UCLA's Latest Medical Research Advances

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New Therapy Tested in Mice Could Chase Away Cat Allergies

A hybrid protein designed to block cat allergies successfully prevented allergic reactions in laboratory mice, as well as in human cells in a test tube, reported a UCLA study in the April 2005 issue of *Nature Medicine*.

When an allergic person is exposed to allergens—pieces of protein found in cat saliva or dander—the immune cells spew out histamine, a chemical that provokes the itchy eyes, sneezing and runny nose associated with allergies.

UCLA scientists tethered the cat allergen to a human antibody and dubbed the hybrid protein GFD, or gamma *Feline domesticus*. The cat side attaches to antibodies on the surface of the immune cell, while the human end stops the cell from releasing histamines, preventing the allergic reaction.

Led by Dr. Andrew Saxon, chief of clinical immunology and allergy, researchers cultured GFD and cat allergen in blood donated by people allergic to cats, and measured the level of resulting histamine.

“The blood cultures mixed with GFD released 90 percent less histamine,” Saxon says. “This suggests that GFD prevented the immune cells from reacting to cat allergen.”

GFD also blocked the ability of human allergic antibodies to release histamine in mice genetically bred to react to human allergic antibodies.

Scientists also injected a second set of mice with cat allergen to produce an allergic response. After treating some of these mice with GFD, the team exposed the airways of all the mice to cat allergen.

The untreated animals developed asthma-like lung symptoms and generalized allergic reactions. The mice treated with GFD did not react to the cat allergen.

Saxon believes the molecule has the potential to prevent allergic reactions long after injections stop. He hopes the approach will lead to a new therapy for cat allergies in humans, as well as for deadly food allergies, such as to peanuts.

"A new hybrid protein treatment lowered immune cells’ histamine release in reaction to cat allergen (right), compared to the untreated cell (left)."
Study Shows Green-tea Extract’s Potential as Anti-cancer Weapon

A Jonsson Cancer Center study on bladder cancer cell lines in culture demonstrated green-tea extract’s ability to target tumor cells while leaving healthy cells alone. Clinical Cancer Research published the research on Feb. 15, 2005.

Led by Dr. JianYu Rao, associate professor of pathology and laboratory medicine, scientists demonstrated that green-tea extract interrupts a cellular process that enables bladder cancer cells to invade other parts of the body. Called actin remodeling, the process is regulated by several cell-signaling pathways, including one called Rho.

Green-tea extract switched on Rho signaling, reorganizing the cancer cells’ actin skeletal protein and making them adhere more tightly. Both results limited the cells’ ability to move.

“Green-tea extract may keep the cancer cells confined locally, where they are easier to treat with better prognosis,” Rao says. “Green-tea extract interrupts the invasive process of the cancer.”

The next phase of his research will analyze urine from bladder-cancer patients and look for specific biomarkers associated with actin remodeling and activation of the Rho signaling pathway.

“We’re hoping the results from these studies will tell us who will best benefit from the agent,” Rao says.

Bladder cancer is the fifth most common cancer in the U.S., with about 56,000 new cases diagnosed each year.

Green-tea extract promotes the formation of actin fibers (stained green) in cancer cells. The fibers promote increased cell attachment (red), which helps to prevent cancer cells from spreading.

Research Disputes Antidepressant/Suicide Link; Scientists Fear Rise in Deaths from Untreated Depression

Challenging claims linking antidepressant use to suicidal behavior, a UCLA study found that American suicide rates dropped steadily after the introduction of Prozac and other selective serotonin reuptake inhibitor (SSRI) drugs. The February 2005 edition of Nature Reviews Drug Discovery reported the research.

Dr. Julio Licinio, professor of psychiatry and endocrinology and a researcher at the Semel Institute for Neuroscience and Human Behavior, worked with fellow psychiatrist Dr. Ma-Li Wong to conduct an exhaustive database search of studies published between 1960 and 2004 on antidepressants and suicide.

The team reviewed each piece of research and created a timeline of key regulatory events related to antidepressants. Then they generated charts tracking antidepressant use and suicide rates in the United States. What they found surprised them.

“Suicide rates rose steadily from 1960 to 1988 when Prozac, the first SSRI drug, was introduced,” Licinio says. “Since then, suicide rates have dropped precipitously, sliding from the eighth to the 11th leading cause of death in the United States.”

Several large-scale studies in the United States and Europe also screened blood samples from suicide victims and found no association between antidepressant use and suicide.

“Researchers found blood antidepressant levels in less than 20 percent of suicide cases,” Licinio notes. “This implies that the vast majority of suicide victims never received treatment for depression.

“Our findings suggest that these individuals who committed suicide were not reacting to their SSRI medication,” he adds. “They killed themselves due to untreated depression. This was particularly true in men and in people under 30.”

The authors caution that regulatory actions to limit SSRI prescriptions may increase death rates from untreated depression, the leading cause of suicide.

Depression affects some 10 percent of men and 20 percent of women in the United States during their lifetime. Ten percent to 15 percent of depressed people commit suicide.

This figure charts the drop in U.S. suicide following Prozac’s introduction (indicated by arrow) into the American market.
UCLA Study Links Changes in Brain Chemistry to Premenstrual Syndrome

UCLA neurologists have uncovered a biological basis for the behavior that often accompanies premenstrual syndrome. Reported May 15, 2005, by Nature Neuroscience, the team found visible changes in brain chemistry that may underlie behavioral fluctuations.

Dr. István Mody, Coelho Professor of Neurology, discovered female mice were more anxious when their hormone levels paralleled those of premenstrual women. He examined the rodents’ brains and found that the neurons held lower levels of delta GABA, a key receptor subunit that prevents nerves from firing too often and has been linked to epileptic seizures.

“We’ve known for a while that epileptic women are prone to seizures around menstruation, when progesterone levels are low,” he says.

Mody hypothesizes that premenstrual women’s seizures, irritability and anxiety are side effects of neurons firing unchecked. The discovery may also relate to postpartum depression and mood swings during pregnancy.

The team’s next step will be to identify the mechanisms behind these changes.

“We want to reveal the molecular identities of the players responsible for reducing the number of these receptors on the surface of nerve cells,” he notes.

New Dosing Approach Boosts Height 50 Percent More than Current Methods in Children with Short Stature

Challenging the current weight-based approach to growth hormone therapy, a new dosing model improved height outcomes in children with severe short stature due to a growth-hormone deficiency or unknown (idiopathic) cause. The UCLA findings were presented June 6 at the 2005 annual meeting of The Endocrine Society.

The new dosing approach involves the serum levels of insulin-like growth factor-1 (IGF-1), the hormone that mediates growth hormone’s effect on children’s development.

Led by Dr. Pinchas Cohen, chief of pediatric endocrinology at Mattel Children’s Hospital at UCLA, researchers randomly administered one of three types of growth-hormone therapies to prepubescent children diagnosed with severe short stature.

One group received a conventional growth-hormone dose according to weight. Two other groups received a dose adjusted to achieve either an IGF-1 level equivalent to the mean for their age and gender, or the upper limit of normal for IGF-1.

Cohen’s team found that the group of children whose dosage was increased to achieve a higher IGF-1 level grew 50 percent more than the other children. The higher IGF-1 approach also enhanced the growth of patients with growth-hormone deficiency or idiopathic short stature.

“The dose designed to achieve the higher IGF-1 level produced especially meaningful increases in height compared to conventional methods of determining doses by weight,” Cohen observes.
UCLA-pioneered Surgery to Treat Vocal-cord Spasms and Restore Voice Shows Long-term Success

The first large, long-term study of patients who had surgery to control vocal-cord spasms showed excellent results in the majority of cases, reported UCLA research presented May 14, 2005, at the 126th annual meeting of the American Laryngological Association.

“We are very encouraged by our results,” says Dr. Dinesh Chhetri, assistant professor of head and neck surgery, who presented the findings. “When spasmodic dysphonia symptoms do not return within one year, they generally will not come back. Our findings suggest that this surgical technique provides the first permanent solution to treating the condition.”

Spasmodic dysphonia is a neurological condition that disrupts nervous signals to the vocal cords, preventing them from vibrating properly. Reducing the voice to a strangled, choppy whisper, the disorder affects 50,000 people in the United States, and its cause remains unknown. Botox injections can provide temporary relief, but are not effective for everyone.

In 1993, Dr. Gerald Berke, UCLA chief of head and neck surgery, pioneered the first surgery to permanently treat spasmodic dysphonia symptoms. In this procedure, the surgeon severs the nerve that sends abnormal signals to the vocal cords, and then attaches a healthy nerve from the throat to maintain the vocal cords’ muscle tone.

Chhetri’s team surveyed 131 patients at an average of four years post-surgery. Of the 81 patients who completed the survey, 91 percent expressed greater satisfaction with their vocal quality post-surgery compared to post-Botox. Overall, 83 percent noted that the procedure significantly improved their physical, social and emotional well-being.

“The surgery continued to provide long-lasting relief of vocal cord spasms and voice breaks in a majority of patients,” Chhetri notes. “This suggests that the procedure will expand as an important therapeutic technique for the treatment of spasmodic dysphonia.”

Statin Therapy within 24 Hours After Heart Attack Cuts Patients’ In-hospital Deaths by More than Half

UCLA researchers discovered that treating cardiac patients with a statin drug within 24 hours after a heart attack cut in-hospital death rates by more than half. The American Journal of Cardiology reported the findings on Sept. 1, 2005.

“We knew that long-term statin therapy was beneficial, but this study offered the strongest clinical support to date of the early protective effects of statins immediately following a heart attack,” said Dr. Gregg Fonarow, professor of cardiology and Eliot Corday Chair in Cardiovascular Medicine and Science.

UCLA researchers studied data from more than 170,000 patients in the National Registry of Myocardial Infarction 4, a database of patients hospitalized due to heart attack.

They found that patients who received statin therapy before hospitalization and within 24 hours after heart attack were 54 percent less likely to die in the hospital compared to patients who did not receive statin therapy. That risk reduction rose to 58 percent in heart-attack patients who received the drugs after hospitalization but who had no previous statin use.

