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Few professional symbols are more inspiring and filled with expectation than the doctor’s white coat in medicine. This distinctive garb evokes hope, knowledge, respect and caring in the minds of just about all who see it – whether patient, family member, student, staff or physician. These are some of the thoughts that crossed my mind as I participated in the 17th annual White Coat Ceremony of the David Geffen School of Medicine at UCLA in August. With great pride, I watched as we cloaked 188 entering students, the Class of 2016, with their first white coats. The students beamed, walking across the stage as newly initiated members of the medical community. For our students, this ceremony was truly a gratifying moment, as they transitioned from aspiring medical students to physicians-in-training. And they certainly deserved the spotlight that was shining on them.

Our new initiates were not the only ones aglow in UCLA’s legendary Royce Hall. Family members, particularly parents, were a proud and enthusiastic audience. For them, I imagined validation after years of steadfast dedication to nurturing their sons’ or daughters’ aspirations and promise. Some in the audience, especially those who have been patients, no doubt felt a personal connection with the health profession. Knowing the compassionate nature of their loved ones being cloaked must have provided them with assurance that the human touch will be preserved in medicine.

Faculty and alumni assembled on the stage were similarly excited. We saw the future unfolding before our eyes. These new students represent that next generation of leaders in health and science to whom we will eventually pass the baton. There are few disciplines in which the integrity of this interchange is more vital than medicine. Observing this poignant ceremony filled us with excitement, confidence and anticipation of the task before us – to train this remarkably accomplished and promising new class for their future roles as healers, teachers, researchers and leaders.

All present were a joy to watch. I congratulate everyone involved in preparing our students for this momentous day. It has been a long, arduous road, but the hard work has paid off, and our students enter medicine at a most propitious time.

As I said that afternoon, believe me, the best is yet to come.

Vice Chancellor, UCLA Health Sciences
Dean, David Geffen School of Medicine at UCLA
Gerald S. Levey, M.D., Endowed Chair
At age 32, Brandie Osborne has beaten the odds. The young woman from Compton, California, has dealt with health issues her entire life and has faced death more than once. But now, with a new donated heart and kidney, she has been given a second chance to live and is ready to take on the world.

Osborne was born with a genetic condition known as Noonan syndrome, which is often associated with heart and lung problems. She developed hypertrophic cardiomyopathy, a thickening of the heart muscle, and pulmonary hypertension, which caused high blood pressure in her lungs. In 2009, her condition worsened, and she was placed on the waiting list for a heart-lung transplant at a hospital in Northern California.

While waiting, Osborne suffered heart and lung failure and required a breathing tube. Then her kidneys failed, and she needed dialysis. With so many medical complications, she was deemed an unacceptable candidate for transplantation surgery. After six months in the intensive care unit at Ronald Reagan UCLA Medical Center, she improved enough to return home. But her complicated medical issues over the next two years continued to exclude her as a transplant candidate.

However, her pulmonologist, David Ross, M.D., medical director of the UCLA Lung Transplant Program, and her cardiologist, Daniel Cruz, M.D. ’99, Ph.D. ’00, championed a new idea: If they used medications to treat Osborne’s pulmonary hypertension after a potential heart transplant, she would not require a lung transplant at the same time. In other words, the lung problems could be reversed with a healthy new heart and medications. Pursuing this strategy, they hoped, could get Osborne back on the transplant list for a heart, and possibly a kidney.

Thirty-six days after she was put back on the transplant list, Osborne learned that an organ donor had been found. She said her reaction was, “No way! Oh my God! Oh my God,” followed by tears, then panic, then more tears and excitement.

The first phase of the surgery – the heart transplant – was performed by Richard Shemin, M.D., chief of cardiothoracic surgery. Less than 24 hours later, Osborne returned to the operating room for the next phase, a kidney transplant from the same donor, performed by H. Albin Gritsch, M.D., associate professor of urology.

When she woke up after the two high-risk surgeries, the first thing she said to her mother was, “I’m alive!”

Osborne returned home from the hospital with just one small pump that administers her lung medications and a long to-do list: swim, ride a bike, go for walks, play with her Shitzu puppy, travel to Hawaii, eat lots of pasta, learn how to bake cupcakes and someday open a bakery.
Zeroing In on Autism Genes

UCLA researchers have combined gene expression and the use of peripheral blood to help scientists pinpoint genes that play a role in autism and zero in on those that offer future therapeutic targets for the disorder.

“Technological advances now allow us to rapidly sequence the genome and uncover dozens of rare mutations,” says Daniel Geschwind, M.D., Ph.D., UCLA’s Gordon and Virginia MacDonald Distinguished Professor of Human Genetics. “But just because a particular genetic mutation is rare doesn’t mean it’s actually causing disease. We used a new approach to tease out potential precursors of autism from the occasional genetic glitch.”

The study was published in the online edition of the American Journal of Human Genetics.

Dr. Geschwind and his colleagues studied DNA in blood samples from 244 families with one healthy child and one child on the autism spectrum. The team used a hybrid method that blended tests that read the order of DNA bases with those that analyze gene expression, the process by which genes make cellular proteins. Gene expression offers a molecular signpost pointing scientists in the right direction by narrowing the field and highlighting specific areas of the genome.

“We found that we can use gene expression to help understand if a rare mutation is causing disease or playing a role in disease development,” says Dr. Geschwind. “A gene mutation accompanied by a change in expression clues us to a hot spot on the genome and directs us where to look next.”

The researchers used the combined method to prioritize gene targets that merit closer investigation. Their search turned up new regions in the genome, where genetic variations showed strong links to autism and altered expression patterns. Genes in these regions were more likely to be mutated in the autistic children than in their unaffected siblings.

Finally, the research team discovered that the DNA contained in peripheral blood – the blood that flows and circulates through the body – can help shed light on diseases of the central nervous system. “Brain tissue from people with autism is not readily available for study, and some people are reluctant to use non-neural tissue in psychiatric disease,” Dr. Geschwind explained. “But our study demonstrates that even peripheral blood can expand our knowledge of neurological disease.”
What Makes Our Brains Human?
It’s in the Wiring

Human brains and chimp brains both evolved from the same ancestor millions of years ago and outwardly look anatomically similar. Wherein lies the difference that separates us from our simian cousins?

A UCLA study pinpoints uniquely human patterns of gene activity in the brain that could shed light on how we evolved differently than our closest relative. The identification of these genes could improve the understanding of human brain diseases like autism and schizophrenia, as well as learning disorders and addictions.

The research was published in the online edition of the journal Neuron.

“Scientists usually describe evolution in terms of the human brain growing bigger and adding new regions,” says Daniel Geschwind, M.D., Ph.D., the Gordon and Virginia MacDonald Distinguished Professor of Human Genetics. “Our research suggests that it’s not only size, but also the rising complexity within brain centers that led humans to evolve into their own species.”

Examining post-mortem brain tissue, Dr. Geschwind and his colleagues used next-generation sequencing and other modern methods to study gene activity in humans, chimpanzees and rhesus macaques, a common ancestor of both chimpanzees and humans, which allowed them to see where changes emerged between humans and chimps.

They zeroed in on three brain regions: the frontal cortex, the hippocampus and the striatum.

By tracking gene expression, the process by which genes manufacture the amino acids that make up cellular proteins, the scientists were able to search the genomes for regions where the DNA diverged between the species. What they saw surprised them.

“When we looked at gene expression in the frontal lobe, we saw a striking increase in molecular complexity in the human brain,” Dr. Geschwind says. “Although all three species share a frontal cortex, our analysis shows that how the human brain regulates molecules and switches genes on and off unfolds in a richer, more elaborate fashion,” says Genevieve Konopka, Ph.D., a former postdoctoral researcher in Dr. Geschwind’s lab. “We believe that the intricate signaling pathways and enhanced cellular function that arose within the frontal lobe created a bridge to human evolution.”

The researchers took their hypothesis one step further by evaluating how the modified genes were linked to changes in function. “The biggest differences occurred in the expression of human genes involved in plasticity – the ability of the brain to process information and adapt,” Dr. Konopka says. “This supports the premise that the human brain evolved to enable higher rates of learning.”

2,000 and Counting

UCLA performed its 2,000th heart transplant in June 2012, becoming the second program in the world and the first in the western United States to achieve this milestone.

A 59-year-old man from Riverside, California, who suffered from advanced dilated cardiomyopathy with secondary pulmonary hypertension, received the donated organ at Ronald Reagan UCLA Medical Center in a four-hour surgery led by Reshma Biniwale, M.D., assistant professor of cardiothoracic surgery.

“It is extraordinary that 2,000 donor hearts have been transplanted at UCLA, giving new life and new hope to pediatric and adult patients ranging in age from two weeks to 77 years,” says Abbas Ardehali, M.D., director of the UCLA Lung and Heart-Lung Transplant Program. “Not only is this historic occasion a time for celebration, it is also an opportunity to thank those thousands of organ donors and their loved ones who gave the precious gift of life.”

Founded in 1984, UCLA’s heart-transplant program has been a world leader in the field and was recognized in 2010 by the U.S. Department of Health and Human Services as the nation’s best heart-transplant program.
TAVR Offers Alternative for Cardiac Patients Who Cannot Undergo Surgery

UCLA performed its first transcatheter aortic valve replacement (TAVR) in August, using a new device approved by the U.S. Food and Drug Administration to replace an aortic valve in a patient who was not a candidate for open-heart surgery.

Although minimally invasive surgical procedures have been used on the aortic valve in the past, these operations relied on incisions in the chest wall and required cardiopulmonary bypass. The TAVR allows doctors for the first time to replace the aortic valve without either of these components of conventional surgery.

Many patients are not good candidates for conventional valve replacement because they suffer from a number of other health issues, and it is estimated that 40 percent of patients do not undergo aortic-valve replacement because they cannot tolerate surgery.

The new device is deployed through a catheter – a long tube that is advanced through an artery in the groin up to the heart. Once the valve is in place, a balloon at the end of the catheter is inflated, opening the new valve, which starts working instantly.

Studies have shown the new valve procedure dramatically improves quality of life and survival rates. A recent randomized clinical study showed a significantly higher one-year survival rate among patients treated with the new valve, compared with those who received medical therapy.

“We expect to see substantial quality-of-life gains from this new procedure,” says Richard J. Shemin, M.D., chief of cardiothoracic surgery. “Many patients who were formerly bedridden will be able to resume a more normal life with this novel new therapy.”

Can Obesity Help One to Survive Heart Failure?

It may seem counterintuitive, but when it comes to a person surviving heart failure, a big waist may be an advantage. Researchers at UCLA have found that in both men and women with advanced heart failure, obesity and a higher waist circumference were factors that put them at significantly less risk for adverse outcomes.

The study was published in the American Journal of Cardiology.

“The findings offer further insight into an observed phenomenon in chronic heart failure known as the “obesity paradox”: Obesity is a known risk factor for developing heart disease and heart failure, but once heart failure has manifested, being overweight may provide some benefits.”

“Heart failure may prove to be one of the few health conditions where extra weight may be protective,” says Tamara Horwich, M.D. ’07, assistant professor of cardiology.

Researchers analyzed data on advanced-heart-failure patients treated at UCLA from 1983 to 2011. The team assessed 2,718 patients who had their body mass index (BMI) measured at the beginning of heart failure treatment and 469 patients who had their waist circumference measured at the beginning of treatment.

At the two-year follow-up, researchers used statistical analysis and found that in men, a high waist circumference and high BMI were associated with event-free survival from adverse outcomes like the need for a heart transplant, the need for ventricular-assist-device placement, or even death. Women with a higher BMI also had better outcomes than their normal-weight counterparts, and women with a high waist circumference also trended toward improved outcomes.

No one knows exactly why the obesity paradox exists, but there are several possible explanations. Patients who are obese may, for example, benefit from increased muscle mass, as well as metabolic reserves in the form of fatty tissue. In addition, increased levels of serum lipoproteins that are associated with increased body fat may play an anti-inflammatory role, neutralizing circulating toxins and inflammation-related proteins, Dr. Horowich says.

Obese patients also present at an earlier stage of heart failure due to increased symptoms and functional impairment, so they may be getting help sooner, which also could improve outcomes, the researchers say.
A diet supplemented with a particular omega-3 fatty acid and curcumin, a compound in the Indian spice turmeric, may help to repair nerve cells.

UCLA researchers have discovered that a diet enriched with a popular omega-3 fatty acid and an ingredient in curry spice helps to preserve walking ability in rats with damaged spinal cords. The findings suggest that these dietary supplements help repair nerve cells and maintain neurological function after degenerative damage to the neck.

The findings were published in the Journal of Neurosurgery: Spine.

"Normal aging often narrows the spinal canal, putting pressure on the spinal cord and injuring tissue," says Langston Holly, M.D. '95, associate professor of neurosurgery. "While surgery can relieve the pressure and prevent further injury, it can't repair damage to the cells and nerve fibers. We wanted to explore if dietary supplementation could help the spinal cord heal itself."

