Zilkha Neurogenetic Institute boasts $13 million in NIH funding

By Katie Neith

Over the past year, the Zilkha Neurogenetic Institute (ZNI) has received over $13 million in new research grants—quite a feat considering the significant cuts in funding resources that scientists have been up against in recent years.

The majority of these multi-year grants are from seven branches of the National Institutes of Health (NIH). “Traditionally, the NIH has been the main source of funding for scientists, but federal financial support has fallen flat in the past five years,” said David Warren, director of administration at the ZNI.

“Nonetheless, our scientists—most of whom are at the assistant professor level—have been extremely successful in securing R01 grants from the NIH.”

According to Warren, four of the newly funded proposals to NIH were first-time submissions, which have a national success rate of only 12 percent; four others were resubmissions, with a national success rate of 24 percent.

“Now that more ZNI investigators can sustain themselves and have independent lab operations, they can accept more research associates into their labs and outreach to others on- and off-campus for collaborations,” he said.

Warren said that the success in funding is proof the investment USC and the Keck School have made in Zilkha is beginning to pay off. ZNI opened in 2003, accepting its first recruits late in 2004. The institute’s current total grants portfolio exceeds $53 million.

The increase in funding is particularly favorable as the school embarks upon the recruitment of a permanent director of ZNI. Jeanie Chen, interim director of ZNI, notes that with secured funding, researchers at the institute can turn their attention toward building more cross-campus research programs and enhancing those that exist already.

“This is an exciting time of growth and opportunity at ZNI,” she said.

International consortium pinpoints chromosomal links to schizophrenia

By Meghan Lewit

A multinational group of investigators has discovered that people suffering from schizophrenia are far more likely to carry rare chromosomal structural changes of all types, particularly those that have the potential to alter gene function.

In addition, the study uncovered two new specific genomic areas that, when altered, significantly increase the risk of developing the disease.

The report from the International Schizophrenia Consortium, the largest and most complete such study to date, is published in the online version of the journal Nature.

Schizophrenia is a common, chronic and often devastating brain disorder characterized by delusions and hallucinations. It affects around one person in 100 at some point in their lives and usually strikes in late adolescence or early adulthood.

Despite the availability of effective treatments, the course of the illness is usually chronic, and response often limited, leading to prolonged disability and personal suffering. Family history, which signifies genetic inheritance, is the strongest risk factor for schizophrenia, but until now little has been known about the specific genes or chromosome regions involved.

“This surprising excess of many types of chromosomal changes in schizophrenia patients provides us with rich clues to follow up in future research,” said Pamela Sklar, of the Department of Psychiatry and Center for Human Genetic Research at Massachusetts General Hospital (MGH), a senior associate member of the Broad Institute of MIT and Harvard and corresponding author of the Nature paper. “This work opens up an entirely new way to think about schizophrenia and eventually will suggest new avenues for researching effective therapies for the sake of patients and families suffering from this terrible disorder.”

Formed in 2006, the International Schizophrenia Consortium is led by senior researchers from 11 institutes in Europe and the U.S. The research team was coordinated by Sklar, who is also director of genetics at the Stanley Center for Psychiatric Research at the Broad Institute, which provided the major funding and research resources for the current work.

Professors Michele T. Pato, the Della Martin Chair in Psychiatry, and Carlos N. Pato, the Franz Alexander Professor, of the Center for Genomic Psychiatry and the Zilkha Neurogenetic Institute, led the USC team of investigators. Crucial to the success of the project was the willingness of consortium groups to pool DNA resources that have taken them years to collect, totaling 3,391 individuals with schizophrenia and 3,181 related individuals without the disorder.

The investigators used new genomic technologies and novel analytical techniques developed at the Broad Institute and at MGH to screen these samples for structural variants in the genome, sites where a portion of a chromosome is missing or duplicated.

See NATURE, page 3

Quake underscores need for preparedness

By Ina Fried

What if the July 29 earthquake had been stronger than 5.4 magnitude?

What if your only knowledge of an office emergency plan was that a copy existed in a drawer or on a shelf?

Now is the time to pull out and update that plan, to get training, to prepare for what experts say is only a matter of time until a much larger earthquake strikes Southern California.

In the wake of last week’s earthquake, USC officials reminded everyone to sign up for the TrojansAlert system at trojansalert.usc.edu. If an emergency occurs after hours, on the weekend or when you’re out of town, watch for updates on the USC Web site at emergency.usc.edu.

According to Capt. Aaron Drake of the Department of Public Safety, everyone on campus needs to understand how to drop, cover and hold on, and where their outdoor building assembly point is located if evacuation is necessary.