“We were surprised that statin therapy showed such a striking effect immediately after a heart attack,” says Fonarow, also director of the Ahmanson-UCLA Cardiomyopathy Center. “Statins provided protection from other heart-attack complications, as well.” They included a lower incidence of cardiac arrest, cardiac shock, cardiac rupture and ventricular fibrillation.

Statins work by increasing nitric oxide in the cardiovascular system. This result reduces inflammation, which may help limit cell damage from a heart attack.

The next step is to develop a randomized clinical trial to corroborate the UCLA team’s observations. Fonarow believes that early statin use may become a standard treatment for heart-attack victims upon their arrival to the emergency room.

Treating cardiac patients with a statin drug within 24 hours after a heart attack cuts in-hospital death rates by more than half.
he conclusion of the 2004-2005 academic year brought much in the way of good news to the school of medicine and the medical center. I am pleased to announce that after two years of planning and more than 12 months of intensive activity by our faculty, students and staff, the David Geffen School of Medicine at UCLA has received reaccreditation without major deficiencies from the Liaison Committee on Medical Education (LCME), a joint program of the American Medical Association and the Association of American Medical Colleges that accredits medical schools in the United States and Canada. Full accreditation has a term of eight years, but the accreditation period can be reduced for any institution if significant improvements are needed.

Leadership for our entire accreditation endeavor was provided by Joyce Fried, director of special projects, and Dr. Alan Robinson, executive associate dean and vice chancellor for medical sciences. The effort that they and the rest of their team put forth was truly amazing.

LCME accreditation is based on compliance with 129 standards in the following categories:

❖ Institutional setting
❖ Educational program for the M.D. degree
❖ Medical students, including admissions, student services, and the learning environment
❖ Faculty
❖ Educational resources

The evaluation delves into every aspect of medical school operations and personnel, both in Westwood and at our teaching affiliates. The process calls for a comprehensive self-study and concludes with a site visit.

In preparation for this process, the school leadership and staff spent more than a year gathering data to answer hundreds of questions provided to us by the LCME. This “database” demonstrated how we comply with the standards in each of the categories listed above. A steering committee and seven subcommittees were formed, each focusing on a specific area. These committees analyzed the information in the database and drafted a report on their findings, which was submitted to the steering committee.

The steering committee used the information from the subcommittee reports to identify our strengths and weaknesses in each category. The results were distilled into a self-study report that was submitted to the LCME along with the database, detailed descriptions of each of our courses and clerkships, and a separate report written entirely by the students.

Once the self-study was submitted, preparation for the site visit began. Our LCME site visit team was composed of six distinguished members from around the country, including a medical student member. The visit itself, which took place in January, lasted three days, and the fast-paced schedule of meetings and tours included interviews with school leadership and more than 150 faculty, staff and students. On each of the three days, the site visit team met over lunch with approximately 12 medical students from all four years in the UCLA, Drew, and UCR programs. On the last day, the site visitors conducted an exit interview with me, as well as with the Executive Vice Chancellor and Provost, to summarize their findings.

The team’s final report was submitted to the LCME for discussion and modification in early June. At the end of June we were notified of the LCME’s findings and decision. The findings identified many areas of institutional strength and a few areas where improvement is indicated. The strengths include:

❖ A stable, visionary, effective and accessible leadership team committed to the educational mission and widely respected by students and faculty
❖ Notable faculty support for and commitment to the recent comprehensive curriculum change, including personal participation by department chairs and support of faculty time for teaching
❖ Significant personnel resources to support the educational program, including specialists in curriculum design, faculty development, evaluation and information technology
❖ A commitment to diversity resulting in a commendable level of diversity among the student body and faculty
❖ Medical student praise for the high level of academic and student support services from faculty and members of the administration
❖ Opportunities for medical students to participate in research and the high percentage (70 percent) of graduates in recent classes who have completed an independent research project
Exceptionally strong core financial support for the medical school, especially from governmental and philanthropic sources.

Suggestions for improvement were centered on the following three standards:

- Students assigned to all campuses should receive the same rights and support services.
- There must be a system to assist students in career choice and application to residency programs, and to guide students in choosing elective courses.
- The health professionals who provide psychiatric/psychological counseling or other sensitive health services to medical students must have no involvement in the academic evaluation or promotion of students receiving those services.

All of these issues have been corrected, and in none of them were we totally out of compliance.

The LCME accreditation process is uniquely valuable to us because it allows us to step back and evaluate our own programs, and to receive feedback from expert medical educators on how we can improve our efforts. Their feedback was both informative and encouraging.

A second item of good news is that our National Institutes of Health (NIH) funding levels are continuing to rise, and we rank eighth in the United States in NIH grant support. In 2004, our faculty members were awarded $286 million in grant funding, showing a steady rise over the past decade from the $92.5 million awarded in 1994. This outstanding achievement is a testimony to the quality of scientists at UCLA and their commitment to cutting-edge research that can be translated directly to the care of our patients.

Finally, UCLA Medical Center, which is celebrating its
“We believe this is the right campus at the right time to take a leadership position in the science involving embryonic stem cells and applying what we have learned to the improved diagnosis and treatment of human diseases.”

50th anniversary this year, was ranked “Best in the West” for the 16th consecutive year and fifth in the nation in U.S. News & World Report’s annual survey of the best hospitals in America. The Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA was ranked “Best in the West” for the 13th consecutive year. The Division of Geriatric Medicine was once again ranked number one in the nation. This year, 16 specialties are ranked in the top 20 in the United States with 12 of them in the top 10.

I hope you are as proud of the accomplishments of the school of medicine and medical center as I am. We are committed to our efforts to be the very best and are grateful for your continued support.

Stem Cell Research

On November 2, 2004, the State of California thrust itself into the national spotlight when the voters approved Proposition 71, which provides $3 billion in funding for stem cell research. This legislation ensures that California, and indeed the United States, will become a major participant in the world-wide study of embryonic stem cells and hopefully in the years to come, their development into major therapeutic tools.

Proposition 71 created the California Institute for Regenerative Medicine, an institute that is overseen by the Independent Citizen’s Oversight Committee (ICOC) that is composed of a diverse group of scientists and disease advocates. Representation on this committee includes the five University of California deans of the schools of medicine or their designees. For this past year, it has been both an honor and an exhilarating experience for me to sit on this committee and participate in the evolution of this new state agency. The committee has been working at a furious pace to put in place the all-important infrastructure that will enable the California Institute for Regenerative Medicine to provide funds in support of research grants, facilities and graduate student training.

In response to this initiative, Chancellor Albert Carnesale enthusiastically endorsed and provided resources for the creation of the Institute for Stem Cell Biology and Medicine that is described in this issue of UCLA Medicine. The director of the Institute is Dr. Owen Witte, and his co-directors are Dr. Judith Gasson and Dr. Uptal Banerjee. They have been working diligently to organize campus researchers addressing issues of stem cells to fulfill the promise of stem cell research.

Human embryonic stem cells were identified approximately 10 years ago. The reason the promise and excitement of embryonic stem cell research is so great in large part is related to two major features. One, embryonic stem cells can grow in a culture dish and differentiate to form any cell type in the human body. Two, the ability to differentiate creates a therapeutic potential that is unlimited. One can readily imagine neurogenic stem cells being used to treat Parkinson’s disease and to aid in spinal cord regeneration. Similarly, scientists are hopeful that stem cells can be used to generate pancreatic beta cells that produce insulin, which would provide a major treatment for type I diabetes. Similar examples can be found for diseases involving other organ systems and specific cell types. Nevertheless, the challenge that Drs. Witte, Gasson, Banerjee and all those working in this area currently have, and will have in the future, is that finding the proper conditions for the differentiating of human embryonic stem cells into specific cell types is still formidable scientifically. Growing these cells has been difficult, but in the judgment of many outstanding physicians and scientists, the application of stem cells to cure human disease will happen, and the only uncertainty is when it will happen.

All of us at UCLA are thrilled to be part of this grand initiative in the State of California and to be major participants in this area of research. Fortunately for UCLA, and ultimately our patients, much experience has been gained by scientists here and elsewhere working with adult stem cells and cord blood stem cells. We believe this is the right campus at the right time to take a leadership position in the science involving embryonic stem cells and applying what we have learned to the improved diagnosis and treatment of human diseases.

Finally, all of us at UCLA recognize the ethical controversies that swirl about this fascinating and important area of research. We are respectful of the arguments and individuals on both sides of the embryonic stem cell controversy. I can reassure you that not only will we work hard to bring stem cell research to fruition, but that we will be respectful of the concerns that have been voiced by various segments of society and will follow the guidelines laid down so carefully by the National Academy of Sciences with regard to embryonic stem cell research. I am confident that in future issues of UCLA Medicine, Drs. Witte, Gasson and Banerjee, and other members of the UCLA stem cell scientific community, will present updates on their accomplishments in this field.

Gerald S. Levey, M.D.
Vice Chancellor, UCLA Medical Sciences
Dean, David Geffen School of Medicine at UCLA
They are the source of all we become—unspecialized cells that give rise to all of the body's tissues: lungs, liver, brain, hair, heart—and they are the source of great excitement among scientists. Armed with ever more powerful tools, researchers from a wide array of disciplines are exploiting the power of stem cells to reveal vital information about human development, including the events that lead to serious medical conditions such as cancer and birth defects. **BY DAN GORDON**
injury, brain tumors and multiple sclerosis; musculoskeletal disease; metabolic diseases such as diabetes; and genetic diseases.

In establishing the institute, Chancellor Albert Carnesale announced that UCLA will provide $20 million over five years to enable teams of researchers to compete for state grants created by the passage of Proposition 71, as well as other funding. The money will fund the recruitment of a dozen new faculty positions, salaries, expansion of highly sophisticated laboratory space, infrastructure and supplies. Already, the institute has received a three-year, $3.75 million grant from the state, the largest single institution award, to train 16 predoctoral, postdoctoral and clinical research scholars in stem cell science.

