptoms aren’t obvious. “Looking at men doesn’t give you the full picture of risk in women,” says Dr. McMahon. “There’s a lot we don’t understand about the most significant risk factors in women. By studying a population of women who have inflammation, it might give us some insights into what’s going on with women in the general population.”
Carolyn Crandall: Tackling Breast Cancer

IN 2009, CAROLYN CRANDALL, M.D., published a landmark study on breast cancer. The findings, which appeared in the Archives of Internal Medicine, showed that women who experienced breast tenderness after taking menopausal hormone therapy had nearly twice the risk of developing breast cancer after a year than women who did not have achy breasts.

It was the first time such a link had been made. For women going through menopause and conflicted about menopausal hormone therapy, the implications were profound. “We never really understood if there was any way to predict who gets breast cancer while they’re taking hormones,” says Dr. Crandall, professor of medicine, who examined data from more than 16,000 women involved in the 15-year, National Institutes of Health’s Women’s Health Initiative study.

“Maybe breast tenderness is such a hint? It’s important because fear of breast cancer is one of the most marked fears women have,” Dr. Crandall says. “Women are afraid to take hormones.”

For physicians, the findings were a long-needed wake-up call. “When women complained of breast tenderness, doctors always patted them on the shoulder: ‘Oh, we’ll change brands, or maybe we’ll change the dose,’” says Dr. Crandall. She pauses. “Maybe that was the wrong answer.”

The Women’s Health Initiative study was the most ambitious effort ever taken to understand the link between menopausal women on menopausal hormone therapy and breast cancer, among other issues. But in 2002, the study was halted, when researchers found that women who were taking the estrogen-plus-progestin treatment had a marked risk of breast cancer. Although Dr. Crandall’s discovery generated a frenzy of international media attention, the initial response from some in the medical establishment was more like a yawn. When she sought to publish her research in a prestigious medical journal, Dr. Crandall was politely told it wasn’t of interest.

Shortly after, the frustrated researcher burst into her boss’s office. “I can’t believe the editors of this journal didn’t think it was important!” she fumed to Dr. Pregler. The women’s-health expert promptly gave her a reality check. “Pick up the phone,” she told Dr. Crandall, “call any woman age 50 and over in this country and ask, ‘Do you think it’s important that breast tenderness might indicate breast-cancer risk?’ They’ll say, ‘Duh, of course I want to know this!’”

For the record, Dr. Crandall got a similarly tepid response when she approached government agencies. A pilot study on breast tenderness linked to breast cancer risk? It was so hypothetical and out of the box. There weren’t any data. Besides, agency funders contended, menopausal women weren’t even taking estrogen and progestin anymore.

Wouldn’t you know it, it took a woman – or rather, three women – to see the brilliance in the scientist’s idea. Banding together, interior designer Rose Tarlow, children’s-health philanthropist Jane Eisner and artist and philanthropist Ann Moss, owner of the racehorse Zenyatta, created the Tarlow-Eisner-Moss Research Endowment of the Iris Cantor-UCLA Women’s Health Center. It gave Dr. Crandall the funding she needed to take off.

“Thank god there is an alternative source that exists for this type of work,” she says. With backing from the Iris Cantor-UCLA Women’s Health Center Executive Advisory Board, Dr. Crandall recently completed a follow-up study. While her original investigation examined breast discomfort in women taking estrogen plus progestin, this one looked solely at a group of 8,000 women using estrogen. Will there be a difference?

Whatever she discovers, the need for such gender-focused research is clear. “Women want to know,” she says.
Thomas Drake: Gender Matters

NOT THAT LONG AGO, women were regarded in medicine as merely little men. Obviously, their reproductive equipment was different, but as far as the rest of biology went, their bodies were assumed to behave the same. After all, didn’t they share the same genetic code?

Then, in 2006, a group of UCLA researchers were looking at mice – specifically at the liver, brain, muscle and adipose tissues of mice – when they noticed something extraordinary. There were striking differences in the way genes were expressed in males and females. If this finding was true in mice, it almost certainly was the case in humans. Gender, in fact, did matter. Maybe this discovery could help explain something that baffled physicians: why women and men sometimes respond differently to the same diseases and drugs.

This was heady stuff. So when the study was published in the August 2006 issue of Genome Research, the attention it attracted was immense. “The sex-aspect differences between men and women are perennially of interest to people,” says Thomas Drake, M.D., professor of pathology. “That’s the one paper I’ve been involved with when we’ve had news people call; even TV people come over and videotape us.”

Dr. Drake, working with colleagues Jake Lusis, Ph.D., professor of human genetics, and Xia Yang, Ph.D., then a postdoctoral fellow in cardiology, discovered that even in the same organ, thousands of genes varied according to sex. While the smallest gender gap turned up in the brain, the largest appeared in the liver. This finding wasn’t just academic. With those differences, researchers might be able to understand a variety of common disorders, from obesity to diabetes.