The UCLA team studied two groups of rats with a condition that simulated cervical myelopathy – a progressive disorder that often occurs in people with spine-weakening conditions like rheumatoid arthritis and osteoporosis. It can lead to difficulty walking, neck and arm pain, hand numbness and weakness of the limbs.

One group of animals was fed rat chow that replicated a Western diet high in saturated fats and sugar. Another group consumed a standard diet supplemented with docosahexaenoic acid (DHA) – an omega-3 fatty acid shown to repair damage to cell membranes – and curcumin, a compound in turmeric, an Indian curry spice that is a strong antioxidant that previous studies have linked to tissue repair. Both reduce inflammation.

A third set of rats received a standard rat diet as a control group.

The researchers recorded a baseline of the rats walking and re-examined the animals' gait on a weekly basis. Rats fed the DHA- and curcumin-enriched diet walked significantly better than the first group. When they studied the rats' spinal cords, the animals that ate the Western diet showed higher levels of a marker linked to cell-membrane damage, while the ones on the DHA and curcumin diet displayed marker levels that were equivalent to the control group. Levels of markers linked to neural repair and cellular communication in the animals fed the supplemented diet also appeared similar to those of the control group.

Says co-author Fernando Gomez-Pinilla, Ph.D. '86, professor of neurosurgery: "This is an exciting first step toward understanding the role that diet plays in protecting the body from degenerative disease."
Ray of Hope in Fight against Duchenne MD

Scientists at UCLA have identified a new compound that could treat certain types of genetic disorders in muscles. It is a big first step in what they hope will lead to human clinical trials for Duchenne muscular dystrophy (DMD).

DMD is a degenerative muscle disease that affects boys almost exclusively. It involves the progressive degeneration of voluntary and cardiac muscles, severely limiting the life span of sufferers.

In a new study, Carmen Bertoni, Ph.D., assistant professor of neurology, Refik Kayali, Ph.D., a postgraduate fellow in Dr. Bertoni’s lab, and their colleagues demonstrated the efficacy of a compound known as RTC13, which suppresses so-called “nonsense” mutations in a mouse model of DMD.

The findings were published in the online edition of Human Molecular Genetics.

Nonsense mutations are generally caused by a single change in DNA, which disrupts the normal cascade of events that changes a gene into messenger RNA, then into a protein. The result is a non-functioning protein. In the case of DMD, the “missing” protein is called dystrophin.

Drs. Bertoni and Kayali collaborated with the laboratory of Richard Gatti, M.D., professor of pathology and laboratory medicine and of human genetics. Working with the UCLA Molecular Shared Screening Resource facility at the campus’s California NanoSystems Institute, the Gatti lab screened some 35,000 small molecules in the search for new compounds that could ignore nonsense mutations. Two were identified as promising candidates: RTC13 and RTC14.

Dr. Bertoni’s lab tested RTC13 and RTC14 in a mouse model of DMD. While RTC14 was not effective, RTC13 was able to restore significant amounts of dystrophin protein, making the compound a promising drug candidate for DMD.

When RTC13 was administered to mice for five weeks, the investigators found that the compound partially restored full-length dystrophin, which resulted in a significant improvement in muscle strength. The loss of muscle strength is a hallmark of DMD.

The next step in the research is to test if an oral formulation of the compound would be effective in achieving therapeutically relevant amounts of dystrophin protein. If so, planning can then begin for clinical testing in patients and for expanding these studies to other diseases that may benefit from this new drug.

Meditation Reduces Loneliness

Many elderly people spend their last years alone. But being lonely is much more than the sadness of a silent house and lack of companionship. It can take a physical toll as well, including contributing to increased risk of heart disease, Alzheimer’s disease, depression and even premature death.

Researchers at UCLA report, in a study published in the online edition of Brain, Behavior, and Immunity, that a simple meditation program reduced loneliness in older adults. Steve Cole, Ph.D., professor of medicine and psychiatry and a member of the Norman Cousins Center for Psychoneuroimmunology at UCLA, and colleagues report that the two-month program of mindfulness-based stress reduction (MBSR), which teaches the mind to simply be attentive to the present and not dwell in the past or project into the future, successfully reduced the feelings of loneliness.

MBSR also altered the genes and protein markers of inflammation, including the inflammatory marker C-reactive protein (CRP) and a group of genes regulated by the transcription factor NF-kB. CRP is a potent risk factor for heart disease, and NF-kB is a molecular signal that activates inflammation, which can promote a variety of diseases.

“Our work presents the first evidence showing that a psychological intervention that decreases loneliness also reduces pro-inflammatory gene expression,” Dr. Cole says. “If this is borne out by further research, MBSR could be a valuable tool to improve the quality of life for many elderly.”

In the study, 40 adults between the ages of 55 and 85 were randomly assigned to either a mindfulness meditation group or a control group that did not meditate. The MBSR participants self-reported a reduced sense of loneliness, while their blood tests showed a significant decrease in the expression of inflammation-related genes.

“While this was a small sample, the results were very encouraging,” says Michael Irwin, M.D., director of the Cousins Center. “It adds to a growing body of research that is showing the positive benefits of a variety of meditative techniques, including tai chi and yoga. These studies begin to move us beyond simply connecting the mind and genome, and identify simple practices that an individual can harness to improve human health.”
A One-Two Punch to Skin Cancer

Treating metastatic melanoma by combining immunotherapy with a drug that inhibits the cancer-spreading activity of a common gene mutation significantly increased survival times in an animal model.

In a study by researchers at UCLA’s Jonsson Comprehensive Cancer Center, animals that received a combination of the recently approved BRAF inhibitor vemurafenib and an engineered T-cell immunotherapy had better tumor responses and lived more than twice as long as those getting the BRAF inhibitor or immunotherapy alone. The findings provide strong support for testing the combination therapy in human clinical trials.

About 50 percent of patients with metastatic melanoma have the BRAF mutation and can be treated with vemurafenib. More than 50 percent of them respond well to the drug, but the responses usually last only a few months. With immunotherapy, fewer patients respond, but the responses are more durable.

By pairing these therapies in a one–two punch, researchers hope to maintain the high response rates associated with vemurafenib and combine them with the longer disease-free progression times seen with immunotherapy, says Richard Koya, M.D., Ph.D., assistant professor of surgical oncology. “The idea was to target two different aspects of anti-cancer biology, hitting the tumor cells themselves with the BRAF inhibitor and adding in T-cells educated to induce a specific anti-tumor immune response. The results we saw in this study were very promising.”

The study was published in the journal Cancer Research.

The researchers also found that the BRAF inhibitor helped boost the power of the immunotherapy, creating a greater combination effect, says co-author Antoni Ribas, M.D., Ph.D., professor of hematology/oncology. “We found that both treatments were more effective when administered together, and we were surprised to see that a drug that should only be targeting the BRAF-mutant cancer cells was also having a beneficial effect on the T-cells.” It is vital to develop new drugs to treat metastatic melanoma, as few options are available for patients, the researchers said. Vemurafenib works well, but most patients eventually relapse.

“This is a patient population that we are not able to cure,” Dr. Koya said. “With what we have now, we are just prolonging their lives. We need to have more options, and we hope this combination therapy proves to be an effective alternative.”
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While consulting at the Los Angeles Zoo, a light bulb went off for UCLA cardiologist Barbara Natterson-Horowitz, M.D. “The diseases of the animal patients I saw at the zoo often were essentially the same as those we see in humans,” she says. “I had an ‘ah-hah’ moment: What might physicians learn if we looked at human medical concerns through the lens of veterinary medicine?” Thus began her six-year journey, systematically examining a variety of human conditions – from heart disease to sexual dysfunction and addiction – to find overlaps in the animal world. The result of that exploration is *Zoobiquity: What Animals Can Teach Us About Health and the Science of Healing* (Knopf, 2012), co-authored with science journalist Kathryn Bowers. Dr. Natterson-Horowitz spoke with *U Magazine* editor David Greenwald about *Zoobiquity* and her conclusions.

The word “zoobiquity” has not yet made its way into the *Oxford English Dictionary*. What does it mean?

**Dr. Natterson-Horowitz:** In writing this book, Kathryn and I wanted to create a novel approach to important human medical concerns that brought the perspectives of veterinary science, evolutionary biology and even ecology to the human bedside. We needed a term to describe it, so we coined the word “zoobiquity,” which brings together zoo, which is Greek for animal, and ubiquity, Latin for everywhere. It is meant to describe this fusion of ideas trained on important human medical concerns.

What got you started on this exploration?

**Dr. Natterson-Horowitz:** My first epiphany was the realization that whether we treat humans or horses or dogs and cats, all doctors are really veterinarians. We physicians might actually consider ourselves veterinarians with a single-species focus. But the bigger spark came from spending time on rounds with veterinarians, watching their procedures, listening to their clinical decision making. Much was very familiar; other aspects were unique. I wondered, what approaches and perspectives veterinarians had that might be useful to human medicine. I was intrigued by the possibility that translational insights might be hiding in plain sight. We began asking questions such as, do animals get breast cancer? Yes, they do. Do they get heart failure? Yes. Do they get STDs? Yes. Do they suffer from mental illness? Yes. To almost every question we asked, the answer was a resounding “yes.” Veterinarians learn comparatively from the beginning of veterinary school and are therefore very aware of this. Most physicians, on the other hand, are unfamiliar with the tremendous overlap among the diseases of their human patients and animals in our homes, our farms and in the wild.
The human-animal overlaps you describe in the book are fascinating—drug-seeking wallabies in Tasmania, obese dragonflies, depressed gorillas—and often quite surprising. How does it then relate to human medicine?

**Dr. Natterson-Horowitz:** Let’s consider issues of mental illness, specifically self-injury. Before I trained as a cardiologist, I completed a residency in psychiatry. I assumed that self-injury was uniquely human, triggered by contemporary psychopathology. My assumption was wrong. Self-injury is seen in a broad spectrum of animals. Parrots and other birds pluck out their feathers in a disorder that is reminiscent of trichotillomania, a human disorder characterized by the plucking out of facial and other hairs. Some birds will peck at their skin until it bleeds, suggesting parallels with human cutting. There are dogs that obsessively lick until the fur comes off and sometimes the skin breaks and bleeds, and horses will bite their flanks.

That is interesting, but how is it relevant? Consider that if a human patient presents with self-injury, the traditional approach has been to explore life history, childhood and transitional experiences, to engage the patient in better self-understanding. This approach can be helpful. But a veterinarian doesn’t have access to language; he or she can’t ask the parrot or the horse about childhood traumas.

“I assumed that self-injury was uniquely human, triggered by contemporary psychopathology. My assumption was wrong.”
that might be contributing to their behavior. But veterinarians recognize three conditions known to elicit self-injury in animals: stress, isolation and boredom. So when a horse starts to bite its flank, a veterinarian will intervene by targeting these factors. They combat isolation by putting the horse together with other horses – returning this herd animal to its herd – or even by placing a small animal such as a chicken in its stall. They alleviate stress or boredom by striving to increase the animal’s activity. Instead of just strapping on a food bag to feed a horse, they spread out their food and make them forage, so it becomes a greater challenge. These strategies are remarkably successful in attenuating these behaviors in animals. I think psychotherapists could consider treatments targeting isolation, boredom and stress triggers in their human patients in addition to the insight-oriented work they do with self-injurers. Perhaps a human patient compulsively burning himself with cigarettes could improve if his therapist consulted a bird specialist experienced in the treatment of parrots with feather-picking disorder or an equine behaviorist who has managed flank-biting stallions.

We also understand that some self-injury in animals may represent an amplification of normal self-soothing grooming behavior. Over-licking syndromes in dogs may share neurobiology with humans with forms of obsessive-compulsive disorder involving excessive washing and grooming. Patients and their doctors could benefit from the recognition that across the animal kingdom, the urge to groom can be dialed up significantly, becoming pathological and dangerous. Knowing that these disorders are not uniquely human may help some patients to better deal with the stigma and shame that too often accompany mental illnesses.

Another issue you discuss at great length is addiction.

**Dr. Natterson-Horowitz:** We asked the question, “Do animals get high?” Although we were very skeptical, we quickly learned that many animals appear to seek out substances and become intoxicated. Cedar waxwing birds are notorious for eating fermented berries and flying while intoxicated and smashing into windows. Wallabies in Tasmania invade fields where medical opium is grown to eat the poppies, and some of them become quite intoxicated, sustaining injuries or even die as a consequence. There are reindeer who seek out hallucinogenic mushrooms, and bighorn sheep in the Canadian Rockies have been known to scale very steep cliffs to get to a type of psychoactive lichen. They seem to like it so much and want it so much that they will grind their teeth down to the gums trying to scrape it off the rocks. It is incredibly difficult for an addict to “just say no.” Saying no, it turns out, is also hard for some animals.