USC Fire Safety and Emergency Planning advises evacuating if the building appears to be damaged or if direct evacuation by emergency personnel is necessary. If you see the fire in the building, pull the fire alarm, or if there is a hazardous materials spill, report it to emergency personnel. Use the stairs, not the elevator, and meet at a

See EMERGENCY, page 2
Cardiac electrophysiology director named

David A. Cesario has been named director of cardiac electrophysiology as part of the division of cardiovascular medicine. He began seeing patients on July 7.

After spending nine years at UCLA, Cesario joined the faculty at USC to develop a world-class atrial fibrillation program studying factors that contribute to abnormal heart rhythm.

“Our goal is to develop a unique program here at USC, both in research and treatment,” said Cesario. “We would like to make it a seamless process for patients with cardiac arrhythmia.”

Cesario works closely with Vaughan Starnes, chair of the Keck School’s Department of Cardiothoracic Surgery, and the entire team at the USC Cardiac and Vascular Institute.

The collaboration, Cesario explained, will help streamline the process from arrhythmia diagnosis to surgery at USC University Hospital: “At USC the physicians team oriented. Arrhythmia is best treated with a multidisciplinary approach and our goal is to establish the best model for doing so.”

Leslie Saxon, chief of cardiovascular medicine, said that the division of cardiovascular medicine is excited about the new addition to their faculty and looks forward to his many contributions.

“David Cesario brings additional expertise in the area of advanced ablation and translational research,” Saxon said. “He has established a local and national reputation and will greatly assist the USC Cardiac and Vascular Institute in its growth as the number one center for advanced cardiovascular medicine.”

Emergency Preparedness: If You’re in a Lab...

Preparing a research lab for an earthquake requires special precautions, said Jane Bartlett, associate director of Environmental Health and Safety.

She offered the following tips:

- Be sure that all chemicals are segregated from incompatibles.
- Store all liquid chemicals in secondary containment, such as a plastic tub that could contain the contents if glass bottles crack.
- Secure gas cylinders with two non-combustible straps or chains.
- Bolt furniture to the wall.
- Move large or heavy objects to locations under 4 feet high.
- Maintain a clear exit path from all areas of the lab.
- Lower fume hood and biosafety cabinet sashes when not in use.

“Emergency Preparedness: If You’re in a Lab...” was written by Jane Bartlett. Associate Editor: Jon Balick.

ETCETERA

Ronald W. Chapman, public health officer and deputy director for Solano County Department of Public Health in California, was honored with the American Medical Association’s (AMA) highest award for a public official.

Chapman, a 1989 graduate of the Keck School of Medicine, was one of eight honorees chosen this year from various levels of government to receive the Nathan Davis Award for Outstanding Government Service. Chapman was the only county-level official in the nation so honored.

The award, named for the founding father of the AMA, recognizes elected and career officials in federal, state or municipal service whose outstanding contributions have promoted the art and science of medicine and the betterment of public health.

Chapman joined the Solano County Department of Public Health in 2004. In his first year with the department, he wrote and was awarded a private foundation grant to build a continuous quality improvement infrastructure in public health, making Solano county one of the first counties in the U.S. to implement such a program.

Cheryl Resnik, assistant professor of clinical physical therapy, has received the American Physical Therapy Association’s (APTA) Lucy Blair Service Award, which recognizes individuals who have made exceptional contributions to the organization.

Resnik, who is also director of community outreach in the Division of Biokinesiology and Physical Therapy, was honored during the APTA’s awards ceremony in San Antonio, TX, in June 2008.

She is president of the California PTA and a member of APTA’s Education and Health Policy and Administration Sections and has been honored previously with the association’s Charles Magistro Service Award, the Section on Health Policy and Administration’s Outstanding Service Award, and the Greater Los Angeles District Professional Service Award.

APTA is a national organization that represents physical therapists, physical therapist assistants, and students nationwide and also fosters advancements in physical therapist education, practice and research.

EMERGENCY: Recent earthquake offers valuable lessons on disaster preparedness

Continued from page 1

pre-arranged location away from structures, power poles or retaining walls that could fall. Wait for an all-clear signal before re-entry.

“Each building has a volunteer Building Emergency Response Team, and it is their job to check on everybody after an earthquake,” said Bill Regensburger, USC’s director of Fire Safety and Emergency Planning.

Easily identifiable by their yellow vests, BERT members will check their assigned areas or floors, and report to DPS if anyone is trapped, injured or missing. BERT volunteers also will report any building damage or hazards.