The utilization of stem cells to treat disease is not new. At UCLA, bone marrow-derived stem cells have been used to reconstitute cancer patients’ blood systems after high levels of chemotherapy or radiation since the 1960s, in the form of bone marrow transplants. More recently, researchers at UCLA have explored the idea that transplanted stem cells derived from the fat taken in liposuction procedures can help treat patients with narrowed, blocked arteries and weakened cardiac muscle. But these and other studies have employed adult stem cells. Although researchers at the institute will continue to work with adult stem cells, the expectation that there will now be greater access to human embryonic stem cell lines changes the equation. “Most scientists don’t believe that the stem cells found in the adult will have the repertoire of developmental capabilities that we see in an embryonic stem cell,” says Gasson.

Under Proposition 71, priority for grants will be given to stem cell research that meets the state institute’s criteria and is unlikely to receive federal funding. That means that in addition to studies with adult stem cells and so-called presidential stem cell lines—the embryonic lines created before April 9, 2001, which have been the only ones available for federally funded investigations—researchers eventually hope to work with previously inaccessible embryonic lines.

Adult stem cells, which help the body replace tissues that must be renewed continually throughout life, are descended from embryonic stem cells—the “mother” cells that give birth to the daughters that become the different parts of the body. Scientists obtain adult stem cells for research from many organs and tissues in the body, including the brain, blood vessels, skin and bone marrow; these cells are generally limited to becoming the cell type of their tissue of origin. Embryonic stem cells, typically extracted from embryos that have been donated to research by couples undergoing fertility treatments, have the ability to develop into every cell type in the body—referred to by scientists as differentiation. They also have the ability to make identical copies of themselves, a process called self-renewal.

Although adult stem cells offer potential benefits and will continue to be studied, most scientists agree that because of embryonic stem cells’ ability to differentiate and self-renew, they carry much greater promise. Dr. Jerome Zack, professor of medicine and of microbiology, immunology and molecular genetics, has been involved in clinical trials of a strategy that treats adult stem cells...
with antiviral genes to provide protection from HIV infection. The adult stem cells can differentiate to become the blood-forming stem cells infected by the AIDS virus. But the inherent drawback to the approach is that it requires each patient to go through the arduous process of having his or her own stem cells isolated, treated with the genes and then re-implanted. “The beauty of embryonic stem cells, assuming we can get them to develop into blood-forming lineage, is that we may be able to engineer cells to be universally transplantable without having to remove the patients’ adult cells and manipulate them in culture,” says Zack, who serves as academic associate director of UCLA’s new stem cell institute.

While Zack’s team has done some studies with the presidential embryonic stem cell lines, the difficulty in obtaining funding for the work has limited such exploration. “We believe our new institute and the Proposition 71 funding will galvanize the entire research infrastructure here to move in this direction,” Zack says, adding that public support, as expressed by the successful California initiative, is driving stem cell research forward as much as the technological advances: “We go nowhere without funding, and funding results from public support.”

Long before the California initiative, UCLA boasted experts in adult human stem cells and in mouse embryonic stem cells; the two sides will share knowledge as the institute delves further into human embryonic stem cell research. “It’s not as if we had to build this up from scratch,” says Dr. Leonard Rome, senior associate dean for research at the David Geffen School of Medicine at UCLA, who has worked with institute leaders in securing research space.

UCLA is also well positioned as the only public university in California with a Good Manufacturing Practice (GMP) suite, a specialized laboratory that adheres to a set of strict federal regulations and quality standards. GMP conditions are currently required by the U.S. Food and Drug Administration when gene therapy or gene medicine is used in clinical trials.

UCLA’s GMP facility has been used for the last five years by the Human Gene Medicine Program, directed by Jonsson Cancer Center Professor James Economou. It will now be expanded to accommodate stem cell research—ensuring that there is no contamination, so that what is developed in the lab can potentially be used therapeutically. “When we have an approved protocol to treat patients using stem cells, we will have all the records, going back to the very beginning, to show how these cells were kept and how they were monitored,” Gasson says.

The Institute for Stem Cell Biology and Medicine plays to another key strength on the campus—the wide-

“There’s a lot more that is known about the basic biology of stem cells than we knew even a few months ago.”

—Dr. Harley Kornblum
Director,
UCLA Neural Stem Cell Research Center
ranging expertise and willingness of scientists from disparate disciplines to work together on a common problem. In addition to the disease-specific research with human embryonic stem cells, for example, biologists in the UCLA College are working on model systems in flies, mice, worms and zebrafish, and engineering researchers are devising new biological materials to support the growth of stem cells. Faculty in law, medical ethics, public health and other fields are also joining the effort.

“Every major advance in science that I’m aware of these days is coming from interdisciplinary work,” says Witte, a renowned scientist whose laboratory research laid the groundwork for development of the targeted leukemia therapy Gleevec. “The image of the solitary scientist is no longer relevant. Stem cell research cuts across every scientific discipline one can imagine, from fundamentals of developmental, cell and molecular biology to applied issues such as how to introduce new or altered genetic information; it involves engineering questions of how does one grow and manipulate these cells at scale and medical issues of how do you apply this knowledge in the clinic. It’s a unifying science that requires different kinds of people to work together.”

“People talk about the great weather in Southern California, but it was the scientific weather that drew me,” says Dr. Hanna Mikkola, a former Harvard stem cell scientist who was the first faculty member hired by the new institute. “When I came here for the interviews, I could see that people realized that the only way we could make rapid progress in such a complex field is to work together.”

Mikkola, who studies how the embryo makes blood-forming stem cells, is attempting to determine what it is that gives these cells the ability to self-renew. “If we want to make stem cells that we can transplant into a patient with a blood cell disorder such as leukemia, our challenge is to ensure that these transplanted stem cells are capable of making the blood cells for the rest of the individual’s lifetime,” she says. In studies with mice, her group has homed in on the placenta as a factory for these cells early in development.

“We believe our new institute and the Proposition 71 funding will galvanize the entire research infrastructure here to move in this direction. We go nowhere without funding, and funding results from public support.”

—Dr. Jerome Zack
Professor of Medicine and of Microbiology, Immunology and Molecular Genetics

One of the promises of human embryonic stem cell research is that it will open a window into the complex events that occur during human development. In UCLA’s Department of Molecular, Cell, and Developmental Biology, researchers are using model systems in an attempt to determine the genetic signals needed for cells to go into differentiated states. “In that sense, a stem cell is an ideal system for study,” says Banerjee.

Finding answers to this fundamental problem could have profound implications for treatment of a disease such as cancer. “More and more evidence suggests that cancer is a stem cell disease,” says Gasson. “Many of our current therapies are not effective because they don’t target the cancer stem cells. We need to understand the biology of the cancer stem cell so we can develop the next new wave of molecularly targeted therapies that go after those important cells.”

Gaining control over the process of differentiating human embryonic stem cells in the lab might also pave the way for dramatically improved treatment for diabetes—the ability to transplant insulin-producing stem cells into patients. “The potential is enormous, but we still have a great deal to learn,” says Dr. Anil Bhushan, assistant professor in UCLA’s Larry L. Hillblom Islet Research Center. Before such a therapy
could be conceived, Bhushan says, he and his colleagues need to learn more about how stem cells differentiate to the cluster of insulin-producing cells that form the islet, and the physiological characteristics of these cells in the body.

In the laboratory of Dr. Yi Sun, assistant professor of psychiatry and biobehavioral sciences, researchers have made progress in understanding the process governing neuronal cell differentiation—how to manipulate human embryonic stem cells to create high percentages of nerve cells. Sun has succeeded in turning human embryonic stem cells into colonies consisting of millions of cells, three-fourths of which are neuronal. For a degenerative brain disorder such as Parkinson's disease, this work suggests the eventual possibility of implanting small numbers of nerve cells capable of producing dopamine, the neurotransmitter whose deficiency causes most Parkinson's symptoms.

Developing stem-cell-based therapies to treat a disease such as Parkinson's, where the goal is to restore one type of neuron, or multiple sclerosis, in which the supporting cells need to be replaced, is likely to be a much more tractable goal than attempting to reproduce a nervous system that has been devastated by a disease such as Alzheimer's, says Dr. Harley Kornblum, director of UCLA's Neural Stem Cell Research Center.

Although many challenges loom ahead, Kornblum, whose own studies focus on what goes wrong to turn brain stem cells into cancer stem cells, is encouraged with the rapid progress being made in the laboratory. “There’s a lot more that is known about the basic biology of stem cells than we knew even a few months ago,” he says. In addition to the laboratory work, UCLA neuroscientists are collaborating with basic scientists in an effort to translate findings into potential therapies for spinal cord injury, multiple sclerosis, and stroke, Kornblum says.

UCLA stem cell researchers are quick to caution that the revolutionary new treatments they hope will eventually evolve for diseases such as cancer, HIV and neurological, musculoskeletal and metabolic disorders are likely to be years, or even decades, away.

“This is not an easy task, and it will take time,” says Mikkola. “We don’t want to promise what we can’t deliver. But this does open up the possibility for completely new approaches to treating diseases on which we have made very little progress for several decades.”

“The study of stem cells has created a whole new area of biology that bridges people from many different fields,” adds Kornblum. “With very good scientists working together on a problem in which there is so much potential, a lot of things are going to come out of this that we don’t even imagine yet.”

EXPERTS ADDRESS THE ETHICS AND POLITICS OF STEM CELL RESEARCH

No discussion of human embryonic stem cell research is complete without acknowledging that there are some, most prominently President George W. Bush, who hold moral and ethical concerns about what they view as a potential loss of a human life.

This view was frequently pushed in the 2004 campaign by opponents of Proposition 71, the California initiative to set aside a $3 billion bond for a state agency to regulate and fund human embryonic stem cell research. Proponents counter that the goal of the research is to extend and improve human life, not end it. In vitro fertilization clinics typically prepare many cells that are not used for impregnation. The unused or surplus cells are kept frozen as human tissue in case they are needed. When the tissue is no longer needed for pregnancy, proponents argue, it should be available for potentially life-saving stem cell research.

By a substantial majority—59 percent—California voters expressed their support for research that scientists believe holds such great promise. But that doesn’t mean all ethical issues are settled.