Again, why is this relevant? Simply learning that the neurobiology underlying addiction is species-spanning and ancient has the potential to...
help patients understand their struggle with less guilt and self-recrimination. Greater awareness of the comparative aspects of substance use could also aid in the destigmatization of substance abuse and addiction.

Obesity is another key area you discuss. How does what is known about obesity in animals relate to obesity in humans?

**Dr. Natterson-Horowitz:** There's an epidemic of obesity among human beings, and it turns out there are parallel epidemics of obesity occurring in other species, starting with domestic animals. Our cats and dogs are getting heavier, and in some cases dangerously so. There also are some wild populations of animals that are getting fatter. We learned that across the animal kingdom, when animals have access to abundance, they over-consume. They binge eat. They hoard food. They are storing up for those periods when there is scarcity. Of course, in the wild the environment is very dynamic, and so while there may be periods of abundance, there are also typically periods of great scarcity. Animal experts understand obesity less as a function of the individual and more of the environment. Alter the animal’s environment to decrease its access to food, to make it more difficult to get food, and the animal will slim down.

It was also very interesting to hear some of the veterinarians we spoke with talk about some other environmental factors that contribute to weight gain. For example, the microbiome – the trillions of organisms that grow in our and animals’ bodies that can affect everything from our metabolism to our immune systems – is believed to affect weight gain in the animal kingdom.

How is that applicable to human populations?

**Dr. Natterson-Horowitz:** Applying a zoobiquitous approach to an obese human patient would involve looking at human obesity as primarily a disease of the environment. Physicians would first consider factors such as the built environment, the ease of access to and abundance of surrounding food, the microbiome, circadian rhythms, and even seasonal effects. This shift in perspective would be a translational insight from the world of veterinary medicine that could represent a shift in perspective that could lead to effective interventions aimed less at the individual and more at communities and governments with the power to influence the home environment.

What ultimately do you hope will be the outcome from Zoobiquity?

**Dr. Natterson-Horowitz:** Our connection with animals is ancient and deeply connected to human health. A species-spanning, interdisciplinary approach has the potential to yield benefits for the health not only of humans, but also animals. Taking language from the final page of our book, zoobiquity calls for physicians and patients to think beyond the human bedside to barnyards, jungles and skies.

“Zoobiquity calls for physicians and patients to think beyond the human bedside to barnyards, jungles and skies.”

“We asked the question, ‘Do animals get high?’ Although we were very skeptical, we quickly learned that many animals appear to seek out substances and become intoxicated.”

For more information about Zoobiquity, go to: www.zoobiquity.com/book
When Peter Whybrow, M.D., was studying medicine at the University of London in the 1960s, scientists had a limited understanding of what various parts of the brain did. It is remarkable how much can change in just 50 or so years. “Within my professional lifetime,” Dr. Whybrow reflects, “we’ve learned more about the brain than we had in the whole of human history.”

Fueled by recent advances in our understanding of behavior, UCLA is writing a dramatic new chapter in the study of the human mind.

So much more that scientists today can actually create detailed maps that illuminate the relationship among various structures and their functions in the brain, providing them with a tool to more fully understand the physical processes that underlie human sensation, awareness and cognition. With those clearer insights comes a wealth of applications, from the design of medical
and surgical interventions to the treatment of psychological and psychiatric disorders.

At the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, of which Dr. Whybrow is director, and the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA, where he is C.E.O., much of this new knowledge is being developed, evaluated, enhanced and applied. Together, these two centers have helped to propel the ongoing breakthroughs in our understanding of the workings of the brain, behavior and mental illness, and in so doing, they have transformed the lives of untold numbers of people who suffered from debilitating conditions.

Even as these life-altering innovations are underway, a dramatic new chapter is being written. Fueled by recent advances in our understanding of behavior, both normal and abnormal, the expansion of the Semel Institute’s research portfolio and a substantial investment of private and federal dollars, both the Semel Institute and the Resnick Hospital are being transformed.

The vision for this transformation includes not only addressing mental illness, but also answering questions about other behaviors that affect people’s lives. How, for example, do genetics and the environment conspire to drive unhealthy lifestyle choices, such as those that are contributing to the national obesity epidemic? Or how can we develop strategies to improve resilience and wellness in people on all points of the continuum between what is thought to be normal behavior and what is considered serious mental illness?

“These are bold questions,” says Dr. Whybrow, chair of psychiatry and biobehavioral sciences. “And the public looks to great universities like UCLA to help find the answers.”

The transformation now underway is embodied in two major initiatives: Healthy Campus, which will use innovative science and behavioral techniques to assist UCLA students, staff and faculty to better understand brain function and to make healthier lifelong choices, and The Nexus Project, an ambitious effort to integrate leading-edge research, bringing together prevention, health promotion and treatment strategies to the community through translational research in genomics and the behavioral neurosciences.

At around the same time as Dr. Whybrow was earning his M.D., the California Legislature decided to make an $8-million investment in a facility for neuropsychiatric research, education and clinical care. The doors to UCLA’s Neuropsychiatric Institute (NPI) – the forerunner of today’s Resnick Neuropsychiatric Hospital and the Semel Institute – opened in 1961.

As with other neuropsychiatric institutes that were established at this time, the focus of UCLA’s facility was not limited to treating developmental disorders and mental illness. “There was a sense that, beyond the humanitarian efforts, we might be able to understand the underlying causes of mental illness,” Dr. Whybrow explains. That, in turn, “would create a new vision for the future.”

Fundamental research at the NPI and at today’s Semel Institute has explored multiple sclerosis and epilepsy and led to the invention of the nicotine patch and the cloning of receptor sites for opiate addictions.

Exploiting UCLA’s concentration of renowned neuroscientists and clinicians (university hospitals rarely are located adjacent to the general campus), the NPI developed an infrastructure and culture of scientific collaboration that became one of its significant strengths. “The magic of the NPI, and today as the Semel Institute, has always been that I can go across the street to consult with a world-famous neuropsychologist, upstairs to talk to a geneticist or someone who is doing biological chemistry, and down the hall to visit with a world-authority on the immune system,” says Fawzy I. Fawzy, M.D., the Louis Jolyon West Professor of Psychiatry and Biobehavioral Sciences and executive associate director of the Semel Institute.

“If you have a question here, you have a greater chance of finding collaborators within the institute, in the medical school or on the campus at large than if you were almost anywhere else.”

That infrastructure has enabled today’s Semel Institute to take full advantage of the advances in technology that have paralleled its growth. Buoyed by the ever-more-powerful tools of molecular biology, genetics, neuropsychology, neuroimaging and informatics, institute researchers and clinicians have contributed to tremendous progress in how brain disorders are understood. Research and clinical programs that encompass the span from early childhood development through degenerative diseases such as Parkinson’s and
Alzheimer’s do more than ensure that the institute can serve all types of patients. The comprehensive nature of the enterprise has provided fertile ground for the type of cross-talk among experts that promotes progress and for the development of visionary programs.

Thus, the achievements for which the Semel Institute and Resnick Hospital are known today have been built upon the foundation of those earlier efforts, from groundbreaking work on drug treatments for schizophrenia to advances in the understanding of memory and frontal-lobe function. Fundamental research at the NPI and at today’s Semel Institute has explored multiple sclerosis and epilepsy and led to the invention of the nicotine patch and the cloning of receptor sites for opiate addictions. Many contributions have come from internationally recognized programs in autism, early childhood intervention, eating disorders and aging.

Today, the Semel Institute draws more federal, foundation and private competitive research funding than any other neuropsychiatric institute in the country – approximately $170 million per year. This support also has led to UCLA becoming one of the nation’s leading academic training grounds for research psychiatrists and neuroscientists.

One cannot overstate the significance of the contributions from Jane and Terry Semel and Stewart and Lynda Resnick that led to renaming the NPI’s research and clinical arms nearly a decade ago. Beyond the financial support, lending their names put a human face on issues that continue to be stigmatized. "There is still a basic prejudice about psychiatry in general and mental illness particularly,” Dr. Whybrow says. “The Semel name helped to focus that this translational-research institute is where science drives innovative mental-health programs. And in the same way, the Resnicks giving their name to the hospital said that they were proud to be associated with a place where people are treated for severe behavioral and brain disorders, rather than those patients just being brushed aside, apart from the public view.”

Huge strides in psychopharmacology have been made in the context of an explosion in the basic neurosciences – in the identification and study of neurotransmitter systems and in the molecular biology of complex human behavior; in the genetics of behavior and psychiatric illness; and in insights about the brain and the nature of mental disorders, driven by ever-more sophisticated structural and functional neuroimaging.

Unlike the many neuropsychiatric institutes that are devoted primarily or exclusively to patient care, UCLA’s boasts an unsurpassed neuroscience infrastructure that drives the clinical progress. “We have invested a great deal in understanding the basic functions of the brain, so that we can better understand how it goes wrong,” Dr. Whybrow says. As such, the advances coming out of UCLA and other leading neuropsychiatric institutes are fundamentally changing the way mental disorders are understood and treated. For example, in recent years, the Semel Institute has undertaken a major effort to focus on the behaviors that become disturbed rather than on the diagnosis per se. “Disruption in areas such as sleep, mood, attention and memory are involved in many different diagnoses,” Dr. Whybrow notes. “By looking for common threads in diagnoses, we can begin to ask how these reflect changes in brain function and how we can better treat those changes, rather than just focusing on diagnostic categories.”

Thomas Strouse, M.D., medical director of the Resnick Hospital, notes that when the NPI first opened its doors, the prevailing theories were that manic depression, severe depression and even schizophrenia were attributable to parental missteps. “Now,” says Dr. Strouse, “we tend to understand most major mental illnesses as brain diseases that are the manifestation of a complex interaction between genetic and environmental factors.”

This recognition of a genetic-environmental interplay comes after a period some 20-to-30 years ago, during which most of the focus was on the biological. “Biology is not destiny. That also is something we have learned in this explosion of knowledge that is behavioral neuroscience,” says Dr. Whybrow. “The brain learns from what it encounters. Thus, while the genes inherited from parents help to shape our path and the vulnerabilities we carry, it is experience and those who nurture us that eventually determine who we are.”

Researchers are looking for subtle changes on MRI scans that may have a genetic basis, which could lead to better diagnosis and treatment of brain disorders.
The implications of this understanding are profound. Where once it was thought that people were entirely responsible for their own mood and behavior, and then it was believed that any aberrant behavior was simply a product of wayward brain chemistry, it’s now clear that both a person’s developmental path and his or her biology play a role, along with a third significant factor: the social environment. Even with medication interventions, the best results are achieved with medication and supportive therapy that calls for an understanding of the person, the family and the environment.

The realization that mental disorders probably fall on a continuum and that the difference between a healthy brain and a disordered one may be small – with individual choices and social environment playing an important role – has led to a greater focus at the Semel Institute and Resnick Hospital on studying normal behavior as a vehicle for better understanding mental illness. It has also underscored the harmful effects of the stigma that continues to be associated with mental illness. The institute has tackled the latter issue head-on, thanks in part to The Friends of the Semel Institute, a volunteer organization founded by philanthropist Vicky Goodman, which hosts highly attended educational programs for the public.

Dr. Whybrow has written about the “cruel but simple logic” to the anatomy of a stroke: When one side of the brain is damaged, the opposite side of the body is paralyzed. By contrast, understanding the factors influencing memory, human emotion and disabilities of the mind is far more complicated. But that doesn’t mean mental disorders don’t have an anatomy. In fact, researchers are looking for subtle changes on MRI scans that may have a genetic basis, which could lead to better diagnosis and treatment of brain disorders.

“Unlike other diseases in medicine, major mental illnesses such as schizophrenia, depression, bipolar disorder and autism don’t have biological markers we can use to make diagnoses or assess the effectiveness of our treatments,” says Nelson Freimer, M.D., professor of psychiatry and biobehavioral sciences and director of the Semel Institute’s Center for Neurobehavioral Genetics. “So we’re left to rely on clinical judgments about people’s behavior or what they reveal about how they’re thinking.” The promise of genetics, Dr. Freimer explains, is that it might reveal biological differences associated with major mental illnesses, enabling diagnosis and therapy based on more objective grounds than in the past.

This challenge is but one of many. Indeed, for all that’s been learned about the brain and human behavior since the UCLA Neuropsychiatric Institute was established barely more than 50 years ago, far more remains undiscovered. The questions
seem to become ever more complex, calling for an army of basic and clinical researchers, all located within walking range of each other, who together cover neuroscience and behavior from every possible angle within a medical complex serving neuropsychiatric patients across the lifespan.

That is the thrust of The Nexus Project, the new translational-research program being developed by the Semel Institute and Resnick Hospital. Launched by two major federal grants – one for operations and the other to renovate facilities that will be the first step in creating a translational center – Nexus will be a first-of-its-kind effort to answer big questions involving behavior and serious disability through interdisciplinary teams that draw from the entire campus. It will be characterized by innovative science, a community focus and a building design that fosters collaboration. “Science is now a team enterprise, not just one person sitting in a lab,” says Dr. Whybrow. “At UCLA, we are in the rare position of being able to put together, in connected facilities, a group of people who can conduct studies of molecular genetics and how cells communicate with each other in the brain and use that knowledge to refine diagnoses and develop strategies to help people behave in ways that are more conducive to their health.”