“The sex-aspect differences between men and women are perennilly of interest to people. That’s the one paper I’ve been involved with when we’ve had news people call; even TV people come over and videotape us.”

“There are biological differences that almost certainly affect diagnosis and treatment,” says Dr. Drake. “If you find a genetic mutation in a man and the same genetic mutation in a woman, in one of them you could have a very significant risk and in the other no risk. In general, it’s probably not going to be all or nothing, but a modifier.”

The study was also significant in another way because it identified areas for developing gender-specific drugs. In heart disease, for instance, it has long been known that aspirin is more effective in preventing heart attack in men than in women. Yet the drug has been routinely prescribed for women as well.

Dr. Drake and other scientists have been fascinated by gender differences for some time, and they are seeing the mouse-research community increasingly recognize their importance. “You need preliminary data to publish something to show that it’s real,” Dr. Drake says. The $20,000 he received from the Cantor Center “helped us at an early stage.”

Mona Gable is a freelance writer in Los Angeles.
A Native Daughter Returns

KOZUE SHIMABUKURO, M.D., HAD BEEN PLANNING TO VISIT HER FAMILY IN OKINAWA FOR TWO WEEKS IN MARCH, but the day before she was scheduled to leave, Japan was hit by the largest earthquake in its recorded history. The tsunami that followed devastated parts of the country, killing more than 11,000 people and leaving tens of thousands more still missing and homeless.

Instead of her intended family visit, Dr. Shimabukuro, a critical-care pediatrician at Mattel Children’s Hospital UCLA, switched her plans and, with her family’s blessing and support from the hospital, volunteered to help with medical relief. “My government believed in me and gave me a scholarship to go study in America. Now it was my turn to believe in Japan,” she says.

When she arrived in the disaster zone, she was unprepared for what she encountered. “All the towns for 500 kilometers along the coast were destroyed,” Dr. Shimabukuro says. “It was a nightmare. You see a ship on a four-story building, if there is a building left. Trains thrown into mountains. Railroads pulled apart. No signs of civilization.”

On top of the destruction she witnessed, the temperature was freezing, adding to the misery of the disaster victims. And in her haste to leave, Dr. Shimabukuro packed only flip-flops and summer clothes; she had to borrow and buy warm clothing when she arrived.

Although a large team of physicians had been assembled for relief work, Dr. Shimabukuro and another doctor were the only pediatricians sent into the disaster zones, she says. The devastation she saw in hard-hit Iwate and Miyagi prefectures left her speechless. “It looked like the end of the world,” she says. “It was so much worse than what you see on TV.”

Traveling by car and sometimes by foot, she and her colleague visited up to five official evacuation centers every day, each serving as shelter to about 150 children. They also found several unofficial evacuation centers, usually a large home containing 20 to 50 children who had no place else to stay.

“They were cut off from the world with no cell phone, no electricity, and no one even knowing where they were,” says Dr. Shimabukuro, who returned to Los Angeles on April 1, after three weeks in Japan. “They were all helping each other, living off boiled river water – just surviving on whatever was there at the house.”

The earthquake and tsunami was an “all or nothing” kind of disaster, Dr. Shimabukuro says. “You either died or were wholly fine. If you survived, you happened to be in the right place at the right time.”

Although she treated many children for bone loss as a result of glucocorticoid use.

Awards/Honors

Dr. Marie-Françoise Chesselet, chair of the Department of Neurobiology, was selected as a Fellow by the American Association for the Advancement of Science. The goal of Dr. Chesselet’s research is to develop new therapeutic treatments for neurodegenerative diseases.

Dr. Jorge R. Barrio, professor of molecular and medical pharmacology, was honored by the World Molecular Imaging Congress with an award in his name, The Jorge R. Barrio Award for the Best Clinical Translational Research Abstract.

Dr. Eric Fonkalsrud, professor emeritus of pediatric surgery, will be recognized at the American College of Surgeons’ Clinical Conference, when the meeting and journal publication of the presentations during the group’s Surgical Forum are given in his honor. The distinction recognizes Dr. Fonkalsrud’s contributions to the field of surgery and his accomplishments throughout his career.

Dr. Janet C. Frank, assistant director for academic programs at the UCLA Multicampus Program in Geriatric Medicine and Gerontology, has been named president-elect for the Association of Gerontology in Higher Education (AGHE).

Dr. Patricia Ganz, director of the Division of Cancer Prevention and Control Research at the Jonsson Comprehensive Cancer Center, was awarded the American Cancer Society’s Medal of Honor.

Dr. Jennifer Grossman, associate clinical professor of medicine, and a team from UCLA’s Division of Rheumatology were recognized by the American College of Rheumatology for developing a set of treatment guidelines for patients suffering from bone loss as a result of glucocorticoid use.