In case of injuries, render first aid while waiting for medical response. Watch for the green vests of the volunteer Community Emergency Response Team, who are well trained to provide emergency medical assistance.

Following last week’s earthquake, neither of the main USC campuses had reports of fires, injuries or other significant problems.

Jane Bartlett, associate director of Environmental Health and Safety, said that the HSC Emergency Operations Center was activated and EHS staff were quickly dispatched to conduct hazardous materials assessments.

“This was the real thing,” she said, “but we were fortunate that we could get through our procedures and get some much-needed practice without any real crisis.”

Slight cosmetic damage was found in a few locations during the structural and utilities check of all HSC buildings by Facilities Management Services (FMS) personnel, and routine work orders were generated to repair the damage.

“All campus elevators and gas lines are equipped with seismic monitors that shut them down in the event of an earthquake,” said Mark May, interim director of FMS on the Health Sciences Campus. After a quake, FMS resets all services that have been interrupted. In the case of a more serious earthquake, which disrupts power to the campus, “FMS will do everything it can to follow our plans,” May said.

Recorded damage was found in a few laboratory buildings on the Health Sciences Campus. Regensburger said. “Overall, it was a good drill for us that has allowed us to identify a lot of details we need to follow up on to refine our protocols and procedures. Everybody should be reminded that we are overdue for a big earthquake, and that they should check their preparedness both on campus and at home.”

Information on USC’s emergency plan is at capsnet.usc.edu/events/. September is National Preparedness Month sponsored by the Department of Homeland Security.

For information and tips, see www.ready.gov/america/npm08/.

HSC Weekly is published for the faculty, staff, students and community of the University of Southern California’s Health Sciences Campus. It is written and produced by the Health Sciences Public Relations and Marketing staff. Comments, suggestions and story ideas are welcome via the contact points listed above. Permission to reprint articles with attribution is freely given.
Keck School pathologist elected to prestigious Taiwanese academy

By Meghan Lewit

Keck School of Medicine researcher Cheng-Ming Chuong has been elected to the Academia Sinica, a prestigious academic institution based in Taiwan, for his pioneering research into how stem cells are organized into tissues and organs.

Election to the organization is the highest honor the scientific community of the Republic of China bestows upon the most accomplished investigators in and outside of Taiwan.

Chuong, professor of pathology at the Keck School of Medicine, was recently elected to the institution’s Life Sciences division. In its nomination, the organization noted Chuong’s “creative, multi-disciplinary approach” to the study of stem cells and organ regeneration.

“I am very honored to be included among scientists and researchers of this caliber,” Chuong said. “It shows that our work is highly appreciated on an international level.”

Chuong’s innovative research has included studies into the molecular process that shapes organs, using avian beaks and feathers as models. The work may contribute to understanding the mechanism for repairing or regenerating tissues and organs. In January, his research team published a paper in the journal Nature identifying a novel cyclic signaling in the dermis that coordinates stem cell activity and regulates regenerative behavior of large populations of hairs using the mouse model. During the past six years, Chuong’s research team has produced six papers published in the journals Nature and Science, including four research papers and two commentaries.

Chuong said he is pleased that the significance of his basic research is appreciated by these top scientific journals, and grateful to the dedicated work of his research team members.

“In the long run, fundamental research has long-lasting impacts,” he said. “It is important to balance basic and translational research.”

Martin Pera, director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC, congratulated Chuong on “an outstanding and well-deserved honor.”

“Dr. Chuong, using the model system of the chick feather development, has made very important contributions to our understanding of morphogenesis, or the process in which cells are assembled to form tissues and organs,” Pera said.

NATURE: Consortium examines role of genes in schizophrenia

Continued from page 1

This unprecedented scale of cooperation allowed the analysis of enough data to identify schizophrenia-specific genomic alterations—including the newly identified sites on chromosomes 1 and 15 and an area on chromosome 22 observed in earlier studies—as well as a subtle general increase in structural genomic variants in schizophrenia patients compared with controls. A second study also published in Nature confirms the association of those three genomic sites with increased risk for developing the disease.

“The consortium should be recognized for taking the important first step towards unearthing the full underlying genomic architecture of schizophrenia and other psychotic disorders,” said Edward Scolnick, director of the Stanley Center for Psychiatric Research at the Broad Institute. “Only by doing such a large study could we have uncovered these stunning findings to such a high degree of confidence, thus setting the stage for an even more complete understanding of the full genomic contributions to disease. This study could only have been done with the open collaboration of many individuals and institutions dedicated to understanding—and treating—this terrifying disease.”