With the Resnick Hospital now a part of the Ronald Reagan UCLA Medical Center complex, a $15-million federal grant will convert part of the old hospital units that were located in the NPI tower into a facility that will house outpatient-clinical-care and translational-research programs. The transformed physical plant will be the first step in a fundraising initiative, supported by the Semel family and part of a larger UCLA campaign, to build a new research tower, conceived by the New York-based architectural firm Kohn Pedersen Fox Associates (KPF), which will be contiguous with the renovated existing Semel Institute towers. This Nexus research tower has been designed to foster faculty innovation and entrepreneurship across disciplines, with the goal of rapid translation of scientific advances into public practice. The light-filled public spaces of the first two floors will, through education and participation, invite public and student interaction with the work of UCLA faculty.

In the meantime, the renovated facilities, which will be completed in 2013, will serve as the initial home for the federally funded $25-million, five-year research initiative organized by Semel Institute faculty that is already underway. Focused on developing prevention strategies via high-throughput studies in molecular genetics and behavioral assessment, using laboratory models as well as human subjects, this initiative involves 52 faculty collaborators from across the UCLA campus. It is an example of how The Nexus Project eventually will serve as a magnet for the most talented researchers on the brain and behavior at UCLA and beyond.

In addition to supporting research, the new Nexus tower will serve as a destination for health-promotion and disease-prevention activities for UCLA students and the general public alike. Nexus will also be the research engine that drives innovative outreach programs in the community, such as the first UCLA Family Commons, a Santa Monica-based initiative to support and assist families in adopting a healthful lifestyle, Dr. Whybrow says.
It has been estimated that as much as 70 percent of healthcare expenditures can be attributed to illness fostered by life choices. Unhealthy diet, alcohol and tobacco abuse, lack of exercise, poor sleep habits – these are among the most obvious illustrations of how poor decisions, even in the face of scientific evidence, contribute to behavioral disorders, chronic disease, long-term disabilities and premature mortality. “The keys to disease prevention are both scientific discovery and behavioral change based on self-understanding,” says Dr. Whybrow, who, along with the Semels, has been a leading proponent of the Healthy Campus initiative. “While a minority of disease is genetically predetermined, the vast majority of all illness is shaped by our inherited biology interacting with the environment, an interaction that is mediated in large part by the way we take care of ourselves.”

He acknowledges that converting discoveries about the brain into effective behavioral strategies for healthier living is no simple task. Despite extraordinary advances in neuroscience, the current understanding of brain processes and their relationship to behavior – both normal and abnormal – lags behind our knowledge of other, simpler body systems. But through the Nexus Project, and the participation of the UCLA student body and local community via the Healthy Campus initiative, the Semel Institute and Resnick Neuropsychiatric Hospital are taking on that challenge.

And as a storied institution endeavors to enable more members of the next generation to lead lives that are healthy in both mind and body, it is illustrating a fascinating paradox about the human brain. The same organ that is at the root of so much anguish and self-destruction can also be harnessed to find ways to repair itself. This is particularly true when the effort involves hundreds of differently focused brains working together in a coordinated effort at one of the world’s leading sites for unraveling the mysteries of the mind and human behavior.

Dan Gordon is a regular contributor to U Magazine.
Three Who Stood Up

Their reputations were attacked. Their homes were damaged. Their lives were threatened. But these UCLA scientists refused to back down in the face of assaults by anti-animal-research extremists.

By Mona Gable
Portraits by Mark Berndt

For years, animal-rights extremists have engaged in a campaign to terrorize UCLA faculty who conduct animal research. The homes of these scientists have been vandalized, they have received death threats and been demonized with a barrage of accusations about the alleged harm they are inflicting on animals. A Molotov cocktail intended for the home of one researcher was mistakenly placed on the doorstep of her elderly neighbor. Their addresses have been published on extremist websites.
An ophthalmologist discovered another firebomb under his car and later received an ominous threat warning him to “watch (his) back” because he might face “injections into (his) eyes.” His wife received a package containing razor blades, animal fur and oil, with a note urging her to persuade her husband to quit his research or else “what he does to the animals we will do to you.”

After years of such harassment, UCLA and the scientists turned to the courts and their own counter-activism. As UCLA Chancellor Gene Block asserted in 2011, during a campus rally in support of animal research: “We will not be deterred from our mission as a public university to create new knowledge that benefits society.” He went on to note that animal research is “indispensable,” leading us to “greater understanding of the human body” and moving us “closer to new treatments for millions of people battling a wide variety of ailments, such as AIDS, addiction and schizophrenia.”

The three scientists profiled here – J. David Jentsch, Ph.D.; Edythe London, Ph.D.; and Dario Ringach, Ph.D. – are among those who have been targeted and whose experience led them to become outspoken advocates for animal research. In February 2012, they were honored by the American Association for the Advancement of Science with its Scientific Freedom and Responsibility Award for their “rare courage, their strong defense of the importance of the use of animals in research and their refusal to remain silent in the face of intimidation from animal-rights extremists.”

Dr. J. David Jentsch
In the summer of 2010, Dr. Jentsch, a professor of psychology and psychiatry, was attending a conference when he received an e-mail urging him to look at a website. Dr. Jentsch clicked on the link, which took him to Negotiation Is Over, or NIO, a radical animal-rights group.

The webpage post, by NIO leader Camille Marino, showed a chalk outline of a human form and the following words: “It is my personal belief that if you are a sadistic animal torturer, that is all you deserve – a chalk outline.” It went on to name Dr. Jentsch and to state that the thought of his death at the hands of animal-rights activists “amuses me immensely.” The post concluded: “NIO is no longer mincing words. This is war!”

It was not the first time Marino had targeted Dr. Jentsch, whose research in non-human primates focuses on understanding the neurobiological underpinnings of methamphetamine addiction and tobacco dependence in teens. The 48-year-old activist had been harassing the scientist for a year, making threatening statements and posting his home address on her website. Previous actions against Dr. Jentsch also included the early-morning firebombing of his car in 2009 (a group called the Animal Liberation Brigade claimed responsibility) and an envelope containing razor blades allegedly tainted with AIDS left in his mailbox, followed by another communiqué warning “HELL AWAITS YOU.”

But if the chalk outline on NIO’s website was meant to finally intimidate Dr. Jentsch, it didn’t. By now, he was fighting back. In the aftermath of the fire bombing and other violent incidents against UCLA scientists, Dr. Jentsch co-founded Pro-Test for Science, a group of faculty, staff and students who support animal research, modeled on an organization at Oxford University. Their first rally on campus drew 700 people.
“I learned a lot through my experience,” he says. “Now I’m in a position to help other people. So I feel I’m able to confront the past in a much more positive way because I can help other people with their ongoing crises.”

With the help of UCLA legal counsel, Dr. Jentsch filed for a restraining order against Marino. “What we were asking [the judge] to do was not publish my address on the web and to prohibit her from engaging in threatening speech on the web,” Dr. Jentsch recalls. The judge initially viewed these requests as potential violations of Marino’s First Amendment rights. After asking Dr. Jentsch “a lot of hard questions,” the judge took a break. Five minutes later, he came back. He said he’d decided to look at Marino’s website and told Dr. Jentsch: “I’ve made up my mind. We’re going to give you the order right here.”

Since obtaining the restraining order, attacks against Dr. Jentsch have declined. Last year, demonstrators showed up twice at his house. What changed? The scientists and UCLA spoke out. “They can’t get away with this stuff,” he says of the extremists. “If they come back next month, we’re going to meet them with resistance.”

(In an unrelated case, Marino was extradited in March 2012 from her home in Florida to Michigan to face felony charges of stalking a researcher at Wayne State University. Dr. Jentsch had assisted the scientist in obtaining a restraining order against Marino, which she allegedly violated.)

With the atmosphere somewhat calmer, Dr. Jentsch has been able to more fully concentrate on his research, and he has made significant progress in trying to understand why some people may be at greater risk for addiction than others. In 2011, he and colleagues published a landmark study in the *Journal of Neuroscience*, in which they stated they’d discovered a key protein in monkeys linked to being at risk. He is hopeful the findings will lead to effective therapies that stop the destructive cycle of addiction before it starts. “One of the hardest things in the whole world is to develop prevention,” he explains. “In the brain of a kid who has never taken a drug, is there something we could know, a marker of being at risk? Knowing that, could we do something to prevent it from happening?”

And he is engaged in his work with Pro-Test for Science. “Attempts to end the use of animals in basic and biomedical research using threats, harassment, stalking, violence and personal attacks must be condemned by all as a direct assault on the patients who await the development of new therapies and cures,” Pro-Test asserts in its mission statement. To which Dr. Jentsch adds that animal-rights extremists “are not going to push anybody around in this university the way they once did. Not if I have anything to say about it.”

**DR. EDYTHER LONDON**

Like her colleague, Dr. Jentsch, Dr. London is interested in addiction. To unravel the mysteries of why some people abuse drugs, she has spent the past three decades studying how brain chemistry changes in people who are caught in the grasp of addictive substances.

Using MRI, PET scans and other brain-imaging techniques, she and colleagues have been searching for areas in the brain that are critical to self-control.

And while her studies primarily involve working with humans, it was her collaboration with Dr. Jentsch – studies that validated previous research he conducted in rats and vervet monkeys, thus indicating “the animal model is very faithful to the human condition, and, therefore, evaluation of medications and tests for new treatments that are done in the
animal model would in fact be valid” – and an article in the San Francisco Chronicle about her work using primates to understand and treat nicotine addiction in adolescents that attracted the attention, and then the wrath, of animal-rights extremists.

In 2007, the Animal Liberation Front, a group that has been labeled by the FBI as a domestic-terrorist organization, launched an attack one night at London's home. After smashing a back window, they pushed a garden hose through the shattered glass and turned on the tap, flooding the inside of her house and causing more than $30,000 in damage. Not long after, the organization issued a statement addressed to Dr. London. They had been conflicted, the statement said, over whether to flood her house or burn it.

Rather than retreat, Dr. London, a professor of psychiatry and biobehavioral sciences and molecular and medical pharmacology in the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA and director of UCLA's Center for Addictive Behaviors, decided to speak out. In November 2007, shortly after the assault on her home, she published an op-ed in the Los Angeles Times. It described the attack. But more than that, Dr. London also used the article, titled “Why I Use Animals in My Research,” as a forum to explain her research and the importance of using animals to develop treatments.

“Our animal studies address the effects of chronic drug use on brain functions such as decision-making and self-control that are impaired in human addicts. We are also testing potential treatments, and all of our studies comply with federal laws designed to ensure humane care,” she wrote.

The article did little to fend off the harassment and scare tactics. Four months after the flooding incident, a firebomb exploded on her porch, scorching her front door. At one point, the building in Century City where Dr. London’s husband works had to be evacuated because of a bomb threat. Pamelyn Ferdin, a former child-actor-turned-animal-rights activist and the wife of a movement leader, was videotaped leading a group of demonstrators down the street where Dr. London lives.

“She was coaching a bunch of people. ‘Tell her she’s a Jew! Tell her she’s Hitler!’” recalls Dr. London, who is a child of Holocaust survivors. The demonstrators were arrested for violating a city ordinance against targeted picketing.

In a 2010 article in Los Angeles Magazine about the assaults on UCLA scientists, Dr. London took note of the movement’s invocation of Holocaust imagery to justify its actions. “It’s twisted and it’s inflammatory,” she said. “Someone figured out it’s possible to pull the heartstrings of people by linking these images of the Holocaust to animal researchers.”

Since the arrests of the marchers on her street, Dr. London has received fewer threatening e-mails and visits. Like other targeted UCLA scientists, she is protected by 24-hour security and an armed guard at her home, provided by UCLA. “The university has been great,” she says. “When you consider that UCLA is a large research university and not a counterterrorism organization, we can’t expect them to do the impossible.”

DR. DARIO RINGACH

It was nearly a decade ago, but Dr. Ringach still remembers the fear, the awful feeling of helplessness. The masked figures would appear out of nowhere in the middle of the night. They would bang on the windows and doors. They’d scream that he was a “monkey killer.” His children were 7 and 4 years old.

The police would come, but the demonstrators often were already gone. Who are they? the police would ask. Dr. Ringach didn’t know. Call again if they return, he was advised. If the activists were still there when the police arrived, the officers would simply tell them to leave. But no one was arrested. And they kept coming back.

“It was the feeling of a mob about to invade your house,” Dr. Ringach recalls. “My kids were very upset. The young one didn’t really understand what was happening. The 7-year-old could understand what they were screaming. He was in my lab many times. He knew how we treated the animals.”