Dr. Michael Grinstein, professor of biological chemistry at the David Geffen School of Medicine at UCLA, received the 2011 Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical Science.

Dr. Oliver Hankinson, chair of the UCLA Molecular Toxicology Interdepartmental Doctoral Program, received the Society of Toxicology’s 2011 Distinguished Toxicology Scholar Award.

Dr. William McBride, director of the Division of Cellular and Molecular Oncology, has been awarded the Gold Medal by the American Society for Radiation Oncology.

Dr. Timothy Miller, chief of plastic and reconstructive surgery, was named among People’s 2010 “Heroes Among Us” for his work with Operation Mend.

Dr. Karin Nielsen, clinical professor of
asthma, pneumonia and skin infections, most of her young patients suffered more from psychological trauma than from any physical injuries, she says.

“Some of the kids would cry and cry, and then some showed no emotion at all,” Dr. Shimabukuro says. “At nighttime, kids were having trouble sleeping or having nightmares, sobbing, missing their parents, calling for mom, or asking when mom would return.”

Because of her slight physique, many of her young patients didn’t believe she is a doctor, and referred to her as “big sister” or “Kozue,” she says. Every evacuation center had at least one or two children under the care of neighbors or friends because family members were missing. Dr. Shimabukuro played games and made origami with children trying to cope with their loss and encouraged the older ones to be as self-sufficient as possible so they wouldn’t feel so helpless.

When she got back to the U.S., Dr. Shimabukuro couldn’t shake what she had seen, and she found herself feeling guilty for being able to eat whatever she wanted, wear clean clothes and enjoy the California sunshine. “I had a hard time,” she says. “I kept remembering all the kids. I felt like I had abandoned my people.”

Then a UCLA colleague told her: “It’s okay to go back to normal.” It was the same advice she had given a distressed teenager who was living in one of the evacuation centers.

“That’s when I decided I’m going to focus on things I can do from here.” like raising awareness about the scope of the devastation and raising money to help transport people with medical needs to functioning hospitals, Dr. Shimabukuro says.

And she holds on to the good she was able to do while there – not just the medical aid she rendered, but also the hope she helped to restore. “Thank you for coming, Kozue,” one teenage girl told her. “I didn’t think I was allowed to laugh.” — Kim Kowsky

Dr. Kozue Shimabukuro spent three weeks providing medical relief in her native Japan after the earthquake in March. She returned there in April with a disaster-recovery team to continue that work.

**Grants**

**Funding agency: U.S. Army Medical Research Acquisition Activity**

Grant amount: $7.7 million  
Grant duration: 5 years  
Principal investigator: Dr. Dennis Slamon, director of clinical/translational research, UCLA Jonsson Comprehensive Cancer Center  
Summary: To utilize molecularly characterized cell line and animal models of the three current human breast-cancer therapeutic subtypes combined with data from established breast-cancer tissue banks to develop new and novel treatment approaches.

**Funding agency: California Institute for Regenerative Medicine**

Grant amount: $5.4 million  
Grant duration: 3 years  
Co-principal investigators: Dr. Bruno Peault, professor of cellular and molecular pathology; Dr. Chia Soo, associate professor of surgery  
Summary: To regenerate bone with purified, non-cultured, autologous fat-derived stem cells.

**Funding agency: W.M. Keck Foundation**

Grant amount: $900,000  
Grant duration: 3 years  
Principal investigator: Dr. David Eisenberg, Paul D. Boyer Professor of Molecular Biology & Biochemistry  
Summary: To exploit recent advances in the production of highly focused X-ray beams to devise new methods for collecting and interpreting diffraction data from biological cells and subcellular organelles.

**In Memoriam**

Dr. Joseph Raymond, former assistant dean of allied health programs, died November 26, 2010. He was 89 years old. Dr. Raymond was one of the first pathology residents at the UCLA School of Medicine, and in 1967 he founded the clinical laboratories at UCLA Medical Center. He served as assistant dean for 11 years.
MAA Board News

The MAA Board of Directors passed a revised mission statement on January 31, 2011: “The mission of the UCLA Medical Alumni Association (MAA) is to facilitate support for and interaction among the alumni, medical students, David Geffen School of Medicine at UCLA and the community at large.”


Email addresses have been created for the following executive board positions: President: maaboardpresident@alumni.ucla.edu; Executive Vice President: maaboardevp@alumni.ucla.edu; Vice President: maaboardvp@alumni.ucla.edu; 60th Anniversary Chair: maachair60anniversary@alumni.ucla.edu.

Dr. William Hastrup New Board Member

WILLIAM (BILL) HASTRUP, M.D. ’77, was elected to the MAA Board of Directors at the spring meeting and will begin serving on July 1, 2011. Dr. Hastrup lives in Fresno and is a diagnostic pediatric radiologist at Children’s Hospital Central California and conducts women’s imaging at Wishon Radiology, where he has been president for the past 15 years. Dr. Hastrup has had a faculty appointment as assistant clinical professor of radiology at UC San Francisco for 20 years. Prior to being elected as a board member, he served on the MAA Outreach Committee. Bill is married and has three children, including Kristen, who attends medical school at UCLA.