On February 5, 2006, UCLA’s Center for Society and Genetics and the UCLA Institute for Stem Cell Biology and Medicine will present an international public symposium, “Stem Cells: Promise and Peril in Regenerative Medicine,” to explore the implications of California’s step toward more widespread human embryonic stem cell research.

“We want to be proactive rather than reactive,” says Dr. Edward R.B. McCabe, director of the Center for Society and Genetics. “So we’re bringing in experts to engage in dialogue on a variety of questions.”

Among the topics to be discussed is the nature of the state’s foray into research that has been limited by federal funding restrictions. “If science is, in this case, driven by political initiative, it’s important to know whether the population understands what it’s voting for,” says McCabe. “It’s clear that people do have the right to make these decisions, but the question is whether the public is aware that major breakthroughs are likely to take time, and whether there will be a backlash in the short run if investigators aren’t able to produce what the population thought it was going to get.”

For the research itself, the leadership of the Institute for Stem Cell Biology and Medicine is taking great pains to ensure that there is adequate informed consent when residual tissues that would otherwise be destroyed are donated to create new stem cell lines for research. “There are hundreds of thousands of excess fertilized eggs in storage at clinics across the country, and people make decisions every day about whether eggs that are no longer needed for reproductive reasons will be destroyed or donated for research,” says Steven Peckman, an ethics expert and the institute’s associate director for administration and planning. “We want to make sure that donors are well aware of how this material will be used and that there is no coercion or undue influence in the donation of their cells.”

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Dr. J. Adrian Lunn had a plan. He’d come to America from his home in the Bahamas, study medicine, earn a degree and return home to practice medicine.

For Dr. Lloyd Miller, his specialty, dermatology, provided a tempting opportunity for a lucrative private practice. Many of his contemporaries already were pulling down good salaries.

With a master’s in business administration, a medical degree and master’s degree in public health already behind him, Dr. John FitzGerald came to UCLA to do his internal medicine residency and decide on his next direction.

For all three of these highly trained and competent physicians—and for many others over the last 11 years—a unique and nationally lauded program to train physician-scientists changed everything.

Because of the UCLA Specialty Training and Advanced Research (STAR) program, Lunn, Miller, FitzGerald and dozens of others are conducting leading-edge research in laboratories across the country—work that most likely will lead to better ways to prevent, detect and treat a variety of illnesses and diseases.

Lunn, Miller and FitzGerald were among 24 STAR fellows who graduated from the program in June. This set of STAR graduates was the third group to complete the program, which can take between four and seven years.

Since its inception in 1994, UCLA's STAR program has trained 60 physician-scientists, and an unprecedented 87 percent have remained in academic medical research. Graduates from 2004 and 2005 earned an impressive $4.5 million in grant support to fund their research. And top academic medical centers across the country are working to develop similar programs to train the next generation of physician-scientists.

“Our STAR fellows are sought after,” Fogelman says. “We’ve lost some of our graduates to outstanding competing institutions across the nation. We’ve also been fortunate to recruit a significant number to UCLA positions. Almost all of the STAR graduates are successful in obtaining National Institutes of Health (NIH) career development awards and grants from other sources such as the American Cancer Society.”

For Dr. Sanjiv “Sam” Gambhir, a former UCLA physician-scientist who now is director of the molecular imaging program at Stanford University, STAR already is a proven success. Stanford is considering developing a similar program, according to Gambhir.

“STAR will be important in advancing clinical medicine,” Gambhir says. “STAR graduates see both worlds, the clinic and laboratory, and serve as a bridge between the two.” UCLA's STAR program provides highly individualized research training and career development counseling to physicians who earn Ph.D.s or Master of Science degrees in clinical research while completing their fellowship training. It differs from programs such as the Medical Scientist Training Program (MSTP) in that STAR fellows already are practicing doctors. MSTP students earn their Ph.D.s during medical school.

The result is that STAR students are more focused and mature and better equipped to translate science from the lab bench to the patient bedside, says Dr. Enrique Rozengurt, a professor of medicine and a STAR mentor.

“The idea of having people who understand disease but also understand how to do research is very, very important,” says Rozengurt, who has been involved with STAR for eight years. “Great advances will come from having that kind of background. STAR offers a very organized and structured vehicle for physicians to become proficient at doing research.”

Gambhir agrees.

“In my experience, STAR graduates and MSTP students look at things very differently,” he says. “STAR graduates have a wealth of experience to draw on, having already finished medical school. They're more confident and certain about what sort of clinical problems they want to solve in the lab.”

STAR's structure and operation are unique, says Dr. Joy
Frank, a professor of medicine and physiology and the program’s director since 1997.

One of the most important aspects of the program, Frank says, is the intense mentoring trainees receive. They undergo career development training, are taught how to write successful grant applications and learn how to negotiate for their first jobs and advance through the ranks in academia.

“STAR trainees are mentored all the way through the process, in their divisions, by their research mentors and by the STAR program itself,” Frank says. “We do one-on-one mentoring, hold group workshops. We’re with them every step of the way, and that’s a big reason we’re so successful.”

Frank personally meets with each STAR trainee every three months.

In addition to the mentoring, STAR fellows are supported financially throughout their training by their clinical departments. They receive their complete fellowship salary and their tuition is covered. Fellows are placed in top research labs and receive guidance from UCLA’s best scientific mentors, who teach them how to do research and advise them on grant writing and making presentations at scientific meetings. Upon graduation, STAR fellows often have a wealth of job offers.

Because of its proven success, spots in the STAR program are highly coveted.

“We receive hundreds of applications a year now,” Frank says. “STAR has developed a national reputation, and we now are attracting participants from the best institutions. We can be very selective and look for those unique people who are solely dedicated to academic medicine.”

The STAR review committee, for example, interviewed 30 applicants for STAR cardiology fellowships to fill only two positions. In all, STAR admits between eight and 11 new STAR fellows a year, Frank says.

STAR fellows choose one of three research pathways that are combined with their clinical specialty training to obtain either a Ph.D. in basic biomedical science from the David Geffen School of Medicine at UCLA, the life sciences in the College, the School of Engineering or at the California Institute of Technology (Cal Tech); a Ph.D. in health services/outcomes or epidemiology from the School of Public Health or the RAND Graduate School; or a master of science in clinical research from the Department of Biomathematics in the school of medicine.

The third research pathway was added in 2002, Frank says, in keeping with a national campaign by the NIH to encourage the training of more physician-scientists to do clinical research.

A 2003 article in *Journal of Clinical Investigation* stated that there are about 25 percent fewer physician-scientists on medical school faculties now than there were two decades ago. The article cited several reasons for this decline—the heavy accumulation of debt through many years of training, the difficulty in providing a sustained research experience in the modern training curriculum and reaching trainees who have no real understanding of what it means to be a physician-scientist before their career choices are made. The STAR program addresses all three of those issues, Frank says.

The clinical research focus is very popular, with about 25 of the current 48 STAR fellows enrolled in that pathway.

“That pathway has grown enormously in a short time,” Frank says. “Adding it has had a tremendous impact on the STAR program.”

Graduates of the third pathway will conduct or design clinical trials, Frank says.

On average, it costs about $240,000 to put a physician through the STAR program, a cost that is primarily borne by the participant’s home department. The willingness of the various UCLA departments to absorb the cost of training shows a strong commitment to the program, Fogelman says.

However, as STAR fellows become more successful, and
the program’s stellar reputation grows, trainees are finding it easier to apply for and receive grant funding, which relieves some of the departments’ financial burden.

The STAR program, Fogelman is happy to point out, costs participating UCLA departments much less today than it did 11 years ago.

In the last two years, Rozengurt has mentored three fellows who successfully earned Ph.D.s in the molecular biology program. Two have been recruited at UCLA as assistant professors. The third took a job at the University of Texas M.D. Anderson Cancer Center.

Lunn is among the STAR graduates staying at UCLA. An assistant professor of digestive diseases, he’s one of the three STARs recently mentored by Rozengurt.

Lunn attended Yale Medical School, where he also earned a master’s degree in experimental pathology. He came to UCLA to do his gastroenterology training and was immediately interested in STAR.

“I had started a Ph.D. program at Yale, but dropped out,” Lunn says. “For me, this was an excellent opportunity to complete what I had started.”

Lunn did about 18 months of his three-year subspecialty training, then spent nearly six years doing laboratory research as part of the STAR program, while concurrently completing the remaining 18 months of his clinical training. He studied a protein called focal adhesion kinase, thought to be important in how cancer cells invade and survive. His research sought to test a theory that a high salt diet increases the risk of stomach cancer. He answered part of the question and completed his dissertation, and will now continue his research.

He says STAR’s structure allowed him to do what he couldn’t do while he was a medical school student—finish his Ph.D.

“When you’re a medical student, you have no idea what you’ll end up doing down the road,” Lunn says. “With STAR, I already knew what my interest was, and I knew what I was giving up when I decided to do research. The salary in private practice is about three times what I’ll make as a researcher. But I discovered through STAR that research is what I really want to do.”

The same proved true for Miller, another STAR graduate who is staying at UCLA in the dermatology division.

“One of the strengths of STAR is that participants see the actual diseases they’re trying to understand in the lab,” Miller says. “There’s a real need, especially in dermatology, for basic science researchers to facilitate understanding of skin diseases. Most dermatologists go into private practice. They don’t opt to do research.”

Miller was mentored by Dr. Robert Modlin, chief of dermatology. He earned an NIH career development grant, published an article in the Journal of Immunology and won two dermatology foundation awards while in the STAR program. He currently is researching immune response to skin infection, with a focus on Staph infections. He hopes to discover a way to boost immune response to fight skin infections.

“My experience in STAR was outstanding,” Miller says. “It will be very easy to transition into a career in research.”

Like his colleagues, FitzGerald had his career course changed by the STAR program. He had signed up to do health services training when he met a rheumatology fellow already enrolled in STAR. He applied to and joined the program in 1998. During the next seven years, he completed his clinical training and did research on a Medicare policy change and how it affected medical practice patterns.