And yet, “It’s very difficult to tell a 7-year-old, ‘Daddy’s not a killer.’”

At the time, Dr. Ringach, a professor of neurobiology and psychology, was investigating how visual signals reach the brain. He was working on treatments involving electrical stimulation to the visual cortex to restore sight in patients who’d gone blind. Because the research involved a risk of seizures, Dr. Ringach was first testing these methods in non-human primates.

Despite the protests, Dr. Ringach continued his research. Then in 2006, a bomb intended for one his colleagues, Lynn Fairbanks, Ph.D., was mistakenly placed on the doorstep of her neighbor. “That was the last straw, when they started to play with fire,” he says of the extremists.
He had had enough. Dr. Ringach stopped his research. “There was a point I really felt the safety of my family was at stake,” he says. “It was either my particular line of research in this type of work or putting the safety of my family on the front line.”

Who could blame him? “At the time, Dario was helpless,” Dr. Jentsch, a friend and colleague, says. “He didn’t know what to do. No one would help him do anything.”

After the attempted bombing at Dr. Fairbanks’ home, the FBI got involved. Agents came to campus to talk to researchers who had been targeted by the anti-animal-research extremists. When Dr. Ringach asked one of the agents what he could do to protect his family, he told him, “Buy a gun.”

Although the extremists claimed they had triumphed by forcing Dr. Ringach to end his research, the soft-spoken scientist has a much different perspective. “It was not just me; there are people all over the world who do this work,” he says. “The work continues.”

For the most part, Dr. Ringach kept a low profile. He didn’t talk about what had happened to him. Then, in the early morning hours of March 7, 2009, Dr. Jentsch’s Volvo exploded. For Dr. Ringach it was another turning point. He called Dr. Jentsch and the two scientists decided they would stand up to the extremists. Together they founded Pro-Test for Science, and a month later, they led one of the biggest demonstrations in support of animal research ever held on an American university campus.

Dr. Ringach believes it made a difference. Until then, “people didn’t know it wasn’t just me who was under attack. Now they knew that many researchers were being threatened, that they themselves were under threat. And they also knew that now there was a community they could turn to for support.”

Since the rally, Dr. Ringach has become a very vocal and very public face in support of animal research. In 2009, he and Dr. Jentsch co-authored an article in the Journal of Neuroscience condemning anti-animal-research activists and exposing their harassment of scientists. They also urged more researchers to get involved. “Regrettably, the attacks and messages from the anti-research lobby have been presented to the public with little opposing force from the scientific community,” he says.

Asked why he finally decided to take such a public stance, Dr. Ringach says, “Part of my fear that things were going to get worse was confirmed when David’s car was blown up, when Eydie’s [Dr. Edythe London’s] home was flooded and then the attempt to light it on fire. I was sad. No one was doing anything. I also felt somewhat protected because I wasn’t using animals anymore.”

But he also believed he has an ethical obligation to speak out. “I have a sense of responsibility to society. If this research is not done, people will suffer in the future,” he says.

He points to recent cancer research at UCLA that led to a groundbreaking therapy for a virulent form of breast cancer. “That came from the study of mice,” he says. “Women who have this type of breast cancer can be effectively cured or have a much longer, healthy life because of this work.”

Yet, he also sees the need for more discussion about the issue and regularly speaks at conferences and schools. Recently, he participated in a debate at a Los Angeles high school with another scientist who opposes animal research. “They wanted someone with an opposing viewpoint to demonstrate to the children that people can actually differ about these issues. We had an exchange, and I think it was really good. It’s an important public debate to have. But it’s very difficult when you have people going around blowing up things.”

Mona Gable is a freelance writer in Los Angeles.
At HOME in the HOSPITAL

Hospitalists – specialists who exclusively treat a broad range of inpatients – are changing the face of modern hospital care.

By Marina Dundjerski
Photography by Ann Johansson

It’s a typical day for Jason Napolitano, M.D. He arrives at 7 a.m. at Ronald Reagan UCLA Medical Center and checks the overnight results of his patients’ X-rays, blood work and other lab tests. He reviews their vital signs, medications and updates provided by his medical team. Armed with the most up-to-date information, Dr. Napolitano sets out on rounds, prioritizing the sickest of his 15 hospitalized patients.

His first stop is Jean Hawkins, a 50-year-old woman who had spiked a fever in the night. She had been admitted through the emergency department a week earlier and was being treated for staph pneumonia. The bacteria had entered Hawkins’ bloodstream and also infected a heart valve. Dr. Napolitano conducts a physical examination to look for any new complications that might explain the re-emergence of fever. Finding none, he decides it is safe to continue with the same antibiotics under close monitoring.

He then visits Louise Campbell, 61. Campbell has breast cancer that was left untreated for months as she grappled with her diagnosis and sought additional opinions at institutions across the country before seeking treatment at UCLA. She has a gaping hole where her left shoulder once was – a result of the cancer traveling through her lymphatic system into her arm, eating through lymph nodes, nerves and skin. Overnight she complained of increased pain. Dr. Napolitano adjusts her medications. Because of the abscessed wound and a paralysis of her left arm, Campbell has been lying on her right side almost continuously. Dr. Napolitano contacts the occupational-therapy department to see if they can improve her positioning.

After completing his morning rounds, Dr. Napolitano heads to his...
office. But he doesn’t have far to go. That’s because his office is right there, within Ronald Reagan UCLA Medical Center. Dr. Napolitano is a hospitalist – one of 58 employed by UCLA Health System who work in the Westwood hospital as well as at UCLA Medical Center, Santa Monica and at St. John’s Health Center in Santa Monica.

As the name conveys, hospitalists are physicians who specialize exclusively in the care of hospitalized patients. They come from a variety of backgrounds – internal medicine, pediatrics, family medicine – and hold primary responsibility for inpatients from their admission to discharge. Hospitalists collaborate with specialists, nurses, social workers and other medical professionals to ensure the best transition of care within the hospital and also serve as the liaison to the inpatients’ primary-care doctors.

“We’re general doctors by training and experts in treating patients with acute illnesses that make them sick enough to require hospitalization,” Dr. Napolitano says. “We will take care of people with any medical problem ranging from pneumonia to skin infection to a stroke. Because we do this every day, we get good at it.”

Hospitalists are emerging as a critical group of physicians for the safe and effective running of any acute-care hospital,” says Tom Rosenthal, M.D., chief medical officer for UCLA Health System, “but certainly for this acute-care hospital.”

The reason is simple, Dr. Rosenthal explains. Historically, the hospital service at UCLA was run by academic physicians. These doctors had a lot of research responsibilities but perhaps only two-to-four weeks a year dedicated to clinical rotation as attending physicians overseeing residents. “That model of having someone new every two weeks worked fine for 40 years, when the pace was slower and the complexity of the integration of pre-hospital and post-hospital care wasn’t as great as it is today,” Dr. Rosenthal says.

In addition to their expertise managing the clinical problems of inpatients, hospitalists work to improve the systematic quality of medical care, while simultaneously streamlining operating efficiencies. “The coordination of care is much, much better,” Dr. Rosenthal says. “The ability for patients to get in and out of the hospital efficiently has improved. The continuity of post-hospital care has vastly improved, including getting their home-health needs or skilled-nursing-facility needs met at a much better rate. It’s hard to imagine running the hospital under the old paradigm.”

The expansive growth in the field has been fueled by several factors. With the enactment of the Health Maintenance Organization Act of 1973, the role of the primary-care doctor began to evolve. In the past, physicians routinely cared for patients in both the outpatient setting and, when they were hospitalized, by coming to see them on rounds. By the 1990s, however, primary-care doctors were being required to spend a greater amount of time with outpatients in their offices to determine their care. All the while, managed care emphasized shorter
hospital stays, and fewer and fewer patients were being hospitalized. On the whole, however, hospitalized patients were sicker than they had been in the past and required more specialized doctors and procedures that didn’t exist in the 1970s and 1980s. Patients coming in for surgery often had underlying medical conditions such as diabetes, heart disease, hypertension or emphysema, all requiring health management.

As a result, doctors became less proficient in navigating hospital systems that were themselves growing more and more complex. Insurance- and Medicare-reimbursement practices, multiple consultations with varied specialties and advances in technology and diagnostic tools all played a role. Hospitalists, who initially cropped up organically across the country in various representations, were the innovation that in part allowed primary-care doctors to focus on their patients in the outpatient setting.

“The emergence of the hospitalist was a solution to what was evolving in American healthcare,” says Jan H. Tillisch, M.D., executive vice chair of the UCLA Department of Medicine, who helped form the hospitalist movement at UCLA in the mid-1990s. “It creates effective care in the inpatient setting and so far is working amazingly well.”

More changes are on the horizon. The Obama administration’s healthcare reforms, many of which will be phased in by 2014, are anticipated to affect the need for more hospitalists. Under the new legislation, for example, hospitals will be penalized with reduced Medicare reimbursements for readmissions of patients.

“Hospitalists are more comfortable with a changing healthcare environment because we are not procedure driven,” says Michael Lazarus, M.D., director of the UCLA Hospitalist Service. “We’ll be adaptable to whatever decisions the government gives us under the Affordable Care Act.”

Several UCLA surgical specialties are increasingly calling upon hospitalists to assist with their patients’ medical problems. “What we have found over the years is that it’s too much for a subsurgery specialty, whether it be urology or orthopaedics – the sicker the patient is, the more challenges there are,” says Mark S. Litwin, M.D., M.P.H., chair of the UCLA Department of Urology. “We have long been very collaborative with the hospitalists because they are focused entirely on new thinking and the best practices for perioperative and postoperative care.”

Later that morning, Dr. Napolitano meets with his medical team, which includes a resident, two interns and two medical students. Several new patients were admitted overnight. There is a 32-year-old man with severe abdominal pain, recent weight loss and a lesion on his left leg. Indications point to ulcerative colitis, an autoimmune disease of the colon, often accompanied by a skin condition called pyoderma gangrenosum that causes ulceration of the skin over the shin.

Another man in his 30s entered the ER after swallowing a razor and pieces of a nail clipper, among other things. After being admitted for observation, it was determined he didn’t need surgery – the items would pass on their own. Dr. Napolitano and his team also consulted doctors from the Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA, and they adjusted the patient’s psychiatric medications.

Managing hospital efficiencies and improving quality of care are two of the cornerstones of UCLA’s healthcare system, and hospitalists are playing a significant role in improving both, according to Dr. Rosenthal. When done systematically with the same group of doctors, the health system can adopt procedures that ensure all patients have a safety net. For example, every inpatient at risk for deep-vein thrombosis now receives anti-blood-clotting prophylaxis.

“It used to be that if patients received this prophylaxis 90 percent of the time, that was thought to be good enough. Now we know that it’s not,” Dr. Rosenthal says. “It was virtually impossible to do that with a degree of reliability with a different doctor every two weeks whose main focus was somewhere else.”

Nasim Afsar, M.D., a hospitalist and associate medical director for UCLA Health System’s Quality and Safety Program, is working on added measures, such as formulating an official discharge form – akin to the surgical checklist that counts sponges to make sure nothing is inadvertently left in the patient.

“You actually get to affect patient care at a very fundamental level,” Dr. Afsar says, “not only with the patient in front of you, but really for all patients that come after them. When you implement systemic change and improvement, you shift the
culture toward one where individuals proactively look for opportunities of improvement.”

Dr. Wachter, the hospitalist pioneer, believes that hospitalists will reshape the future of medicine. “We’re beginning to see that hospitalists think broadly and as generalists know more about the general enterprise than anybody,” he says. “They interact with trainees, administrators and surgeons; they go to the ER, they go to the ICU, they see all the parts of the business in a way that no other doctor does. They were brought up believing that improving the performance of the system is a core competence of the field – all things that a good administrator has to do, but tend not to be natural acts for physicians.”

Near the end of a 13-hour day, Dr. Napolitano goes back on rounds. He checks in on Hawkins, the woman with the staph infection. Her fever has broken. Next he stops in to see Campbell. The new pain medications are working, she says, and for the first time in days she is sitting upright. Occupational therapy had put her arm in a sling and she was able to move about better. Campbell and Dr. Napolitano have struck a congenial rapport. She asks many questions and makes a request: Would it be possible to have a notebook and pen so she could write down her observations and symptoms to share with the doctor? Dr. Napolitano brings them to her on a subsequent visit. “That’s a reasonable request to help someone out in a small way – you just do it,” he says.

Says Campbell, with a broad smile: “Dr. Napolitano is like the integrative part of the brain. This place would be a tornado without him.”

In the complex, ever-changing world of modern medicine, physicians must always be prepared to test their assumptions.