One-on-One with Dean Bok, Ph.D. ’68

Dr. Dean Bok is the Dolly Green Professor of Ophthalmology in the David Geffen School of Medicine at UCLA.

MY RESEARCH ON THE EYE BEGAN IN 1965, while I was a graduate student at UCLA. One objective of my research is to understand interactions that take place among three cell types in the retina – the retinal pigment epithelium (RPE) and the rod and cone photoreceptors. Rods are responsible for dim-light vision, and cones give us color vision. The RPE provides the photoreceptors with nutrients necessary for their daily survival, including a derivative of vitamin A essential for light detection. The RPE also removes waste products produced by the active rods and cones. Due to gene mutations, these critical processes malfunction, and patients become partially sighted or blind.

Highlight of the project so far and its effect

EARLY IN MY CAREER AT UCLA, with Professor Richard Young and colleague Michael Hall, we discovered how healthy RPE maintains photoreceptor cells in a healthy state over the course of a human lifetime. It does so by tending to the needs of the photoreceptors, which includes taking out and disposing of the garbage that they produce on a daily basis. Without this nurture, the photoreceptor cells die. A second, highly satisfactory experience much later in my career involved the discovery, through gene disruption in mice, that the absence of a single protein renders mice incapable of detecting light with their photoreceptor cells. We now know that this protein is the enzyme that converts vitamin A into its light-sensitive form. A similar disease exists in children who are born without the ability to see (Leber congenital amaurosis). This finding led to the development of a gene therapy for children who, born without vision, can now see.

Immediate and future steps for the project

MY CURRENT WORK IS FOCUSED ON UNDERSTANDING the causes and treatment of age-related macular degeneration. By virtue of the discovery by others of important disease-causing genes for this condition, we now have a rational avenue for future clarification and therapies. I collaborate with colleagues at UCLA, the University of Utah, UC Santa Barbara, the University of Oklahoma, the University of Wisconsin and the University of Florida at Gainesville.

Sentiments on conducting research at UCLA

UCLA PROVIDES A VERY FRIENDLY AND SUPPORTIVE ENVIRONMENT for junior and senior scientists. Its intellectual and material resources are vast, and, because of these attributes, I have never seriously considered relocating to another university, in spite of multiple opportunities.

Best way to reach me with follow-up questions: bok@jsei.ucla.edu.
IN HIS OWN WORDS: Bruce Dobkin, M.D.
Design for Sharing, UCLA Live’s K-12 Arts Education Program

Bruce Dobkin, M.D., is director of the Neurological Rehabilitation and Research Program, co-director of the Stroke Program and co-director of the Wireless Health Institute at UCLA. He came to UCLA in 1973 as a medicine intern and completed his neurology residency in 1977.

FOR MORE THAN 40 YEARS, Design for Sharing (DFS) has made it possible for Los Angeles County public school K-12 students to visit UCLA’s Royce Hall and experience diverse forms of artistic activities and performances. Although research and patient care demands don’t leave me with much free time, I attend two-to-three DFS programs a year.

As I make my way through campus for a performance, I can always tell when I am close to Royce Hall. Buses loads of students are lined up outside, eagerly waiting to enter UCLA’s great landmark. Their diversity reminds me of a gathering of the General Assembly of the United Nations. They are experiencing something that could be life-changing. For most of the students, it is their first live performance and their first time on a college campus.

The one-hour lectures/demonstrations are always magical. The artists thrive on the enthusiasm created by the students. The kids sing, clap, dance, sway to the music and are fully captured by the stage presence of the performers, their voices, theatrics, dance, music, poetry and, very quickly, their vision.

After a performance, the youngsters tour the university and often send letters of thanks, saying they really appreciated the artists, as well as seeing students who are similar to them. DFS gives them a brochure about courses that are needed in order to apply to UCLA, which maybe helps them better see the path to college.

One of my favorite performances was Stefan Harris and his jazz band. Stefan demonstrated to a full house of sixth-to-12th-grade students how

Students lined up outside Royce Hall before a Design for Sharing performance.

the drummer, pianist, bassist, horn player and vibraphone player pick up a short musical phrase and then play off each other. Effortlessly, the audience learned how to collaborate in making music. During the Q&A, a thin little boy, maybe 12, asked if he could try playing the vibraphone. Stefan indicated his permission by handing him some sticks. The youngster hit a few notes. Stefan played some notes off of his instrument. They went back and forth until the rest of the musicians joined in. Next thing we knew, this youngster was leading the jazz band. The cheering and clapping young audience discovered how to create art.