Thomas Insel, director of the National Institute for Mental Health, which partially funded the study, added, “By implicating two previously unknown sites, this study triples the number of genomic areas definitely linked to schizophrenia. It also confirms in a large sample that unraveling the secrets of rare structural genetic variation may hold promise for improved diagnosis, treatment and prevention of such neurodevelopmental disorders.”

Michele T. Pato, of the Keck School of Medicine, comments that “the detection of two new specific genomic areas that, when altered, significantly increase risk, sheds new light and hope on our understanding of the genetics of schizophrenia.”

The Center for Genomic Psychiatry and the Zilkha Neurogenetic Institute led two major projects related to this study: the Genomic Psychiatry Cohort study, and the Portuguese Island Collection. The Portuguese Island Collection has been done in collaboration with the University of Coimbra and the psychiatry services of the Azores and Madeira in Portugal.

“Our studies that have focused on the Portuguese Islands have been extremely fruitful in identifying genetic risk factors such as these rare deletions,” explains Carlos N. Pato, also chair of the Department of Psychiatry at the Keck School of Medicine. “Combining the Portuguese Island populations with others from the International Schizophrenia Consortium proved the significance of these rare chromosomal deletions.”

The other authors participating through USC include Helena Medeiros, Frank Middleton, Celia Carvalho, Christopher Morley, Ayman Fanous, David Conti, James A. Knowles, Carlos Pae Ferreira, Antonio Macedo and M. Helena Arezedo.

The study was supported by grants from the Stanley Medical Research Foundation through the Stanley Center for Psychiatric Research, the National Institute of Mental Health and the Sylvan Herman Foundation. Other major funding bodies include NARSAD, FCT in Portugal, Wellcome Trust, the Science Foundation Ireland and the UK Medical Research Council.

In Case of An Emergency...

Visit the USC Web: http://emergency.usc.edu

This page will be activated in case of an emergency. Backup Web servers on the East Coast will function if the USC servers are incapacitated.

Call the Emergency Information Phone: 213-740-9233

The emergency telephone system can handle 1,400 simultaneous calls. It also has a back up system on the East Coast.

Keck School embraces latest technology for faster PET-CT scans

By Sara Reeve

The use of hybrid combined positron emission tomography (PET) and computed tomography (CT) imaging has brought fundamental change to oncology patient treatment.

Since their introduction in 2001, combination PET-CT imagers make it possible to collect and correlate both anatomical and biological information into one image during a single examination. With a more complete picture of what is happening inside a patient’s body, doctors are able to diagnose problems, determine the extent of disease, prescribe treatment and track progress.

The Keck School of Medicine has been at the forefront of this technology being one of the first major institutions to put the scanner to use in patient care. According to Peter Conti, director of the USC PET Imaging Science Center and associate professor of radiology, the Keck School is continuing to lead the way with the purchase of a new Siemens Biograph 64-slice scanner, which replaces the school’s two-slice scanner.

“One big difference between the old two-slice scanner and the new 64-slice one is the timeliness of the procedures,” said Conti. “Everything with the new scanner is faster. Patient throughput is getting better and better, but the improved flexibility of the scanner means more than just getting more patients through in less time. We are also able to monitor and reduce radiation exposure, adjusting for weight, pediatric patients, and other considerations.”

Currently, 90 percent of the patients being scanned by the hybrid imager are cancer patients, many of whom are treated at the USC/Norris Comprehensive Cancer Center. In the future, Conti sees huge potential for cardiac care.

“The other big advantage of the new scanner is that it offers so many additional capabilities to us, especially for cardiology. In addition to your standard rest/stress studies, we can now add coronary angiography and calcium scoring,” noted Conti. “We can be a one-stop-shop for cardiology—all of your tests can be done on the same day. Patients only have to take one day off of work. It’s a huge boon both for clinical care and research.”

The Keck School of Medicine’s Department of Otolaryngology-Head and Neck Surgery, in conjunction with the USC/Norris Comprehensive Cancer Center’s Department of Radiation Oncology and the USC School of Dentistry, recently held its fourth annual symposium.

Attendees of the July 26 event included course co-directors Uttam Sinha (left) and Elizabeth Firi (right), vice dean for research advancement at the Keck School of Medicine. Firi opened the Saturday symposium, which featured discussion by a wide range of experts involved in organ preservation and balancing treatment with quality of life. Speakers included international physicians from India and Taiwan, as well as the U.S.
Keeping it all in the (Trojan) family

By Sara Reeve

James Chinn, 83, (M.D. ’52) remembers how he felt when his children decided to follow in his footsteps and attend USC for medical school.