By Kathy Svitil
Illustration by Vigg

Case no. 1 is a 49-year-old woman who was vacationing in Mexico when she had a sudden onset of muscle weakness that put her into a wheelchair, unable to move her arms or legs. She had a history of a rare, sometimes autoimmune-related blood disorder and she suffered from dry mouth as well as long-standing symptoms of paresthesia – pins-and-needles sensations – in her face. She initially was diagnosed with acute trichinosis, a parasitic disease caused by eating raw or undercooked pork infected with roundworm larvae. The rationale for that diagnosis, writes UCLA’s Barbara G. Vickrey, M.D., M.P.H., who described the case in a recent issue of the *Annals of Neurology*, “was that there must be a tie to the onset of the illness in Mexico.”

Laboratory findings, however, pointed to an entirely different diagnosis: Sjögren’s syndrome, an autoimmune disorder in which immune cells attack the glands that produce saliva and tears and that can lead to weakness and joint and muscle pain. The woman, noted Dr. Vickrey, was initially diagnosed with trichinosis because of a common type of error in diagnostic reasoning known as a framing effect, which arises when we are unduly influenced by one piece of information – in this case, a visit to Mexico, where the parasitic roundworms that cause the disease are more common – while other pieces of information that would lead to an accurate diagnosis are ignored. These types of cognitive errors arise in clinical medicine because of the shortcuts, or “heuristics,” that doctors unconsciously use to help them sort through large amounts of information to come up with a diagnosis. Heuristics are useful and necessary, says Dr. Vickrey, professor of neurology and a health-services researcher who specializes in improving quality of care, “because they often lead to correct diagnoses in an efficient time frame” – but they also can lead to misdiagnoses.

In one classic example, says Margaret Stuber, M.D., UCLA professor of psychiatry and biobehavioral sciences, “An African-American man comes into the ER in a great amount of pain and wants pain meds. He has track marks, so the doctor decides that he is a junkie, looking for a fix.” It’s an easy conclusion to draw – and one seemingly based on the facts at hand – and yet it is entirely wrong: The “junkie” is, in reality, a patient with sickle-cell anemia, a genetic disease, more common in individuals of African descent, characterized by red blood cells with a faulty “sickle” shape that can block blood flow, causing pain, infections and organ damage. The man’s track marks are not from drug abuse but from repeated blood transfusions, and he was in severe pain because he’s in sickle-cell crisis. “Errors in cognitive reasoning can lead you to make some really bad instantaneous judgments,” Dr. Stuber says.
just how frequent are diagnostic errors? “This issue has not been well-evaluated,” says Dr. Vickrey, in part because of a very human reluctance to talk about something that didn’t go well (as well as concerns about potential liability from admitting error), and also because researchers have traditionally focused on treatment errors (say, giving the wrong medication). “Diagnosis errors are harder to study, because it’s much more difficult to figure out everyone who was missed,” she says. “But, they’re not so rare.”

However, she adds, “it is important to distinguish between an error that leads to harm versus one that could have caused harm. Not all errors mean that something bad happens, but we need to teach people in medical education to be aware of these kinds of errors and understand their causes, so that we can figure out how to avoid them. If you are aware that these errors of thinking can occur, you have a better chance of catching yourself. It’s a ‘metacognition’ approach.”

Cognitive psychologists have grouped the most common of these errors into five different categories – framing effects, as noted above; anchoring heuristics; availability heuristics; representative heuristics; and blind obedience – all of which arise from cognitive mistakes that “largely reside below the level of conscious thinking,” explained Harvard Medical School professor and New Yorker staff writer Jerome Groopman, M.D., in his best-selling book on the topic, How Doctors Think, and yet are inherent in how humans have evolved to think.

Diagnostic errors, note physicians David E. Newman-Toker and Peter J. Pronovost of Johns Hopkins University School of Medicine in a 2009 commentary in the Journal of the American Medical Association, are the “next frontier for patient safety.” They point out that “practical solutions to reduce diagnostic errors have lagged behind those in other areas of patient safety [because] computer-based diagnostic decision support systems, often touted as the optimal strategy to reduce misdiagnosis, have not been validated against patient outcomes, and none is in widespread clinical use.” Indeed, they continue, “Diagnosis is still largely viewed as an individual art rather than evidence-based science.”

Improving diagnostic accuracy, said Drs. Newman-Toker and Pronovost, “will likely require a multifaceted approach that includes renewed emphasis on traditional clinical-skills teaching, exploration of new methods for diagnostic education, major improvements in health information-technology systems, and a substantial investment in the basic science of clinical diagnosis.”

To that end, UCLA Health System and other leading medical centers have put into place a number of “systems solutions,” which can be either high- or low-tech, to help doctors avoid these errors. “Some processes have to exist on a scale larger than just patients,” says Dr. Stuber. “For example, you shouldn’t ever be able to give a patient the wrong medication because it is not marked clearly, or the orders are not written down clearly, or the dosages are not standardized. All of those things should be done according to protocol, with institutional procedures in place, so that it is very hard to make those kinds of mistakes.”

“Diagnosis is still largely viewed as an individual art rather than evidence-based science.”

In places like the Intensive Care Unit, patients may have so many concurrent problems that they can present what Dr. Vickrey calls “information overload,” which can cause physicians to miss certain trends that could inform their decision-making. “So there is ongoing research to create specialized dashboards or graphical displays that make it possible to rapidly identify changes in complex data.” However, she notes, “the systems solutions don’t have to be fancy high-tech approaches.”

Indeed, she says, clinicians may employ their own low-tech methods that can be as simple as posted signs or printed note cards listing the types of cognitive errors and corrective strategies that help them re-evaluate how they are looking at a case. Surgical checklists – akin to those used by pilots since the mid-1930s to describe every step
Phenomenon | Effect | Corrective strategy
--- | --- | ---
Framing effects | Overvaluing a certain piece of clinical data – usually presented early in the information-gathering process – at the expense of more diagnostically useful details. | Play devil’s advocate; deliberately examine the case from alternate perspectives and reevaluate other clinical information.

Anchoring heuristics | Formulating a diagnosis based on first impressions. | Use new information to provide your patient with a “second opinion.”

Availability heuristics | Judging a case based on recall of recent – or very memorable – similar cases. | Ask yourself, “Am I being unduly influenced by my own experience?”

Representative heuristics | Overemphasizing pattern recognition while ignoring the actual prevalence of a disease. Although a patient’s symptoms perfectly match those of rare disease X, common disease Y is a more likely cause. | Pay attention to disease rates (“If you hear hoof beats, think about horses not zebras”).

Blind obedience | Showing undue deference to technology with respect to diagnostic testing. | Check statistics on test performance. How common are false positives? Does a negative result rule out a disease?

Chart (Left):
Cognitive psychologists have identified five common “thinking errors” – inherent in how humans have evolved to process information, and unconscious in nature – that can lead to missed diagnoses. An awareness of the pitfalls can help reduce the chance of misdiagnosis.

that must be taken at every stage of a flight (including during emergencies) – are now increasingly common at top hospitals like UCLA to help reduce and prevent medical error. Such lists, which effectively provide “time-out” periods when doctors, nurses and staff can discuss critical issues and review information that is key to a case, can also help to focus clinicians as they develop diagnoses.

“For example,” says Dr. Vickrey, “if a person comes into the ER with a headache, there is a ‘don’t miss diagnosis’ checklist, with three or four questions that you should ask of every headache patient,” such as if it is the patient’s first headache, or worst headache ever, or if it had a sudden or abrupt onset. “If any of these are positive, the cause of the headache could be a rare but potentially life-threatening problem, such as a ruptured aneurysm. Without that checklist to refer to, some doctors will remember to ask those questions, but some might not. This takes the burden off the doctor to remember.”

The idea, continues Dr. Vickrey, “is that with these systems in place, you don’t have to rely entirely on a person to continuously self-monitor for potential pitfalls in his or her use of heuristics.”

Of course, learning to quite simply think in an entirely new kind of way remains a cornerstone of medical education, especially at UCLA. When students first enter medical school, they immediately encounter what Neil H. Parker, M.D., describes as a “cultural shift” in how they must evaluate a given situation. “One of the problems is that you take a group of very talented individuals who have gone through a system where everything is about knowing the right answer, then you want them to think differently – to include all possible answers,” says Dr. Parker, senior associate dean for graduate medical education at the David Geffen School of Medicine at UCLA. “Previously, they’ve been rewarded when they found the ball – the one right ball. That’s how they were tested. And now, you say to them there may not be a right ball. There might be ball A and B and C and D. It’s a shift to a type of critical thinking that requires much more flexibility.”

Dr. Vickrey concurs: “As doctors, we want to be right, so it is hard to admit that ‘I don’t know this’ or to ask for help. In training doctors, we’re working against the personalities of the type of people who become doctors. So my job,” she continues, “is to teach people to tolerate ambiguity or uncertainty. They have to make decisions without complete data. If you think that a patient has meningitis, you have to treat him or her before you get the results of a lumbar puncture. That’s hard for some...
people. They want all the data before they make a decision. But that takes time, costs more money, and can be bad for the patient. So you have to act without complete information.

Checklists of questions that absolutely must be asked or protocols that have to be followed offer valuable safety nets that help prevent bad outcomes, but they’re still no substitute for a critical mind that asks questions and then evaluates, puts into context, and re-evaluates clinical evidence. After all, although a state-of-the-art Boeing 787 is an incredibly complicated piece of machinery, “the checklist used by its pilot is inclusive,” Dr. Parker notes. In other words, while there may be many steps required to fly such a plane, “there are no unknown steps,” he says. Not so in medicine, where every case is a unique puzzle – and one with an undefined number of pieces that may come in unfamiliar shapes and sizes and with no picture on the box to guide you.

“In medicine, we generally try to teach people how to collect information from their patients and how to evaluate that information, how to generate hypotheses based on the information, and how to test those hypotheses,” Dr. Stuber says. “So what we try to do with students is have them learn to pretty systematically think about what is the most common thing it could be – because common things happen commonly – and what is the most dangerous thing it could be – where you would not want to wait to treat.”

And if it is a third thing, not common enough to crop up frequently (and thus be on the mind) and not deadly enough to ring a standardized set of alarm bells? “Some of it requires pattern recognition,” Dr. Stuber says. “Certain things tend to happen together, so you look for a suite of symptoms. One rule is to avoid premature closure, or stop thinking too early. You try to ask enough questions, so that you can evaluate at least three hypotheses to explain what you see. We teach students to ask open-ended questions – those that can’t be answered by a ‘yes’ or a ‘no’ but require a story, like ‘What happened?’ – and to really listen to the answers, because they may lead to totally different questions.”

Even as they do this, clinicians are also on the lookout for other clues: How much distress does the patient seem to be in? What is his pain level? How is he holding his body? Are there other signs of an acute and potentially very dangerous problem? “If a patient comes in with a headache that she’s had for two weeks, is wincing when she moves or can’t move her neck, but doesn’t seem like she is in a lot of pain,” she says, “it is probably tension or a pulled muscle; if she is having the worst headache of her life with sudden onset, you’d need to be on alert for a potential bleed in the brain or meningitis.”

“When someone is a novice – a medical student in training – we slow the thinking process down,” Dr. Stuber explains. “We give them information, ask them to write it down, and generate hypotheses. We ask them what they need to do next. We have them do research. Once you’re an expert, you go through this process really rapidly. You have a bunch of scenarios in your head and are matching what you’re hearing from the patient against that mental list. It’s almost instantaneous.”

At the same time, however, an experienced doctor is cognizant of both the cognitive errors that can lead him or her down a faulty diagnostic trail, and of what he or she does not know enough about. “One of the easiest ways to believe you know everything is to never be exposed to new material, so we teach people not to trust any textbook that is more than four years old,” Dr. Stuber says. “Effective doctors are people who are continuously curious.”

Kathy Svitil is a freelance writer and director of news for the California Institute of Technology.
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The Fashion Doctor

By Kim Kowsky

If UCLA’s physicians are looking nattier than usual, it may be because they have received a fashion prescription from colleague Roderick Tung, M.D., a cardiologist who, in his off hours, designs a boutique line of men’s shirts. The director of UCLA’s ventricular tachycardia program has outfitted several fellow physicians with his impeccably tailored shirts and handpicked coordinating ties.

Although medicine and fashion may seem unrelated, the two fields knit together for Dr. Tung as elegantly as his mother-of-pearl-buttoned, two-ply Egyptian-cotton shirts. He attributes his twin passions to the same attribute: a sharp eye for detail.

“Many doctors tend not to be that fashion-forward, but some of my best customers are doctors,” says Dr. Tung, whose eponymous Tung shirts sell for $295 at such high-end retailers as Scoop NY and Neiman Marcus.

Nicknamed by colleagues “The Fashion Doctor,” Dr. Tung joined UCLA’s Cardiac Arrhythmia Center five years ago, and he launched his Tung line in 2009. Since then, he has designed three Fall-Winter and three Spring-Summer collections, which have been so well-received that he was asked to be the men’s featured designer for last year’s “Fashion’s Night Out” at Neiman Marcus in Beverly Hills.