For more information about UCLA Live’s Design for Sharing and upcoming performances, go to: www.uclalive.org/dfs

Dr. Paulsen’s Gift

THIS SPRING, the Class of 1981 will celebrate its 30th reunion. Kudos to Tom Paulsen, M.D. ’81, for giving his class the incentive to be the seventh one to reach the $100,000 scholarship goal. He, along with his wife, Tricia Paulsen, M.D., offered to match donations from his classmates dollar-for-dollar up to $25,000 from fall 2010 through reunion day. Dr. Paulsen, whose son, Mark, is a first-year medical student at the David Geffen School of Medicine at UCLA, challenged his classmates to donate because he appreciates the opportunities that UCLA gave him during medical school and residency and that are now being extended to Mark.

Tom Paulsen, M.D. ’81 (left), and Mark Paulsen (M.D. ’14) conduct a procedure in the UCLA Simulation Center.

Upcoming MAA Events

TO STAY ON TOP of upcoming Medical Alumni Association events such as the All School Alumni Reunion on August 20, 2011, from 7 p.m. to 10 p.m., and the Medical Alumni Association Awards Banquet, visit: www.medalumni.ucla.edu.
Chairs of Distinction

Maddie Katz Endowed Chair in Palliative Care Research and Education. Palliative care improves the quality of life for patients and their families facing the problems associated with life-threatening illness. It assesses and treats a patient’s pain and other physical, psychosocial, and spiritual issues. Ronald A. Katz established the Maddie Katz Endowed Chair in Palliative Care Research and Education in loving memory of his late wife Madelyn “Maddie” Katz. It supports a senior clinician who will assist UCLA Health System in moving toward a more optimal and modern approach that places palliative-care research, teaching and treatment at the forefront, alongside disease-modifying or cure-oriented therapies. “Establishing this chair is important to me because it recognizes not just the need to take care of the patient’s pain, but the pain of the family as well,” says Mr. Katz, a 1958 UCLA graduate with a B.S. degree in business administration. Mrs. Katz passed away in 2009. Both Mr. and Mrs. Katz were actively involved with the university for more than 20 years.

The inaugural Katz Chair-holder is Dr. Thomas Strouse, medical director of the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA and vice chair for clinical affairs in the Department of Psychiatry and Biobehavioral Sciences. Mr. Katz stated, “Maddie and I first met Tom almost 40 years ago. When Tom, a palliative-care specialist, heard about my wife’s illness, he came to me and said, ‘I’m going to take care of Maddie.’”

Dr. Strouse has worked with medically ill adults throughout his career, and for the last 15 years, he has focused clinically on psychosocial oncology and cancer-pain and symptom management. “I was drawn to the practice of psychiatry and palliative care because it is, first and foremost, organized around the needs of the patient,” says Dr. Strouse.

In Memoriam

Sanford C. Sigoloff, a corporate turnaround expert, died on February 19, 2011. He was 80 years old. In the 1970s and 1980s, he was chief executive of Wickes Companies. His father became an Army physician during World War II, and after many moves, the family settled in Los Angeles. Mr. Sigoloff earned a degree in physics and chemistry from UCLA, working part time for the Atomic Energy Commission. He stayed on after graduation and during the Korean War became a researcher for the Air Force, studying the effects of nuclear explosions. Mr. Sigoloff is survived by his wife, Betty; two sons, John and Stephen; a daughter, Laurie; a sister, Roberta Silverman; and six grandchildren. Mrs. Sigoloff oversees a planned gift from Mr. Sigoloff’s estate that supports the Mary S. Easton Center for Alzheimer’s Disease Research at UCLA.

S. Jerome Tamkin, Ph.D., died on November 29, 2010. He was 84 years old. He attended and taught at USC and UCLA and earned a Ph.D. degree in mechanical and chemical engineering. A philanthropist with a wide range of interests, he supported the David Geffen School of Medicine at UCLA, serving on its Board of Visitors, and Ronald Reagan UCLA Medical Center, which houses the S. Jerome and Judith D. Tamkin Auditorium. Dr. Tamkin is survived by his wife of 48 years, Judith; his brother Jack; sons Steven Tamkin and Dr. Gary Tamkin; daughters Sherry Catlett and Wendy Livak; seven grandchildren; and one great granddaughter.

Gifts

The Jonsson Cancer Center Foundation received a $930,000 gift from the Avon Foundation to support the UCLA-Avon Cares for Life program, under the direction of Dr. Judith Gasson, at Olive View-UCLA Medical Center, and breast-imaging fellowships under the leadership of Dr. Lawrence Bassett. To date, the Avon Foundation has contributed more than $5 million to support breast-cancer screening and research at UCLA.

Annie and Kevin Barnes made a $100,000 gift to the Division of Head and Neck Surgery, Department of Surgery, to support a unique collaboration between the David Geffen School of Medicine at UCLA and the UCLA School of Dentistry. Dr. Elliot Abemayor, vice chair of the division, and Dr. David Wong, associate dean of research and professor in dentistry, are working together to develop a portable saliva test to identify biomarkers for a variety of cancers, including head and neck, breast and pancreatic, in their earliest stages when they are most treatable. The research team has a goal of making the test a routine part of every dental examination.