FitzGerald earned a career development grant from the Agency for Healthcare Research and Quality, under the Department of Health and Human Services, as well as an Arthritis Foundation Investigator Award. Now a UCLA assistant professor, FitzGerald will continue his health policy research with a goal to improve process of care.

“STAR provides a structure that helps move participants forward,” FitzGerald says. “It’s a huge help.”

Dr. Joseph Wu and Dr. Sushovan Guha are among the STAR graduates who landed coveted positions at other high-profile institutions, due in large part to their participation in the program, they say. Wu will be working alongside Gambhir at Stanford, while Guha has joined the faculty at M.D. Anderson.

Wu, a faculty member in the departments of cardiovascular medicine and radiology, says it takes an enormous commitment to participate in the STAR program.

“There are a lot of temptations … you see your colleagues graduating and launching their careers, and you’re still in training,” Wu says. “But I knew I was going to stay in academics. I knew I loved research and the STAR program gave me the time and support to do that research.”

At Stanford, Wu will use molecular imaging to track embryonic stem cell therapies in the heart. He hopes to conduct translational research.

“I don’t think any other institution in the country could have offered me the caliber of clinical training in adult con-
genital heart disease and research training in molecular imaging that I got in the STAR program,” Wu says.

After graduating from STAR, Guha received job offers from Yale, the Mayo Clinic and M.D. Anderson. He chose M.D. Anderson, where he runs his own lab and continues his research into pancreatic cancer. He focuses on a particular group of proteins called G protein-coupled receptors. He hopes to develop new ways to detect pancreatic cancer at an earlier stage, when it is more treatable.

An assistant professor, Guha credits STAR with giving him the ability to win grants and awards.

“This program is widely known,” Guha says. “Once you're STAR trained, you can go anywhere.”

STAR has had a great impact in the Department of Medicine's physician training, Frank says, since two-thirds of STAR fellows are in the department's specialties of cardiology, digestive diseases, hematology/oncology, infectious diseases, dermatology, endocrinology, geriatrics, general internal medicine and rheumatology. The program also has had a major impact on other clinical departments such as obstetrics and gynecology, surgery, pediatrics and pathology.

The program has virtually transformed UCLA’s obstetrics and gynecology department, according to Dr. Gautum Chaudhuri, executive chairman.

The department, Chaudhuri says, will have more physician-scientists on staff than any other ob-gyn department in the country. To date, the department has three STAR graduates on faculty, with another three on the way.

“Normally, very few gynecologists become investigators,” he says. “But we’re going to have a number of gynecologists at UCLA trained to do outstanding basic science and clinical research. They’ll be on the cutting edge of research and on the front lines of translating the latest advances to our patients in clinical trials.”

Recent STAR graduate Dr. Oliver Dorigo is joining UCLA’s ob-gyn department. Under his mentor, Dr. Arnold Berk, Dorigo worked on a novel virus-based gene transfer tool to correct genetic defects. One day, it may be used to replace missing genes and have implications in cancer, diabetes and other metabolic disorders. He’s also studying molecular pathways in ovarian cancer.

“I’m one of the biggest supporters of the STAR program,” Dorigo says. “It was fantastic. It gives you a tremendous science background and a lot of credibility.”

So much credibility, Dorigo says, that he was able to secure a three-year grant from the Ovarian Cancer Research Foundation.

“To be a well-funded scientist, to be published in peer-reviewed journals, you have to have an interesting project that will generate widespread interest. STAR gave me the ability to take on such a project,” he says. “If I can come up with something that influences the way we understand and treat ovarian cancer, I will be a happy man.”

Dr. Kathleen Sakamoto, head of the pediatric oncology division at UCLA, is not your typical STAR graduate.

Sakamoto has been with the pediatric oncology division since 1993 and was a faculty member when she joined STAR. She already was conducting research as well as seeing patients. She’d always wanted to earn her Ph.D., however, and when an opportunity arose to do research at Cal Tech, she happily took it. She applied to the STAR program and was accepted.

Her Cal Tech tuition was covered through an agreement between Cal Tech and STAR, and Sakamoto took a sabbatical to finish her study of ways to target and destroy proteins in cancer cells. Working outside the UCLA medical school environment helped her broaden her research skills, Sakamoto says.

“It complemented my education and the training I had already received in the lab,” she says. “I’m very glad I did it. I learned a lot of new things.”
Chantal Abbey re-learned skills as basic as walking and talking while at the UCLA Neurological Rehabilitation Unit in September 2002. She has no recollection of the experience.

On August 15, 2002, Abbey was driving north on Sepulveda Boulevard not far from UCLA when a car headed in the opposite direction veered toward her, its driver asleep at the wheel. The head-on collision left the 27-year-old actress in a coma with a fractured wrist, lung trauma, bleeding into the brain and diffuse axonal injury—damage to the axons of nerve cells across the brain's various structures.

A tube was surgically placed into the right lateral ventricle of Abbey's brain to drain excess spinal fluid and decompress the brain when necessary. The coma lasted a little more than two weeks. When she left intensive care and was first admitted to the rehabilitation unit, Abbey spoke only her last name in response to any question. “She became restless and distracted by anything that moved, or by any sound,” says Dr. Bruce Dobkin, professor of neurology at the David Geffen School of Medicine at UCLA and director of neurological rehabilitation at UCLA Medical Center. Moreover, adds Dobkin's staff employed in an effort to “retrain” her injured brain. Her first concrete post-accident memory is of a day in early October when the unit’s therapists were teaching members of her group how to tie their shoes. “I was very angry that I was there, because I didn’t yet grasp that I had been in a serious accident,” Abbey says. “Then, when we were outside, they untied my shoe and asked me to re-tie it and I couldn’t. It finally hit me, and I became very emotional. I remember thinking, ‘I was an honor student, I have a college degree, and now I can’t tie my shoe?’ ”

Abbey remembers none of the cognitive therapies that Dobkin’s staff employed in an effort to “retrain” her injured brain. Her first concrete post-accident memory is of a day in early October when the unit’s therapists were teaching members of her group how to tie their shoes. “I was very angry that I was there, because I didn’t yet grasp that I had been in a serious accident,” Abbey says. “Then, when we were outside, they untied my shoe and asked me to re-tie it and I couldn’t. It finally hit me, and I became very emotional. I remember thinking, ‘I was an honor student, I have a college degree, and now I can’t tie my shoe?’ ”

Patients such as Abbey who recover from an acute brain injury provide dramatic illustrations of the organ’s ability to adapt, and are helping to illuminate the processes of learning and memory. Powerful new tools are giving neuroscientists unprecedented views to observe these processes in the brains of humans, through functional magnetic resonance imaging (fMRI); and in animals, where real-time recordings are made of individual nerve cells.

“We always knew that learning was a dynamic process, and that somehow it involved a complicated choreography of massive networks in the brain,” says Dr. John Mazziotta, chair of the Department of Neurology at the David Geffen School of Medicine at UCLA and director of UCLA’s Brain Mapping Center. “Now we can see those networks, and we can see some of the ground rules by which this choreography takes place.”

Studies of the normal brain have found that the cortex is compartmentalized into units that perform different functions. But, notes Mazziotta, this fragmentation isn’t absolute. “It’s relative, and it’s constantly changing,” he says. When a person is born blind, for example, the visual cortex doesn’t receive the information it needs to organize. Imaging studies have shown, though, that when that person learns Braille, some wiring takes place in the part of brain normally associated with vision. “It’s all about the real estate, and as in real estate, it’s location, location, location … and, to some degree, the zoning laws,” says Mazziotta.

Imaging studies of violinists have found that the more accomplished the player, the more cortex is committed to controlling the all-important left hand; similarly, more cortex is devoted to the task in violinists who learned to play earlier in life. “This is an example in which, with rehearsal and increased skill, more and more real estate is devoted to controlling the fine details that go into playing the instrument,” Mazziotta explains. Imaging studies have also shown that as new concepts are learned, large areas of the brain are active; as the information becomes better understood, the amount of these brain regions that are active during recitation of the knowledge shrinks, while other parts of the brain having to do with recall show greater activity.

The brain’s ability to reorganize during learning, known as plasticity, is commonly associated with children. But, while the child’s brain tends to be more plastic than the adult’s, Mazziotta points out that the mechanisms to learn are active at all points in life—and that the more they are used, the better they perform.

Looking at living neurons in the brains of animal models, researchers are able to glean additional insights. Dr. Carlos Portera-Cailliau, assistant professor of neurology and neurobiology, notes that in recent years, a combination of advanced microscopic imaging methods and the use of fluorescent probes has enabled neuroscientists to observe changes that take place in the living cells of the intact brains of mice during normal development and in disease.
Chantal Abbey was taught to "retrain" her injured brain following an auto accident.
Using a green fluorescent protein to follow certain neurons in the brains of young mice, scientists such as Portera-Cailliau are in a position to study the changes that take place following a stroke, when the nerve-cell growth processes are lost in a portion of the brain but others begin to move into the damaged area to compensate. “Depending on an animal’s experience as it explores its environment, the brain will grow differently,” Portera-Cailliau notes. “The brain is very plastic early in development, which is why children who suffer a stroke will recover almost completely their function. That plasticity is important for learning, but also for recovering after lesions.”

It follows, then, that the more plastic an adult’s brain, the more successful the learning after brain injury. So Portera-Cailliau’s goal is to determine the molecular mechanisms that facilitate this rewiring following the insult. Such information might point the way toward therapeutic targets and, potentially, drugs to speed recovery of the adult brain after stroke, trauma or other injury.