His shirts have attracted flattering notice in several publications, including Los Angeles Confidential and InTouch magazines, and he is currently collaborating with celebrity stylists for TV talk-show host Piers Morgan, actor Brad Pitt and soccer star David Beckham.

Born in Chicago, Dr. Tung, 36, is the son of Chinese immigrants who came to the United States for graduate school. When he was a child, the family moved to Cleveland, where his father became chief economist and senior vice president of a bank. The young Tung’s interest in medicine was piqued when his father underwent successful cancer treatment in the early ’80s.

“I remember going to the Cleveland Clinic when I was a kid and seeing all the white coats walking around, and thinking, ‘Wow, they have access to all this privileged knowledge that can save my dad,’” Dr. Tung recalls. “I had this sense of awe and respect for them, and I realized I wanted to go into medicine.”

Dr. Tung credits his older sister, an internist in Las Vegas, and his mother, who authored two Chinese cookbooks and started her own restaurant, cooking school and line of stir-fry sauces, for honing his interest in fashion and design.

While his mother is proud of his work as a cardiologist, a specialty Dr. Tung gravitated toward after he underwent an ablation procedure in his early 20s to correct a cardiac arrhythmia, she takes particular delight in his business success, “probably because a lot of what I do is the same thing she had to do for her business,” he says.
A polymath who speaks fluent English, Mandarin and Spanish and pursued a minor in voice at Northwestern University, Dr. Tung enjoys the challenge of trying to excel in more than one field. Although he had “a little complex” that he wouldn’t be taken seriously as a physician when he started designing shirts, he has been pleased by the response of his colleagues. “My boss and mentor here, Dr. Kalyanam Shivkumar, has been fully supportive of my entrepreneurial and creative spirit,” Dr. Tung says.

While some of his patients are surprised when they learn about his business, “once they interact with me a few minutes, they understand it’s just a dual passion,” he says. “One doesn’t detract from the other.”

And he believes that patients like to see their doctors dress well, says Dr. Tung, who typically wears one of his wide-collared shirts and a silk tie under a custom-tailored suit. “An unassuming attention to detail promotes a sense of confidence in patients,” he says.

There are some 300 shirts in Dr. Tung’s closet, and he typically spends 10- to 20-hour a week working on his Tung line, serving as chief designer, chief operating officer, chief financial officer and publicist. Although he’s considered taking on a partner to help the company grow, he doesn’t want to give up creative control.

“Basically, I’ve grown it to a point where it’s at the limit of where I can manage it comfortably and keep it as a hobby,” says Dr. Tung. “That’s not to say there isn’t room for growth, but it would have to be with the right partner.”

Even if he does fulfill his dream to build Tung into a complete line of fine menswear, Dr. Tung says he wouldn’t give up medicine if “you offered into a complete line of fine menswear, Dr. Tung

Awards/Honors

Dr. Joan Asarnow, professor-in-residence of psychiatry and biobehavioral sciences at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, has been elected president of the American Psychological Association’s Division 53.

Dr. Tumaini Rucker Coker, M.D. ’01, assistant professor of pediatrics, was honored with Academy Health’s 2012 Nemours Child Health Services Research Award.

Dr. Erik Dutson, associate clinical professor of surgery, was recognized by the Science Coalition for innovative federally funded research to train surgeons in computer-mediated, minimally invasive surgery.

Dr. David T. Feinberg, president of UCLA Health System, and UCLA Health System received the 2012 Mathies Award for Vision and Excellence in Health Care Leadership from the Partners in Care Foundation.

Dr. Neal Haffen, director of the UCLA Center for Healthier Children, Families and Communities, has been named an adviser to the California Health and Human Services Agency’s Let’s Get Healthy California program.

Dr. Peter Lawrence, chief of vascular surgery and director of the UCLA Gonda (Goldschmied) Vascular Center, was elected the 2012-’13 vice president of the Society for Vascular Surgery.

Dr. Timothy Miller, M.D. ’63, professor of plastic and reconstructive surgery, received the UCLA Alumni Association’s Award in Community Service for his work as surgical director of Operation Mend.

Dr. Peipei Ping, professor of physiology, presented the Thomas W. Smith Memorial Lecture at the American Heart Association’s annual meeting.

Dr. Heinrich Schelbert, professor of molecular and medical pharmacology, received a Lifetime Achievement Award from the American College of Cardiology.

Dr. Larry Simpson, professor of microbiology, immunology and molecular genetics, was selected as a fellow of the American Academy of Arts and Sciences.

Dr. Paul Terasaki, Ph.D. ’56, professor emeritus of surgery, received the UCLA Medal, the university’s highest honor.

Dr. Rhonda Voskuhi, director of the UCLA Multiple Sclerosis Program, testified before Congress in support of the Modern Cures Act, a bill to provide a pathway for development of drugs that currently are not patentable.

Dr. David K. Welisch, professor-in-residence of psychiatry and biobehavioral sciences at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA, received the Noemi Fisman Award for Lifetime Clinical Excellence from the International Psycho-Oncology Society and the Los Angeles County Psychological Association’s 2012 Distinguished Service to the Profession of Psychology award.

Dr. Ernest Wright, professor of physiology, received the 2012 Homer W. Smith Award from the American Society of Nephrology.

Grants

Summary: To support the UCLA CTSI and create a borderless clinical and translational-research institute that accelerates scientific discoveries and clinical breakthroughs and brings UCLA innovations and resources to bear on the greatest health needs of Los Angeles.

Funding agency: National Heart, Lung, and Blood Institute
Grant amount: $14.5 million
Grant duration: 5 years
Principal investigator: Dr. Karol Watson, co-director, UCLA Cholesterol and Lipid Management Center
Summary: To evaluate novel methods of assessment of subclinical atherosclerotic cardiovascular disease and to determine their utility as predictors of cardiovascular events.

Funding agency: California Institute of Technology
Grant amount: $10.4 million
Grant duration: 5 years
Principal investigator: Dr. Ronald W. Busuttil, executive chairman Department of Surgery
Summary: To examine the effect of the antitumor agent Sorafenib in reducing tumor recurrence in high-risk patients with liver cancer after liver transplantation.

In Memoriam

Dr. Christoph Heinicke, adjunct professor of psychiatry and biobehavioral sciences, died June 17, 2012. He was 85 years old. On faculty since 1972, Dr. Heinicke worked on breaking cycles of abuse and addiction. His research became the foundation for the UCLA Family Development Project, of which he was director.

Kim Kowsky is a freelance writer based in Los Angeles.
In Their Own Words: Tactical-Medicine Physicians

“Shots fired! Officer down! Officer down!”

A life is at stake. Waiting for trained medical support will decrease the wounded officer’s chance for survival. But with some basic medical training, non-medical first-responders can improve the odds. That is the role of the tactical-medicine physician, to educate and train law-enforcement officers in such medical procedures as tourniquet application, airway management, splinting and wound care.

Rushdi Cader, M.D. ’95, Joe Nakagawa, M.D. ’00, and Atilla Uner, M.D., M.P.H. ’02, who completed his residency in emergency medicine at UCLA in 1997, teach lifesaving techniques to local and federal law-enforcement officers. Drs. Nakagawa and Uner support the Hawthorne Police Department, while Dr. Cader founded SWAT Trauma Assistance Training (STAT), a company that manufactures tactical-training products and provides tactical-medicine instruction throughout the state. As an FBI agent for 15 years, John Pi, M.D., another UCLA emergency-medicine resident (1996), is among the nation’s foremost experts in tactical medicine. Currently, he is a supervisory special agent based in Washington, D.C.

Rushdi Cader, M.D. ’95 (standing), demonstrates wound care.

*Tactical physicians typically sacrifice an inordinate amount of their time and resources for the protection of law-enforcement officers. It is a passion born out of a physician’s respect and admiration for those who keep Americans safe. As part of their job, tactical physicians find themselves in the back of an armored vehicle, treating the injured and hoping their team returns safely. SWAT docs like Drs. Nakagawa, Pi and Uner are a special breed: part physician, part law enforcement, and all heart! They are truly selfless. Simplifying emergency-medical care for tactical operators through easy-to-learn acronyms and hands-on training creates a cohesive team of informed participants instead of a disarray of passive and frantic observers. The tactical environment is one in which a few measures applied rapidly and with familiarity by the first officer on scene can save the life of a fellow officer. If in the years that we do this work, one officer is saved, all of the sacrifice is worthwhile.”

-- Rushdi Cader, M.D. ’95
Medical Director, San Luis Obispo Regional SWAT
President, SWAT Trauma Assistance Training
Attending Physician, Sierra Vista Medical Center

Joe Nakagawa, M.D. ’00 (center), during defibrillator training.

*Tactical emergency medicine is simply a specialized form of conventional emergency medicine adapted to save lives in law-enforcement tactical situations. By focusing on life-threatening and limb-threatening conditions that can easily be reversed by simple medical and tactical procedures, tactical medical operators stand in the front line of law enforcement to deliver sound tactics and medical care to save lives.”

-- John Pi, M.D.
Supervisory Special Agent, FBI, Critical Incidence Response Group, National Assets Response Unit

Atilla Uner, M.D., M.P.H. ’02 (right), during defibrillator training.

Emergency medical services (EMS) is the science of providing medical care in an out-of-hospital setting. In order to give lifesaving treatment to the acutely ill and injured with the limited supplies and diagnostics we can carry, we have to distill emergency medical care down to its most essential components. It requires the utmost expertise and skill to know what to do when and what to leave out. Tactical EMS is simply a necessity. We cannot let injured officers remain without help when a crime scene is not secure. And we cannot put private or fire-department ambulance personnel in harm’s way by sending them into tactical situations for which they are not prepared.”

-- Atilla Uner, M.D., M.P.H. ’02
Tactical Physician, Hawthorne Police Department
Associate Medical Director, UCLA Center for Prehospital Care

“I see tactical medicine as my way to help those men and women who put themselves in harm’s way to help others. Law enforcement is a dangerous job, yet for so long officers were not given the tools and knowledge they needed to help themselves or their partners. We’re here to fix that situation.”

-- Joe Nakagawa, M.D. ’00
Medical Director, Hawthorne Police Department
Emergency Medicine Physician, Torrance Emergency Physicians Group
Postcard from Skid Row

Fernando Antelo, M.D. ’07, completed his residency in June 2012 and is currently a fellow at Olive View-UCLA Medical Center.

The David Geffen School of Medicine at UCLA has many opportunities for students to be involved in the community. When I was a student, I volunteered with numerous programs, such as the Mobile Clinic Project at UCLA and the Latino Medical Student Association’s Lennox Health Fair. Now, as a pathologist who trained at Harbor-UCLA Medical Center, I continue to look for clinical volunteering opportunities, especially with organizations that provide comprehensive primary and mental-health services to the homeless and underserved residents of Los Angeles. I recently participated in a program to help the homeless on Skid Row.

Having gone to high school just a few minutes away from Joshua House Clinic, the Skid Row location of the Los Angeles Christian Health Centers (LACHC), I was eager to participate and serve in a neighborhood that played a role in my formative years. On April 6, I jumped in with both feet as one of 15 volunteer physician-providers at LACHC’s Foot Washing Clinic. During the five-hour event, 375 individuals, with chronic conditions, had their feet washed and treated. I experienced a great sense of satisfaction and look forward to the next event.

LACHC is a Federally Qualified Health Center. For more information, visit www.lachc.com.
To volunteer, contact Cheryl Barnes at cbarnes@lachc.com or Jimmy Lam at jlam@lachc.com.

MAA Alumnus of the Year

The UCLA Medical Alumni Association (MAA) Board of Directors has selected Kenneth W. Kizer, M.D. ’76, M.P.H. ’76, as the 2012 Alumnus of the Year. Dr. Kizer is an internationally recognized healthcare thought leader, change agent and quality-improvement and patient-safety advocate. He has been elected to both the Institute of Medicine of the National Academy of Sciences and the National Academy of Public Administration. The transformation of the nation’s Veterans Healthcare System that he engineered in the 1990s is widely viewed as the largest and most successful healthcare “turnaround” in U.S. history. Dr. Kizer received his award October 6, during the MAA 2012 Reunion Weekend.

To read more about Dr. Kenneth W. Kizer, go to: www.medalumni.ucla.edu/spotlight/kenneth_kizer.shtml

2012-13 MAA Executive Board Members

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On the Road

From Left: Karl Finley, M.D. ’98, Rex Yung, M.D. ’85, Laura Pacha, M.D. ’98, Kenneth Chase, M.D. ’88, and Helen Blumen, M.D. ’75, at the Maryland/D.C. regional MAA event hosted by Dr. Blumen.
Photo: Valerie Walker

Calendar

MAA Reunion Weekend
October 4-5, 2013

If you are interested in being a Class Representative, call Valerie Walker, MAA director, at (310) 794-4025.
Today’s and Tomorrow’s Children Fund (TTCF) was born out of the belief that, by pooling their donations, a group of committed individuals can award a major gift every year to make an important difference in the work of talented UCLA pediatrics faculty members, whose cutting-edge research benefits the boys and girls at Mattel Children’s Hospital UCLA. TTCF had 67 members in 2012, each committing $5,000 or more. As a result, $348,000 was directed to three members of the pediatrics faculty. Since its inception in 2006, TTCF has raised more than $1.5 million to fund 13 innovative research projects.