The Eli and Edythe L. Broad Foundation made a $2.5-million gift to the Division of Digestive Diseases in support of Dr. Charalabos “Harry” Pothoulakis and his research on inflammatory bowel disease (IBD). This funding will establish the Eli and Edythe L. Broad IBD Clinical Care and Clinical Research Program and the Eli and Edythe L. Broad IBD Clinical Care and Clinical Research Laboratory. Dr. Pothoulakis is director of the Inflammatory Bowel Disease Center and a member of the executive committees of the Center for Ulcer Research and Education (CURE) and the Center for Neurovisceral Sciences and Women’s Health. He aims to link IBD with obesity and nutrition and has expanded his work to identify mechanisms by which diet-induced obesity and fat tissue affect colon cancer. His recent discoveries also connect for the first time the function of specific hormones and neuropeptides with both inflammation and inflammation-related colon cancer.

The Noreen Fraser Foundation (NFF) made an $850,000 gift to the Jonsson Cancer
Center Foundation to support women’s cancer research under the direction of Dr. John Glaspy. NFF uses educational and awareness campaigns to raise funds for translational cancer research aimed at developing new prevention methods, diagnostic tools and nontoxic therapies to treat women’s cancers.

Dr. Richard Merkin, president and CEO of Heritage Provider Network, and the Merkin Family Foundation have directed $11.1 million to the UCLA Department of Neurology. The Richard Merkin Foundation for Neural Regeneration will support research in neural repair and recovery being conducted by Dr. Bruce Dobkin, professor of clinical neurology. “This research can hopefully play an integral part in the progress following tragic injuries involving nerve response and recovery,” says Dr. Merkin. “Dr. Richard Merkin’s generous gift enables a collaboration of UCLA scientists to test novel strategies that aim to help people with brain or nerve damage from stroke, spinal cord injury, multiple sclerosis, neuropathies and other neurological diseases,” says Dr. Dobkin. Heritage Provider Network, Inc. is on the cutting edge of the accountable-care model of healthcare delivery: coordinated, patient-doctor centric, integrated systems that represent the future of healthcare in the United States.

The Jean Perkins Foundation has been involved in many projects within the Department of Urology, as well as other fields of medicine at UCLA. Recently, it provided $300,000 for a urologic-oncology fellowship, as well as research support for the study of lower-urinary-tract reconstruction using stem cells and tissue engineering. James J. Carroll III, president of the foundation, participates on the Board of Advisors, which comprises a dedicated group of donors and was created by Dr. Jean B. deKernion, chairman of the department. Mr. Carroll and his business partner, Joe Kennedy, have committed the foundation’s funds to projects that have been instrumental in the careers of several young urologic faculty and trainees and have advanced the diagnosis and treatment of a broad range of urologic diseases.

The UCLA Department of Urology received a $250,000 gift from the Prostate Cancer Foundation, thanks to the generosity of Lynda R. and Stewart A. Resnick, for the Specialized Program of Research Excellence (SPORE) in prostate cancer. Their generous support will provide funding for young cancer investigators as they explore innovative research projects with transformative potential, such as developing individualized treatments for tumors and studying the effect of diet on prostate-cancer cell growth. The Resnicks also made a gift to the Department of Neurology at year-end 2010.

Maxine and Eugene Rosenfeld have made a $4-million bequest to UCLA; $1.5 million was directed to the David Geffen School of Medicine at UCLA for medical scholarships. This commitment broadens their support of the health sciences, having endowed a chair in computational genetics and underwritten the work of the simulation center, as well as other areas across campus. Mrs. Rosenfeld sits on the medical school’s Board of Visitors, The UCLA Foundation’s Board of Governors, and the Women & Philanthropy Board of Directors. Mr. Rosenfeld, who holds a bachelor of science degree in business administration from UCLA, has served as chairman and trustee of The UCLA Foundation and is a member of the UCLA Chancellor’s Associates. In 2010, he was awarded The UCLA Medal.

The Richard and Patricia Sinaiko family recently made a gift to support the David H. Solomon Lectureship in Geriatrics Program. Dr. Solomon, professor emeritus, served as chairman of the UCLA Department of Medicine for nine years and is an internationally recognized pioneer in the field of geriatric medicine. He played an integral role in the development of the UCLA Multicampus Division of Geriatric Medicine and founded the UCLA Center on Aging in 1991.