“My kids told me, ‘Dad, if USC was good enough for you, then it’s good enough for me,’” he said. “My reply was ‘Great, but Cal is cheaper!’”

The laugh that follows cannot hide the pride Chinn has in his children and grandchildren. While he states that he never tried to influence his family’s choices of profession, it is clear that he provided a strong role model.

Chinn and his two sons, Maldon (M.D. ’72) and Douglas (M.D. ’76), are urologists in Arcadia. Daughter Deborah (M.D. ’79) was an obstetrician and gynecologist until back problems forced an early retirement. Grandson Steven (M.D. ’08) graduated in May and is pursuing his residency at the University of Michigan, specializing in otolaryngology. And granddaughter Cynthia plans to graduate from the Keck School in 2009.

“I never tried to influence my kids’ future,” said the elder Chinn. “I always said, ‘Just do what you want to do. Be well-rounded in the fundamentals of history, philosophy and music and do what makes you happy.’”

The practice of medicine is obviously what makes members of this family happy. From an early age, the Chinn children saw the difference that physicians can make in a patient’s life.

“When I did rounds at County [LAC+USC Medical Center], sometimes my children would come with me,” said James Chinn. “We also made house calls back then, and the kids would tag along then too. I wasn’t trying to be a role model, but I guess they were watching.”

Chinn, who supports the Keck School through his involvement with the Salerni Collegium, believes that the people of USC are what make it special. “The school is only as good as the doctors that finish,” said Chinn. “The school didn’t make us—we made the school. The faculty and the students make USC the school it is.”

Will future generations of Chinns continue the medical dynasty?

James Chinn said he doesn’t know. His other grandchildren are in graphic design, computers and school district administration. Of his 10-year-old grandson he said, “Who knows what he’ll decide to do. Maybe he’ll be a plumber. We need plumbers!”

James Le, USC School of Dentistry resident, 30

James Le, a resident in the USC School of Dentistry’s Oral and Maxillofacial Surgery/M.D. program, passed away on July 14 after a battle with cancer. He was 30.


Although in pain, and his athletic body weakened by the cancer and chemotherapy, Le took time in his last two months of life to write many touching and eloquent journal entries about the progress of his disease and the reality of facing death at a young age.

Le is survived by sisters Jacqueline and Julie, and mother, Suzy Nguyen. Family and friends are working to establish a fund for a scholarship in honor of James Le. Details on the fund will be announced at a future date.

HSC NEWSMAKERS

Complete listing at: www.usc.edu/uscsnews/usc_in_the_news/


A July 28 U.S. News & World Report article featured research by Alzheimer’s expert Lon Schneider showing that Alzheimer’s treatment trials may need a larger pool of participants to accurately assess if drugs are effective. The report was also cited in a Washington Post article.

A July 28 Los Angeles Times article quoted exercise expert Allan Abbott about erythropoietin, a hormone that stimulates bone marrow to produce red blood cells.

A July 28 Los Angeles Daily News article quoted surgeon Namir Kakhouda in a feature on Michelle Davis, a Long Beach resident who lost 115 pounds after undergoing bariatric surgery at USC University Hospital. The story also ran in The Daily Breeze.

A July 22 Shape Magazine article quoted environmental health expert Ed Avol on how to limit exposure to air pollution while exercising outdoors.

HSC Calendar of Events

The HSC Calendar is online at
www.usc.edu/hsccalendar

Monday, Aug. 11

4 P.M. “Transplant Conference,” Various faculty. UNH Salerni Rm. Info: (323) 442-9093

Tuesday, Aug. 12


Wednesday, Aug. 13


Friday, Aug. 15

8:30 A.M. “Pneumonia,” Thomas Boyle, USC. GNH 11-321. Info: (323) 226-7923

Wednesday, Aug. 20

8:30 A.M. “PFT II,” Ahmet Bayrak, USC. GNH 11-321. Info: (323) 226-7923

Friday, Aug. 22


Monday, Aug. 25

4 P.M. “Transplant Conference,” Various faculty. UNH Salerni Rm. Info: (323) 442-9093

Wednesday, Aug. 27


Friday, Aug. 29

8:30 A.M. “Pulmonary Thromboembolism,” Renli Qiao, USC. GNH 11-321. Info: (323) 226-7923

Notice: Deadline for calendar submission is 4 p.m. Monday to be considered for that week’s issue—although some weeks advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to HSC Weekly, KAM 400 or fax to (323) 442-2852, or e-mail to oblas@usc.edu. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location, and a phone number for information.