- Dr. Tom Belle Davidson, assistant professor of pediatric hematology/oncology, received the grand prize for her research on dendritic-cell vaccination for pediatric high-grade glioma patients.
- Dr. Joyce Wu, associate professor of pediatric neurology, earned an award for her work on high-frequency oscillations as a potential biomarker for pediatric epilepsy.
- Dr. Julian Martinez-Agosto, assistant professor in the departments of Human Genetics and Pediatrics, received an award for his research on genetic risk factors for autism and cancer predisposition.

To learn more about Today’s and Tomorrow’s Children Fund, go to: [www.uclhealth.org/ttcf](http://www.uclhealth.org/ttcf)

**Raising Awareness of Ovarian Cancer**

The Ovarian Cancer Circle/Inspired by Robin Babbini is a non-profit 501c3 organization guided by a board of directors, gynecologic oncologist and medical advisors. The members are committed to creating an ever-expanding ring that encompasses networking, education and support for women of all ages and their families and friends who are affected by ovarian cancer. Through a fundraiser on April 26, 2012, at The Comedy Store – “Happily Ever Laughter,” starring Sinbad – The Circle contributed $20,000 to the work of the G.O. (Gynecologic Oncology) Discovery Lab, directed by Dr. Sanaz Memarzadeh of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA. The lab team focuses on how to achieve earlier diagnoses and improve treatments for ovarian and endometrial cancers. The goal is to target these malignancies at their stem-cell roots, using a combination of molecular and hormonal therapies. Paulinda Schimmel Babbini, The Circle’s president, lost her 20-year-old daughter, Robin, to ovarian cancer and has made it her life’s work to heighten awareness of signs and symptoms, particularly among young women. The gift will help underwrite pioneering basic-science and clinical research pursuits in the G.O. Discovery Lab ([www.godiscoverylab.com](http://www.godiscoverylab.com)).

To learn more, go to: [www.theovariancancercircle.org](http://www.theovariancancercircle.org)
Events

Sherry Lansing, chair of the UC Board of Regents, and her husband, Academy Award-winning film director William Friedkin, hosted a reception in their home on May 2, 2012, to hear Dr. Richard J. Shemin, chief, Division of Cardiothoracic Surgery, discuss “Innovations and Excellence in the Treatment of Cardiac Disease.” Dr. Shemin told guests about advances being made by division faculty in surgical techniques, including robotic and minimally invasive procedures, specialized critical care and basic-science and clinical research. Due to financial challenges facing public academic medicine, Dr. Shemin has established an Innovation in Cardiovascular Diseases Endowment Fund for the division. For more information about this fund or for questions about UCLA Cardiothoracic Surgery, contact Health Sciences Development at (310) 206-3079.

On June 6, 2012, the UCLA Longevity Center honored Sidney Poitier, Jane and Terry Semel, Dr. Peter Whybrow and Shlomo and Steve Rechnitz at its ICON Awards gala at the Beverly Hills Hotel. Patti Davis was guest speaker, Natalie Cole performed and Lisa Ann Walter served as host. Quincy Jones presented the ICON Award for Artistic Excellence to Mr. Poitier, who, in 1963, became the first black recipient of an Academy Award for Best Actor in a Leading Role (Lilies of the Field). Recently, he received the Presidential Medal of Freedom.

The ICON Award for Visionary Leadership in Science and Medicine was given to the Semels. Terry Semel, chairman and CEO of Windsor Media, and Jane Bovingdon Semel, founder of Jane Inc., which produced the Face The Issue PSA campaign, endowed the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA. The ICON Award for Visionary Leadership in Science and Medicine also was presented to Dr. Whybrow, executive chair of the UCLA Department of Psychiatry and Biobehavioral Sciences and director of the Semel Institute.

The Rechnitz twins received the ICON Award for Visionary Leadership in Business and Philanthropy. In 2004, Shlomo Rechnitz founded Brius Healthcare Company, and he also is co-founder, with his brother Steve Rechnitz, and CEO of Twin Med, LLC. They have contributed millions of dollars to cancer research.

The UCLA Longevity Center, directed by Dr. Gary Small, aging and memory expert, is an essential component of the Semel Institute. Through pioneering research and innovative programs, it is improving lives.

The Dream Team of Mattel Children’s Hospital UCLA held its first event, Summer Under the Stars, on June 21, 2012, at the London Hotel in West Hollywood. It increased awareness and encouraged philanthropic support of the hospital, raising more than $30,000 through memberships and donations. The Dream Team is a fast-paced group of like-minded young professionals who want to make a difference in children’s health. For more information, visit: www.uclahealth.org/dreamteam.

Fourteen-hundred guests, including pediatric patients and their families, attended the 13th Annual Mattel Party on the Pier, benefiting Mattel Children’s Hospital UCLA, on Sunday, October 21, 2012, at Pacific Park on the Santa Monica Pier. Highlights included unlimited amusement-park rides, a silent auction featuring unique memorabilia and experiences, arts and crafts, great food and carnival games stocked with prizes donated by Mattel and run by celebrities from popular children’s television shows. Proceeds support the highest priorities of Dr. Sherin Devaskar, physician-in-chief. www.partyonthepier.ucla.edu.
Gifts

The Joyce and Saul Brandman Foundation pledged $2 million to the Division of Pulmonary and Critical Care Medicine. The Brandmans provided long-standing support for the division, including the establishment of the Saul Brandman Endowed Chair in Pulmonary Arterial Hypertension. President and managing director of the foundation, Mrs. Brandman, as an engaged philanthropist and committed proponent of excellence in healthcare, continues to expand her and the late Mr. Brandman’s vision of improving lives. This contribution will underwrite pioneering research and exceptional clinical care in the field.

The Annie E. Casey Foundation awarded $164,995 to Dr. Jeanne Miranda in the Center for Health Services and Society. This gift funds an intervention developed for families adopting older children from foster care. The goal is to help the families adjust and improve the functioning and mental health of the adoptees.

The Furlotti Family Foundation has made a $300,000 pledge and $100,000 first payment to support the Mindful Awareness Research Center. In addition, the foundation contributed $100,000 to the Family Development Project, which enables the project to carry on the legacy of its founder Dr. Christoph Heinicke, who passed away on June 17, 2012.

Film executive Ted Gagliano has committed $1 million to support the UCLA Department of Neurosurgery’s brain cancer research. He was invited by a colleague to attend UCLA Neurosurgery’s 2011 Visionary Ball the same night that one of his closest friends was undergoing surgery to remove a glioblastoma, a fast-growing, lethal brain tumor. Inspired at the event by survivors’ stories, Mr. Gagliano learned of UCLA’s great work in the area and wanted to do more to help. Funds from his pledge will allow Dr. Linda Liau, Ph.D. ’99, Director of the UCLA Brain Tumor Program, to test a new approach that trains a patient’s immune system to recognize and destroy brain cancer cells. In addition, he joined the department’s board of advisors and hosted the first Golden Portal Awards, an annual event that benefits and pays tribute to excellence in film and science. In recognition of Mr. Gagliano’s contributions, he will be presented with the prestigious Luminary Award at the 2012 Visionary Ball.

The Merkin Family Foundation completed its pledge to the UCLA Department of Neurology with a recent gift. The foundation’s contributions created the Richard Merkin Foundation for Neural Regeneration at UCLA to support Dr. Bruce Dobkin’s research in neural repair and rehabilitation.

Shlomo Rechnitz and Steve Rechnitz contributed to the UCLA Longevity Center’s ICON Awards Gala on June 6, 2012, at the Beverly Hills Hotel. The twin brothers received the ICON Award for Visionary Leadership in Business and Philanthropy at the annual fundraiser.

The Seaver Institute has made a gift of $125,000 to the Jonsson Cancer Center Foundation to advance groundbreaking melanoma research under the direction of Drs. Antoni Ribas and Roger Lo. To date, the institute has contributed $250,000 to prevent acquired resistance to effective new targeted therapies for BRAF-mutated metastatic melanoma.

The Sidell-Kagan Foundation made a $400,000 gift to provide continuous support of the Katherine & Benjamin Kagan Alzheimer’s Disease Treatment Program at UCLA. The program provides access for patients to the latest experimental therapies and offers eligible subjects participation in various research studies related to memory and dementia.

Chairs of Distinction

The UCLA Department of Neurology received a $1-million commitment to establish the P. Gene and Elaine Smith Chair in Alzheimer’s Disease Research. Mr. Smith created the chair to honor his late wife, who developed Alzheimer’s disease four to five years before her death in July 2010. He and his family were impressed with the work of Dr. Joshua Grill in this area of medicine at UCLA. Mr. and Mrs. Smith were married for 62 years and traveled the world together until they were in their 80s. After his retirement, Mr. Smith was awarded a fellowship to serve as a scientific adviser to the U.S. Senate. The family also has contributed to colon-cancer research and saving land in the Sierras from development.

Dr. John J. Kuiper has established the John J. Kuiper Chair in Nephrology and Renal Transplantation, which will promote translational research, education and ethical practice in these fields. Dr. Kuiper graduated from Cornell University Medical College in 1961, subsequently completing his internship, residency and chief residency at the University of Rochester Medical Center. For more than three decades, he has contributed to excellence in healthcare in Los Angeles through his practice of internal medicine and nephrology. He also has been a member of the volunteer faculty in the UCLA Department of Medicine since 1970. Dr. Kuiper’s generous and visionary investment will support the teaching and research activities of distinguished faculty.
Lessons Learned:
Get Up and Go See the Patient

By Dr. Alan L. Kaplan

For as long as anyone can remember, surgical interns at Veterans Administration Hospitals have covered all of the surgical services for an entire hospital while they are on overnight duty. They handle everything from spine fractures and broken hands to appendicitis and arterial embolus, earning the moniker “Surgeon of the Day.”

That came to an end in July 2011. In response to increasing concerns regarding resident fatigue and patient safety, the American College of Graduate Medical Education (ACGME) restricted medical intern work hours to a maximum of 16 contiguous hours, effectively eliminating the traditional 30-hour shift.

There have been mixed reactions to the changes. Some believe the work restrictions will lead to less fatigue and improved safety. Others feel that reducing hours limits the experiences a resident accrues, threatening a resident’s competence and confidence.

All that remains to be seen. For me, the most valuable lessons of my training occurred during a particularly challenging shift. I’d arrived at the hospital at 4 a.m. and hadn’t eaten anything or gotten a moment’s reprieve the entire day. My pager finally quieted down the next day at 2 a.m. so I decided to get a little sleep before having to wake up in two hours to gather data for rounds that morning. Like some cruel prank, my pager went off the exact moment my head hit the pillow. A nurse wanted to let me know that a patient who was three days out after a colon resection for cancer had “blood oozing on the gauze over his incision.”

Incisions always ooze – that’s what they do, I told myself. This can wait a few hours, can’t it? But the words drilled into every intern who’s on overnight call echoed in my ear: Go see the patient. When I took down the patient’s dressing I was staring at his intestines trying to poke through the staple line reinforcement. The wound had opened up and the bowel was exposed – a true surgical emergency. I covered the wound with moist gauze and alerted the senior resident and operating-room staff. The patient was in the OR within the hour, his wound was closed, he was given strong antibiotics, and he ultimately did very well. The next morning, the attending told the patient to “shake this young doctor’s hand. He saved your life.”

The diagnosis was not difficult. I was staring at bowel, after all. And the decision to go see the patient may not seem so admirable; as a doctor, that’s what I am supposed to do. One could argue that had I not been in the hospital for 22 hours, maybe I wouldn’t have even had that internal discussion as to whether or not to go see the patient. But that night will stick in my head as a quintessential learning experience in decision-making. The new crop of surgical interns will have to work twice as hard to learn the same amount of decision-making skills in half the hours.

On my last call night as an intern, I actually slept for more than four hours between pages. At 3 a.m., I was called to the bedside of a patient who was terminally ill with metastatic bladder cancer. In discussion with the palliative-care team and his family the day before, we instituted comfort measures. Over the phone, the nurse told me that his heart rate had slowed. I had grown close to this man and felt comforted sitting at his bedside as his wife and daughter mourned. I moved deliberately and carefully as I checked for breath sounds and a pulse. As I announced the time of death at 4:50 a.m., I took a moment to appreciate the honor of caring for this veteran and realized that the grueling long nights on call had afforded the most valuable of lessons that a young surgical trainee can learn: Go see the patient. The action is at the bedside.
Hospitalists like Dr. Jason Napolitano are practicing what is becoming the fastest-growing specialty in the history of modern American medicine.