The Tchekmedjian Family Foundation made a $100,000 gift to establish the Tchekmedjian Family Scholarship Fund. Clinical faculty member N. Simon Tchekmedjian, M.D., FACP, and his wife, Seta Tchekmedjian, hope to help future UCLA medical students with the burdensome cost of a medical education. Four of the Tchekmedjians’ six children have UCLA roots. Nishan graduated from medical school in 2010 and is in residence at Beth Israel Deaconess Medical Center; Vatche is a fourth-year medical student and president of the Class of 2011; Alene was editor-in-chief of the Daily Bruin in 2010, her senior year; and Raffi is an under-graduate and member of the UCLA rowing team.

RIDE-ALONG

While in Al Asad, Iraq, on May 5, 2007, U.S. Marine Cpl. Tony Porta was in a Humvee that hit a roadside IED, killing two Marines instantly and severely wounding him. His prognosis was devastating: third-, fourth- and fifth-degree burns over 35 percent of his body, with several disfiguring injuries. As a patient at UCLA, Tony mentioned his lifelong love of fast cars to a member of the Operation Mend team. When racecar driver Anders Hainer got wind of it, he offered to drive Tony along Pacific Coast Highway in his shiny black Ferrari 430 Spider.

Anders and his wife, Julie, are generous donors to Operation Mend, UCLA Health System’s unique partnership with Brooke Army Medical Center in Texas and the V.A.-Greater Los Angeles Healthcare System to help treat U.S. military personnel injured in Iraq and Afghanistan. Since 2009, Julie and Anders have provided unrestricted support to the program as well as to research in skin and bone regeneration, since severe blasts can render wounded survivors’ own skin and bone unavailable for reconstruction. “That day was one of the most important in my life,” Anders says of his ride with Tony. “Tony was such a powerhouse of will and strength in the face of unimaginable adversity.”
Events

The UCLA/Orthopaedic Hospital Department of Orthopaedic Surgery hosted approximately 60 guests on October 28, 2010, at Bone Health Across the Lifespan, a reception featuring Orthopaedic Hospital Research Center (OHRRC) faculty members Dr. Deborah Kado, Dr. Deborah Krakow and Dr. Aurelia Nativ. The presentations highlighted innovative research in stress fractures in female athletes, in-utero bone deformities and healthy aging.

The Fifth Annual Lunch with the Scientists took place on February 9, 2011. Members of the Executive Advisory Board of the Iris Cantor-UCLA Women’s Health Center gathered with friends of UCLA to hear the results of research funded by the board. Dr. Janet Pergler, the center’s director, organizes this event. The group has contributed $600,000 to university-wide pilot projects that investigate women’s health topics ranging from new treatments for breast and lung cancer to the effects of yoga on stress, leading to more than $5 million in National Institutes of Health funding.

In March 2011, a ribbon-cutting event was held to celebrate the new partnership between The Chase Foundation and the Child Life/Child Development Program at Mattel Children’s Hospital UCLA. Susan and Robin Richards, through The Chase Foundation, gave more than $2 million to name the Chase Child Life Program, housed on the fifth floor of Ronald Reagan UCLA Medical Center. Made in memory of their son, Chase Richards, this gift provides additional funding to expand and enhance the services provided to pediatric patients. The foundation also provided a generous gift to create the Chase Family Healing Garden, an area for play and educational therapy that will be located on the Tisch Family Children’s Terrace.

In April 2011, Mattel Children’s Hospital UCLA board members J.R. DeLang and Mark Sear hosted the Sixth Annual No Limit Texas Hold’em Poker Tournament at Fox Studios benefiting the hospital. The event has raised more than $800,000 since its inception.

Proceeds from the Jonsson Cancer Center Foundation’s annual Taste for a Cure signature event, held on April 15, 2011, at the Beverly Wilshire Hotel, benefited the Jonsson Comprehensive Cancer Center. The evening featured premier wines and local dishes from Oregon’s Willamette Valley. David Nevins, president of Entertainment, Showtime Networks, was honored with the 2011 Gil Nickel Humanitarian Award. Dinner committee co-chairs were Dana Walden, chairman of Twentieth Century Fox Television; Jon Holman, president of The Holman Group; Larry Maguire, president and CEO of Far Niente Winery; and Jay Sures, partner and board member of United Talent Agency.

For more information, visit www.tasteforacure.com.

The 18th Annual Entertainment Industry Foundation Revlon Run/Walk for Women Los Angeles took place on May 7, 2011. The Revlon/UCLA Women’s Cancer Research Program is the leading beneficiary of this annual 5K event, which is the city’s largest fundraiser for women’s cancers.

Today’s and Tomorrow’s Children Fund (TTCF) at Mattel Children’s Hospital UCLA held its Sixth Annual Faculty and Award Presentation on May 16, 2011. TTCF members each commit a minimum of $5,000 annually to hear presentations from pediatric faculty members and vote on how to distribute their collective funding. In addition, they hear from the previous year’s award winners on the progress of the research projects and see their dollars in action. Kuk-Wha Lee, M.D., Ph.D., assistant professor of pediatric endocrinology, received the Grand Prize for her work on a potential therapy for Type 1 diabetes.