Functional MRI studies reveal changes in the brain in response to training with walking. Dobkin and colleagues have shown, for example, that intense physical exercise can play an important role in restoring the brain and spinal cord after serious injury. In a study in which spinal-cord-injured patients walked with assistance on a treadmill, they found that the greater the load on the legs, the higher the muscle activity. Moreover, the spinal cord’s output, as measured by muscle activity, was synchronized with the step cycle, suggesting that a “rewiring” was occurring. In the laboratory of Dr. Fernando Gomez-Pinilla, professor of neurosurgery at the David Geffen School of Medicine at UCLA, researchers have found that exercise affects molecular systems important for maintaining neural function and plasticity; specifically, it promotes increased output of brain-derived neurotrophic factor, a protein that causes certain types of nerve cells to survive and grow, particularly at the level of the synapse, where most learning takes place. According to new research, brain-derived neurotrophic factor helps translate the action of training and experience into molecular events that support cognitive function and functional recovery. In follow-up animal studies, Gomez-Pinilla’s group has found that exercise after brain injury helps the recovery process, and that it may also enhance the synaptic plasticity in the normal brain.

As a neuropsychologist working in UCLA Medical Center’s Neurological Rehabilitation Unit, Dobkin leads a team that begins working with brain-injured patients after the acute period has ended. It’s not uncommon for his patients to have no memory of the two-to-three-week period before their transfer to his unit. “By the time they’re leaving, they often will associate only me with their treatment,” Dobkin says. “When they thank me, I point out that there were many others who took care of them during that acute period, including neurosurgeons, ICU doctors and nurses. That can make the patients anxious, because they don’t remember any of that.”

The retrograde amnesia that many brain-injured patients experience—losing memory of events that occurred for a period of time typically ranging from hours to days or weeks before the injury—reinforces what neuroscientists are learning about the fragility of memory. “Information that isn’t fundamentally important to you, or doesn’t have emotional content, is easily lost,” Dobkin says. “That’s why the ordinary things that happened in the days or weeks immediately preceding an injury may disappear.”

This fragility is by no means limited to brain-injured patients. “A lot of people worry about dementia when they start losing their keys,” Dobkin notes. “That’s not a sign of dementia; it’s probably just the fact that where you placed your keys wasn’t important, wasn’t a focus of your attention.”

“We always knew that learning was a dynamic process, and that somehow it involved a complicated choreography of massive networks in the brain. Now we can see those networks, and we can see some of the ground rules by which this choreography takes place.”

—Dr. John Mazziotta, Director, UCLA’s Brain Mapping Center
memory must hold some importance to be maintained.” Memories can also be easily altered as they are intertwined with recollections of other events. “Our factual memory isn’t as reliable as we’d like to think,” Dobkin says.

Learning and memory are more complex than scientists previously suspected. The mechanisms involved in rote learning of facts or events differ from those involved in skills learning, such as playing the piano or hitting a baseball. We have memories of the past, as well as prospective memories—keeping plans or appointments in mind.

As they develop a better understanding of the role of chemical messengers in solidifying memories, Dobkin and his colleagues are laying the groundwork for therapeutic strategies to strengthen the memory in brain-injured patients through electrical stimulation or individually tailored medical regimens. In his studies of patients who are relearning how to walk, Dobkin has shown through fMRI that the brain changes as the skills are practiced. Dobkin is using imaging studies to test a variety of learning strategies in brain-injured patients undergoing rehabilitation. “Right now, we can’t predict which patients will benefit from particular approaches,” he says. “By relating one study to the next, we hope to be able to better predict which paradigm will be most likely to work for individual patients.”

The scientific proof that brain-injured patients will do better because of particular interventions designed to help them learn isn’t yet there, Dobkin says. “The problem is that 15 years ago, strategies were based on theories that had nothing to do with how the brain works,” he explains. “A variety of drug and training approaches is just starting to be tested that build upon neuroscientific data.”

In working with brain-injured patients, Dobkin and his staff seek to optimize reinforcement. “We try to just give them one thing on their plate, without a lot of distraction, so that they can focus,” he says. “Then we try to get them to use their vision, hearing, touch and movement to understand the relationship between what it is we want them to learn and how they’re going to retain that information.” As motor skills are practiced—feeding oneself, for example—the nerve cells in the brain related to that function are reinforced. To help patients with prospective memory, they’re encouraged to keep notes. “At first you might not remember to look at the notes, but gradually you learn to write down anything important, and to check every hour to make sure you’re not missing something,” Dobkin explains.

As their recovery progresses, patients are encouraged to follow a news story that interests them—reading about it, watching or listening to coverage, and discussing it with friends and family members. Medications for improving attention by increasing one of several neurotransmitters can be useful to augment the learning process, Dobkin adds. But the most important aspect of the rehabilitation process is practice. “Patients who are the most motivated—who don’t just wait for the one hour they spend with the therapist three times a week, but constantly rehearse and try to strengthen the connections—tend to do the best,” he says.

A year and a half after her accident, Chantal Abbey started graduate school, enrolling in a California State University, Northridge program to earn her teaching credential. “For the most part, I feel like my memory has recovered 100 percent,” she says. “But school is definitely more of a challenge. I don’t memorize things as easily as I used to.”

She still writes everything down and relies heavily on her day planner. “My life is very different from how it was before the accident,” she says. “I was never the type of person who had to be really organized, but now that’s the only way I can function. I never used to worry about change, but now I need my routines.”

Other than that, she feels like herself. The flatness that characterized her personality in the months after the accident is long gone; her old sense of humor finally returned.

“There’s this remarkable adaptation that can occur, as long as the brain injury isn’t too profound,” says Dobkin. “That plasticity is based on a lot of things we don’t know about for sure, but that have to do with the ability of spared pathways to increase their activity in a way that compensates for the damaged areas. It has to do with how fundamental mechanisms of learning restore themselves. The skills training that we gave Chantal, and that her family gave her, and that she continued to reinforce, all presumably acted on these adaptable systems and helped to restore function.”
New Biological Chemistry Chair Aims to Energize Department with Young Scientists, Fresh Approaches

By Elaine Schmidt

Dr. Lawrence Zipursky, the newly appointed chair of the Department of Biological Chemistry, vividly recalls when his predecessor, Dr. Elizabeth Neufeld, recruited him to UCLA in 1985 as a young assistant professor. He credits her dynamic 20-year legacy for contributing to the success of his early career.

“Liz was an extraordinary chair who was committed to each faculty member. I found this inspiring,” says Zipursky, now a UCLA professor and investigator with the prestigious Howard Hughes Medical Institute (HHMI). “She rejuvenated the department by taking young faculty seriously when they first arrived. The opinions of junior faculty were really valued.

“Liz’s support made a difference in my career, and it’s important for me to provide this same leadership to other junior faculty,” he adds. “My goal is to find creative young people with exciting new research and convince them to come to UCLA.”

Zipursky’s enthusiasm for fresh perspectives may spring from seeing the world through different eyes—fruit-fly eyes, that is. The multi-faceted orbs of the common Drosophila offer a genetic parallel universe to the human brain, enabling Zipursky to glean unique insights into human disease and brain development.

“You wouldn’t guess it from their appearance, but fruit flies and humans share a large number of related genes that can go awry and cause disease,” Zipursky explains. “Studying how these genes function in the fly eye can lead to new therapies to treat disease in people.”

The fruit-fly eye model also offers practical advantages, which enable scientists to manipulate genes and answer fundamental biological questions difficult to ask in people. What happens, for example, if scientists switch on the eye gene in the fly’s leg? Will the gene start to generate eye tissue in the leg?

Researchers can also eliminate a gene in order to learn its purpose, how it works and whether it controls other genes.

“We can easily remove a single gene from a single cell in one animal, keep everything else the same and watch what happens,” Zipursky says. “Or we’ll identify a gene that’s similar in people and flies, and insert the human version in the eye model to determine whether it performs the same function.”

Zipursky was introduced to the fruit-fly model as a Helen Whitney Foundation Fellow at the California Institute of Technology under the tutelage of the acclaimed research pioneer Dr. Seymour Benzer. Now considered a leader in the specialized field himself, Zipursky focuses his research on how nerve cells make connections in the brain.

“The wiring of the brain underlies every system in the body,” he explains. “Yet how does the brain know how to wire itself correctly? It’s an extremely complex question I’ve wanted to study since first arriving at UCLA as an assistant professor.”

UCLA Medical Center Offers New Scanner for Faster Cardiac Imaging

UCLA Medical Center became the first hospital in the western United States to acquire a 64-slice computed tomography (CT) scanner for imaging of the heart and cardiac arteries.

Manufactured by Siemens, the sophisticated scanner is four times faster and offers higher resolution images than prior technology. The cost of the cardiac scan is reimbursed by insurers who cover angiograms.

Unlike an angiogram, in which the radiologist threads a catheter up a vein from the sedated patient’s groin to the heart, CT scanning is noninvasive and performed on an outpatient basis.

The 64-slice scanner captures 3-D images of the entire cardiac area in only 10 seconds, reducing the amount of time the patient needs to hold his or her breath.

By enhancing patient comfort and using more advanced technology, the scanner produces more accurate images and results in a more definitive diagnosis of early heart disease.
Zipursky has made a number of strides in solving this scientific riddle. In 2000, he challenged the dogma that one gene makes only one protein. His laboratory proved that a single gene was able to encode up to 38,000 different proteins on the cell surface.

In 2004, his team showed that these proteins work like advertisements—enabling those proteins that match to identify each other and connect while ignoring those that don't. His discovery was the first to explain how similar proteins hunt each other down to make the specific connections critical to cellular communication.

“Different proteins have unique recognition patterns,” says Zipursky. “Only those that look the same bind to each other.”

To encourage shared responsibility among faculty and due to the demands of Zipursky’s HHMI commitment, his department agreed to limit the chair’s position to three years. During that term, Zipursky aims to hire a new assistant professor each year.

“UCLA is a great institution,” he observes. “My goal as chair is to make it a better place. We’ll do that by increasing the number of terrific people in the department and cultivating their potential to accomplish important research.”

Zipursky is a member of the American Academy of Arts and Sciences. His research has been recognized by the Alfred P. Sloan Foundation, McKnight Foundation and American Cancer Society. A co-author of the widely acclaimed college textbook “Molecular Cell Biology,” he is an editorial board member of Neuron and The Journal of Neuroscience.
Dr. Stephen Cederbaum, professor of psychiatry, pediatrics and human genetics, received the 2005 Sherman M. Mellinkoff Faculty Award. Considered the School of Medicine's highest honor, the award celebrates an ongoing commitment to patients and medical education.