Mr. and Mrs. Gerald Oppenheimer joined Dr. Gary Gitnick, Dr. Eric Esrailian and Dr. Emeran Mayer in celebrating the official opening of the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress on June 14, 2011. The Oppenheimer Center is a program of the UCLA Division of Digestive Diseases.

The 12th Annual Mattel Party on the Pier is scheduled for October 16, 2011, from 11 a.m. to 3 p.m. at Pacific Park on the Santa Monica Pier. The event underwrites the vital work of Mattel Children’s Hospital UCLA, supporting physicians, programs, and research within the UCLA Department of Pediatrics.

For more information, visit www.partyontheier.ucla.edu.
A Young Life Passes, and a Ritual of Birth Begins

By Mark S. Litwin, M.D., M.P.H.

MY HANDS TREMBLED as I grasped the tiny sleeve of skin with my forceps and separated it from the baby’s pale, still penis. He lay motionless on a utility table, which I’d draped with a slate-blue operating-room towel. A few feet away, his young parents sat quietly wrapped in each other’s arms. Family and friends stood silently around the periphery of the small hospital room, whose gray-green walls enveloped us dispassionately.

The pregnancy had been uneventful. A month before the due date I’d received a familiar, reluctant, yet eager call about arranging a bris, the ritual Jewish circumcision performed on the eighth day of life. The expectant parents promised to call back after delivery to confirm the date and time so they could order the deli platters.

Like many parents, this couple preferred a medical circumcision — respectful of religious tradition but performed by a physician, with local anesthesia and sterile technique. This is where I came in. As a urologic oncologist, I ordinarily focus on those with cancer, often at life’s end. Seventeen years ago, I became a certified mohel, hoping to marry my surgical skills and knack for calming nerves with the hopeful optimism of growing families. A bris provides an intimate and reinvigorating view of life’s beginning.

The ninth month passed, but the happy call never came. A week after the due date, the fetus’s heart rate had slowed alarmingly and he was delivered by emergency Caesarean. Born limp and gasping, he was whisked to the neonatal ICU. But three days of medical heroism failed to provide any glimmer of hope. My forceps and separated it from the baby’s pale, still penis.

The mother’s best friend called me with the news. “They’d still like you to perform a bris but don’t want to put him through unnecessary pain,” she said. “Can you do it after he dies?”

I could, it seemed. My rabbi assured me that Jewish tradition allows for such circumstances. The ceremony is different, of course — there’s no talk of bar mitzvah or marriage, and the healing prayer is redirected at the grieving family. A post-mortem circumcision allows a moment of normality before the immense loss must be confronted. The rabbi taught me what to say to make the ceremony kosher: the Hebrew phrase “Adonai hu ha’Elohim” (loosely translated as “Above all else, there is God”) repeated seven times.

The hospital staff removed the baby from the ventilator, took out the IV, swaddled him and handed him to his parents. They were led to the hospital room, gently cradled their warm newborn son for just an hour as pink faded to gray. Then, like a candle suddenly extinguished by a gust of wind, life left. A sad emptiness remained, as if the air were pierced by a pungent, thin plume of smoke, rising and quickly dissipating. He was gone. No future, only a past.

Explaining to those now gathered the meaning of what they were to witness, I began the procedure I’d done a thousand times. I took the baby from his father, unwrapped his soft blanket and gently laid him on the utility table. But today there were no squirming legs, no lidocaine injection, no smiling grandparents recalling their own son’s bris a generation ago. Just a drop of purple blood.

I must have fumbled with the instruments. “It doesn’t have to be perfect, Doc,” the young father called out, breaking the tension. Actually, it does, I thought — this one has to be extra perfect. This was their only unsullied moment with him, all they might remember. With no life ahead to pin dreams to, he had paused for one intense and ephemeral instant before being wrapped in the ancient tradition of his ancestors.

“Adonai hu ha’Elohim... Adonai hu ha’Elohim...” I barely recognized my own voice echoing the incantation, the words punctuated by muffled sobs. As I faltered, I drew strength from the young parents. Lost as they must have felt, their faces remained calm. I could feel their approval, their encouragement, their stamina. In turn, I reflected it to support them. I was the instrument, and they allowed no fumble. Amen.

Two years later, they called again: “We’re having a boy, and we’d like you to do the bris.” I melted into my chair, almost overcome with dual emotions. My heart throbbed with the memory of their pain, yet that pain was tempered with their resolution and new enthusiasm.

A month later, we had a happily pedestrian conversation about date and time. Eight days later, the spring sun radiated through a brilliant blue sky into their home. The smells of brewed coffee, warm bagels and fresh lox overlay the chatter of arriving guests. Suffused with morning light, the living room slowly filled with each of the previous attendees. Wearing giddy smiles and energized with new hopes and dreams, the young parents again handed me their newborn son.

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