Dr. Alan H. DeCherney, professor of obstetrics and gynecology and chief of the division of reproductive endocrinology and infertility, was elected to the Institute of Medicine of the National Academies, a national resource for scientifically informed analysis and recommendations on issues related to human health.

Dr. E. Carmack Holmes, former chairman, UCLA Department of Surgery, and William P. Longmire, Jr., Professor, is currently executive director of the Center for Advanced Surgical and Interventional Technologies (CASIT) and a professor of thoracic surgery. He was inducted into the Johns Hopkins Society of Scholars — an honor awarded to former post-doctoral fellows at the university who have gained marked distinction in their fields. In addition, Holmes received an honorary membership in the Royal College of Physicians and Surgeons in Glasgow, Scotland, for his renowned work in surgical oncology and robotics.

Dr. Steve Jacobsen, professor of molecular, cell and developmental biology in the College of Letters & Science and a researcher with UCLA’s Jonsson Cancer Center, received an investigator award from the Howard Hughes Medical Institute, which identifies researchers who have the potential to make significant contributions to science. Jacobsen is a leader in DNA methylation research, which is part of gene regulation responsible for normal development. His studies utilize the plant Arabidopsis thaliana.

Dr. Jorge A. Lazareff, associate professor of surgery and director of pediatric neurosurgery, has been selected to hold the newly established Geri and Richard Brawerman Chair in Pediatric Neurosurgery, which will provide leadership in innovative biomedical and psychosocial research of brain metabolism and neurobiology with the goal of treating disorders of the developing central nervous system.

Dr. William L. Oppenheim, professor and chief of pediatric orthopaedics and director of the UCLA/Orthopaedic Hospital Center for Cerebral Palsy, has been named the first Margaret Holden Jones Kanaar, M.D., Chair in Cerebral Palsy, which will provide leadership in innovative research and education related to this disease. Cerebral palsy is one of the leading causes of childhood disability. UCLA’s unique center cares for patients throughout their lives.

Dr. Edward R. B. McCabe, executive chair of pediatrics, was elected vice president (president-elect) of the American Pediatric Society, an organization that advances the study of pediatric diseases and the prevention of illness, and promotes pediatric education and research.

Dr. David B. Reuben, Archstone Foundation Professor of Medicine and chief of geriatrics, has been named president of the American Geriatrics Society, a national organization of nearly 7,000 geriatrics healthcare professionals. Reuben has played an integral role in the organization for the past decade including developing education and policy initiatives.

Dr. Charles Sawyers, professor of medicine and a researcher with UCLA’s Jonsson Cancer Center, received the Richard and Hinda Rosenthal Foundation Award, recognizing Sawyers’ notable research contributions that will lead to improved clinical care for prostate cancer. He also received the David A. Karnofsky Memorial Award and Lecture, bestowed on individuals whose clinical research has helped change the general practice of oncology.

Dr. Margaret L. Stuber, Jane and Marc Nathanson Professor of Psychiatry and Biobehavioral Sciences, received an honorary doctorate of science from her alma mater, Denison University in Granville, Ohio. Stuber is honored for her contributions to medical education and to the care of families dealing with life-threatening pediatric illness.

Dr. John Timmerman, assistant professor of hematology/oncology and a researcher with UCLA’s Jonsson Cancer Center, received the Damon Runyon Clinical Investigator Award from the Damon Runyon Clinical Research Foundation. Timmerman’s work focuses on developing novel therapies targeting the immune system to treat lymphoma and related cancers.

Dr. Peter Tontonoz, associate professor of pathology and laboratory medicine, received the 2005 Richard E. Weitzman Memorial Award from the Endocrine Society, recognizing an exceptionally promising young researcher. Tontonoz’s work has provided more insight into diseases, such as atherosclerosis, by advancing understanding about how lipids act as signaling molecules in regulating gene expression through nuclear receptors.
Dr. Ernest Wright, professor of physiology and Mellinkoff Professor in Medicine, was named a 2005 Fellow to the Royal Society, an honor considered one of the highest accolades a scientist can achieve next to the Nobel Prize. Wright is honored for his research contributions on the structure, function and genetics of transport proteins, which act as gatekeepers for the body by carrying essential molecules in and out of cells.

Dr. Gail Wyatt, professor in residence at the Semel Institute for Neuroscience and Human Behavior at UCLA, was named a 2005 Woman of Distinction by the American Association of University Women. The award recognizes her clinical work as a sex therapist and educator, and her research into women’s sexual relationships and risk for sexually transmitted diseases. In addition, Wyatt was recognized by the Los Angeles City Commission on the Status of Women and City Councilman Eric Garcetti on United Nation’s Day as an outstanding woman who has empowered women both locally and internationally.

Dr. Lonnie Zeltzer, professor of pediatrics, anesthesiology and psychiatry and biobehavioral sciences and director of the pediatric pain program, received the Jeffrey Lawson Award from the American Pain Society for her outstanding advocacy to improve pain management in children.

Grants

UCLA received a five-year $12.7 million grant from the National Institute of Allergy and Infectious Diseases, which is part of the National Institutes of Health, to support a novel collaborative effort in developing topical microbicides to prevent the spread of HIV. The goal of the effort—involving industry, government and academia—is to produce a product in Phase 1 testing in humans in five years. Dr. Peter A. Anton, professor of medicine and director, Center for HIV & Digestive Diseases, is the principal investigator.

UCLA received a five-year, $9.7 million grant from the National Institutes of Health directed at understanding the genetic factors in heart disease and metabolic syndrome, a condition characterized by obesity, insulin resistance and atherosclerosis. The grant consists of four projects, bringing together both genetic and biochemical approaches. Dr. Jake Lusis, professor of medicine, microbiology and human genetics, is the principal investigator. Other key investigators include Dr. Karen Reue, Dr. Paivi Pajukanta and Dr. Mark Doolittle.

The National Institutes of Health/National Heart, Lung and Blood Institute awarded a five-year, $12.5 million grant to identify the factors within the heart that influence susceptibility of cell death during a heart attack. The study goal is to build an understanding of the factors that protect against heart injury that could lead to novel therapeutic strategies. Dr. Peipei Ping, professor of physiology and cardiology and director of the Proteomic Laboratory at the Cardiovascular Research Laboratory, is the principal investigator.

The National Center for Research Resources and National Institutes of Health awarded a five-year, nearly $12 million initiative to support research and development of a Biomedical Informatics Research Network to produce a framework for the collection, analysis, management and visualization of neuroscientific mouse data. The created infrastructure will greatly enhance linkage of multitissue, multimodal and adaptive databases into a single system, and resources developed will be available to the scientific community. The effort includes researchers from five major universities around the country. Dr. Arthur Toga, professor of neurology and director of the UCLA Laboratory of Neuro Imaging, is the principal investigator.

Programs

UCLA Medical Center was awarded with an American Heart Association Get With the GuidelinesSM Coronary Artery Disease Performance Achievement Award for providing exceptional cardiovascular care to patients hospitalized with coronary artery disease.

The UCLA Stroke Center is the first in Los Angeles County to receive designation as a Certified Primary Stroke Center by the Joint Commission on Accreditation of Healthcare Organizations—certifying that the UCLA Stroke Center offers the highest quality of care and follows national guidelines that can significantly improve outcomes for stroke patients.

In Memoriam

Dr. William F. Friedman, former executive chairman of the Department of Pediatrics and senior associate dean for academic affairs, died August 25, 2005. His leadership at UCLA spanned 26 years. A gifted physician and researcher, Friedman conducted work in pediatric cardiology that led to a major advance in treating a common heart defect in premature babies, and his laboratory introduced the use of two-dimensional echocardiography, or ultrasound, to pediatric medicine.

Dr. Milton Howard Miller, professor emeritus of psychiatry and biobehavioral sciences, deputy medical director for the County of Los Angeles Department of Mental Health and chair of psychiatry at Harbor-UCLA Medical Center, died April 20, 2005. Miller was a champion of quality mental health care to poor and minority communities with a commitment to academic, cross-cultural and public psychiatric programs.
Events

The 6th annual Mattel Party on the Pier!, benefiting Mattel Children’s Hospital at UCLA, took place at Pacific Park on the Santa Monica Pier on Sunday, September 25. The fun-filled family event featured celebrity appearances, unlimited rides, carnival booths and prizes, lunch, entertainment, and a silent auction. This year’s celebrity honoree was Patricia Heaton from TV’s “Everybody Loves Raymond.”

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On August 2, a reception and dinner took place at The Regency Club to honor Pamela and George Smith for establishing the Rebecca Smith Chair in A-T Research in the Department of Pathology & Laboratory Medicine and to present the Chair sculptures to the Smith family and Dr. Richard Gatti, Chair holder.

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On June 23, the UCLA Brain Research Institute hosted a luncheon to introduce Dr. Christopher J. Evans as its new Director, to thank donors and friends for their past support, and to provide an update on brain studies at UCLA.

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On June 12, the Entertainment Industry Men’s Tennis Classic raised nearly $137,000 for the Department of Pediatrics. The Division of Pediatric Hematology-Oncology held its Holiday Luau on December 13.

In Memoriam

Dr. Milly Liu, who joined the Board of Visitors in 1992, passed away on September 17, 2004. She was born in China and received her M.D. degree at National Central University in Nanking in east central China. Her postgraduate studies were conducted at the University of London Institute of Children’s Health. Dr. Liu was an intern at Children’s Hospital, San Francisco, and she did her internship and residency at Stanford University Hospital in pediatrics and residency at the University of Chicago Clinics in pediatrics. In 1956, she started her private practice in Torrance, and nine years later became an attending physician of pediatrics at Harbor-UCLA Medical Center. She and her husband, Dr. Steve C. K. Liu, a retired cardiologist, joined The Chancellor’s Associates, The Aesculapians, UCLA Medical Alumni Association, and UCLA Harbor Collegium, among others. Their philanthropy includes gifts to the UCLA Harbor Collegium Library Fund and the Milly and Steve Liu Young Researchers Endowment.

Donations may be made to the “Milly Liang Liu, M.D., Memorial Fund” at Los Angeles Biomedical Research at Harbor-UCLA.

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Dr. Ivan N. Mensh, professor emeritus in the Department of Psychiatry and Biobehavioral Sciences, passed away April 21 in Rockville, Maryland, at the age of 89. He was recognized nationally and internationally for his leadership in clinical and medical psychology; for his sustained record of scholarly, professional, and educational contributions; and for his service to the University and society. Dr. Mensh was the first head of the Division of Medical Psychology, where he created UCLA’s Medical Psychology Training Program. A pioneer in gerontology, he was one of the first to stress the importance of personality factors in assessing treatment outcome and the need for multivariant approaches to the study of psychopathology and its treatment. The Department’s Medical Psychology Training Program will continue to benefit from the fund that Dr. Mensh and his wife, Frances, established to endow a postdoctoral fellowship in neuropsychology.
Gifts

Dr. Leonard Apt, professor emeritus of ophthalmology and founding director of the Division of Pediatric Ophthalmology and Strabismus, created the Leonard Apt Endowed Chair in Pediatric Ophthalmology through a $1-million gift drawn from the trust of Frederic G. Rappaport, his nephew. Recently, Dr. Joseph Demer, a leading authority in the biomechanics of extra-ocular muscle movements, was appointed to the Chair. Demer states, “Dr. Apt’s generosity has created another enduring legacy that I will be proud to showcase throughout the world.” This position complements the Leonard Apt Fellowship in Pediatric Ophthalmology also established by Dr. Apt, the first active faculty member to be responsible for both a fellowship and a chair at UCLA.

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The Archstone Foundation has made two grants to enhance the health and well-being of older adults. Dr. Laurence Rubenstein, faculty member of the UCLA Multicampus Program in Geriatric Medicine and Gerontology (MPGMG), received $351,361 to benefit research on fall prevention. Dr. David B. Reuben, holder of the Archstone Foundation Endowed Chair in Geriatrics, directs the MPGMG. The UCLA Center on Aging was awarded $195,000 to extend its Memory Training program over the next two years to a minimum of 1,500 people in populous areas surrounding Los Angeles, and to expand the program nationally through the recruitment of appropriate licensees. Dr. Gary W. Small, Center Director and Parlow-Solomon Professor on Aging, has pioneered these courses that develop skills to improve memory retention and the ability to learn and retrieve information.

Recently, Mr. and Mrs. James Bashor made a gift of $1 million to support the UCLA Voice Center for Medicine and the Arts. Dr. Gerald Berke, Center Director and Chief of the Division of Head and Neck Surgery, states, “This meaningful contribution is making it possible to launch a new and expanded Voice Center, which will allow us to reach more patients with a variety of speech, throat, and swallowing disorders, including cancer, as well as to care for the professional voice.” In Los Angeles, known as the “Entertainment Capital of the World,” this resource is especially significant. The Bashors’ generosity is enabling UCLA to upgrade the Voice Center’s capabilities and provide patients with a state-of-the-art, technologically advanced facility, thereby delivering a level of care in voice medicine that was unavailable on the West Coast.

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In November 2004, UCLA dedicated the Larry L. Hillblom Islet Research Center. Located adjacent to Warren Hall, it houses the team of Dr. Peter C. Butler, Professor of Medicine, Division of Endocrinology, Diabetes, and Hypertension, and an internationally renowned diabetes researcher. The building was named in recognition of a $3.9-million grant from the Larry L. Hillblom Foundation, which also awarded Dr. Butler a research grant of $2 million. Dr. Butler serves with other leading researchers on the Hillblom Foundation’s Medical Advisory Board. In addition to the dedication, UCLA hosted the annual meeting of the Foundation’s Board of Directors and Medical Advisory Board, as well as two days of scientific sessions at which all current recipients of Hillblom Foundation grants presented papers on their research.

One of DHL’s three co-founders, Mr. Hillblom built this company into the world’s largest global air courier service. By virtue of his will, the Foundation’s funding supports medical research within the State of California, and particularly that conducted by the University of California. The Foundation’s priorities are efforts toward curing, treating, and managing diabetes mellitus and chronic and degenerative diseases associated with aging, especially brain and vision disorders.

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The George T. Pfleger Foundation has made significant gifts in support of the Department of Surgery. In 2000, its Board approved more than $1 million to renovate, upgrade, and name the Pfleger Liver Institute at UCLA, reflecting its profound commitment to aid in the quest to find better treatments, and ultimately a cure, for liver disease. Recently, the Foundation created the George T. Pfleger Endowment Fund for Surgery with another major commitment. Says Dr. Ronald W. Busuttil, Department Chair, “The members of the Pfleger Foundation have been instrumental in ensuring that surgical treatments and innovations at UCLA will continue to move forward to benefit patients here and worldwide. Their generosity has created a vital partnership that will help the Department retain its ability to recruit the brightest young faculty, promote cutting-edge research, and teach the next generation of medical students and residents.”

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The Resnick Family Foundation has donated $15 million since 1999 to support construction of the UCLA Medical Center Replacement Hospital, which will become the home of the newly named Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA in 2007. Mr. and Mrs. Resnick are the owners of Roll International Corporation, a Los Angeles-based firm whose holdings include Paramount Agribusiness, Teleflora, POM Wonderful, Fiji Water, the Franklin Mint, and Suterra. The Resnicks, who both serve on the Executive Board for the Medical Sciences at UCLA, also support other major areas on campus and received The UCLA Medal in 2002.

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Gifts totaling $5 million from the Strassburg Living Trust will provide a vital permanent resource for medical student scholarships at the School of Medicine, in memory of Neil, Lorraine, and Leo Strassburg. Financial assistance for students is one of the School’s highest priorities. Mrs. Strassburg was a long-time friend and supporter.

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In January 2005, through a bequest from the Estate of Gail Patrick Velde, UCLA received $1,050,000 each for the Brain Research Institute (BRI) and for the Center for Ulcer Research and Education (CURE) within the Division of Digestive Diseases. Pursuant to the terms of the trust, the BRI has established the Gail Patrick Endowed Administrative Chair in Brain Research, and the Division of Digestive Diseases has created the Gail Patrick Fund for CURE - Center for Ulcer Research and Education Foundation.
Golden Anniversary of the School’s First Graduating Class

In June 1955, the School of Medicine at UCLA graduated its first class. On April 8-10, 2005, members gathered once again and celebrated their 50 years of collective achievements in the field of medicine. Traveling back to campus from the close proximity of Westwood and the far reaches of Copenhagen, they came to share their memories of a medical school that started in Quonset huts with limited supplies, but with a strong passion for excellence.

Members of the Class of 1955 were joined by some of their faculty and mentors, including: Dr. and Mrs. Sherman Mellinkoff, Dr. and Mrs. Wiley Barker, Dr. and Mrs. David Solomon, Dr. and Mrs. Don Adams, and Drs. Clara Szego and Sidney Roberts.

The Class members have common passions: for medicine, for excellence, to be pioneers in their fields, for humanism as physicians, and for the friendships and bonds they forged 50 years ago. They drove other class members from airports, stopped in other cities to pick up class members, and overall showed how much they care.

The UCLA Medical Alumni Association would like to especially thank Dr. Don Adams, Chair of the 50th Reunion, and his committee: Drs. Robert Hollis, Akira Nishizawa, George Primbs, and Noel Thompson.

In 1955, students attending the School of Medicine paid $160 in fees per semester. Recognizing the tremendous cost of a medical education today, the first class also became the first to endow a permanent scholarship in its name. Brian Jordan ‘07, the first awardee, and his wife Kathy were introduced to the Class at the formal dinner. During his comments, Brian said, “I just want to be half the physician that you all are.”

The UCLA Medical Alumni Association sends sincere congratulations to the Class of 1955 and many thanks for this legacy of firsts.


Please contact Patricia Roderick at (310) 267-1837 for more information on our programs, or to become more involved.
**Giving Back**

“We make a living by what we get, we make a life by what we give.”
—Sir Winston Churchill

Many of our alumni practice this philosophy. They generously contribute their medical talents by giving to others. A graduate of the Class of 2005, Dr. Andy Griffin shared a recent experience that reflects this selfless lifestyle.

Andy and Stasia signed the final papers on a home in New Orleans the Friday before Hurricane Katrina struck. Andy remained in town to board it up, but his new neighbors insisted that he evacuate the area with them. Eight people, seven dogs, two cats, and 11 chickens headed to Lafayette in four cars. Andy worked at the local shelter there, treating people with hyperglycemia, asthma, chest pain, diabetes, intestinal disorders, and so on. He also volunteered at Lafayette’s Cajun Dome, where thousands of evacuees sought refuge. On a daily basis, the makeshift clinic saw nearly 600 adults and children.

Do you have a humanitarian story to share? Contact Patricia Roderick at (310) 267-1837 or proderick@support.ucla.edu.

**Why It Matters**

The Class of 2005 joined the previous two classes in the tradition of establishing a Class Scholarship Fund immediately upon graduation. This senior class raised the largest amount so far, $3,416, which was generously matched by Dean Gerald S. Levey, Senior Associate Dean Neil H. Parker, and Dr. Benjamin F. Cowan, past president of the MAA. “If we can continue this tradition every year with each graduating class,” says Dr. Cowan, “the growth of these initial endowments will be quite dramatic over time, providing more funds for scholarships.”

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**REUNION 2006 Is Coming**


Mark your calendar for the weekend of May 5–7, 2006, and come enjoy a reunion weekend of R&R (Recreation & Reminiscing) with your medical school classmates. On Friday night, a casual all-classes reception will take place at the Luxe Summit Hotel.

On Saturday, we will host our Distinguished Speakers in the morning (earn CME credit), and during the afternoon, you may enjoy a preview of the future home of Ronald Reagan UCLA Medical Center or a trip to the Getty Center. That night, individual class dinners will be held in the Faculty Center, giving you lots of time to “catch up” with your classmates. Brunch at the beach on Sunday morning will be the perfect ending to a truly memorable weekend.

SAVE THE DATE: MAY 5–7, 2006