

USC study links close proximity to freeway with autism

By **Ellin Kavanagh**

Living near a freeway may be associated with increased risk of autism, according to a study published by a team of researchers from the Keck School of Medicine, Children's Hospital Los Angeles, and the UC Davis MIND Institute.

The paper appears online in the journal *Environmental Health Perspectives*.

"Children born to mothers living within 309 meters of a freeway appeared to be twice as likely to have autism," said Heather Volk, first author on the study.

Volk holds joint appointments at the Community, Health Outcomes & Intervention Research Program at The Saban Research Institute of Children's Hospital Los Angeles, the Zilkha Neurogenetic Institute and the Department of Preventive Medicine at the Keck School.

Autism is a developmental disorder that has long been

ascribed to genetic factors. While changes in diagnostic criteria and increased awareness have been thought to contribute to the rising incidence of the disorder, these factors alone cannot explain the dramatic increase in the number of children affected. The Centers for Disease Control and Prevention reported a 57 percent increase between 2002 and 2006. This study supports the theory that environmental factors, in conjunction with a strong genetic risk, may be one possible explanation for the increase.

While little is known about the role of environmental pollutants on autism, air pollution exposure during pregnancy has been seen to have physical and developmental effects on the fetus in other studies. Exposure to air pollution during the first months of life has also been linked to cognitive developmental delay. However, the authors said that this study is the first to link exposure

to vehicular pollutants with autism risk, though direct measurements of pollutants were not made.

Data from children with autism and typically developing children, who served as controls, were drawn from the Childhood Autism Risks from Genetics and the Environment (CHARGE) study, a population-based case-control study of preschool children. Children were between the ages of 24 and 60 months at the start of the study and lived in communities around Los Angeles, San Francisco and Sacramento.

Population-based controls were recruited from state of California birth files and were frequency matched to the autism cases by age, gender and broad geographic area. Each participating family was evaluated in person. All children were assessed; assessment of autism was done using well-validated instruments.

The study examined the

locations where the children's families lived during the first, second and third trimesters of the mothers' pregnancies, and at the time of the baby's birth, and looked at the proximity of these homes to a major road or freeway. The participants' gestational ages were determined using ultrasound measurements and prenatal records.

Volk and her colleagues found that living within 309 meters of a freeway (or just over 1,000 feet) at birth was associated with a two-fold increase in autism risk. This association was not altered by adjustment for child gender or ethnicity, maximum education in the home, maternal age or prenatal smoking. The researchers found no consistent pattern of association of autism with proximity to major roads, as opposed to freeways, however.

Traffic-related air pollutants have been observed to induce inflammation and oxidative stress in toxicological and

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USC study shows that living within 1,000 feet of a freeway at birth is associated with a two-fold increase in autism risk for children.

USC Norris brightens holidays with rose-colored lasses

By **Leslie Ridgeway**

Smiles were in bloom Dec. 7 at USC Norris Comprehensive Cancer Center and Hospital, when the 2011 Tournament of Roses Royal Court made their yearly visit to patients, faculty and staff.

For the 15th year, the young women, official ambassadors for the annual Pasadena Tournament of Roses Parade, spread holiday cheer among day hospital patients and met with faculty physicians to learn more about the work that goes on at USC Norris.

Laughter and chatter filled the air as the six members of the Royal Court walked through the hospital, handing out embroidered rose stickers (a process called "rosing"), shaking hands and generally charming everyone in the vicinity.

"They are so energetic," said patient Angelica Gonzales of Los Angeles, who got to hear about the Royal Court's regimen the night before the Rose Parade (hair and makeup start at 2 a.m.).

Patient David Black of Chino Hills appreciated



USC Norris Day Hospital patient Angelica Gonzales enjoys a visit with the Rose Parade Royal Court. From left, top: Princess Michelle Washington, Princess Kathryn Thomson. Bottom, from left: Queen Evanne Friedmann, Princess Tatyane Berrios.

the respite from cancer treatment: "When you're involved with something serious like this, it helps brighten the day to see these young ladies," he said. "You can't help but be in a better mood."

Faculty and staff were caught up in the excitement, many adding to collections of embroidered roses worn

proudly on ID badges.

"It's a real lift for the staff to see that they are important enough for such a special visit," said Carol Marcusen, director of social services. "It's an honor to meet these accomplished girls."

The court met with cancer surgeon Howard Silberman,

See **NORRIS**, page 3

USC University Hospital expands interruption free zone program

By **Tania Chatila**

A successful pilot program to enhance accuracy and safety during medication administration is about to go hospital-wide. Interruption free zones—areas that are free from intrusion or distraction—have been green-lighted for implementation in all non-intensive care units throughout USC University Hospital beginning January 2011.

These zones were initially launched in 6-North and 8-West in July as part of a pilot study. Since then, medication errors in those units as a result of interruptions have decreased, motivating administrators to introduce the program to other units.

"The whole idea behind this project was not to decrease and eliminate every interruption, because that's virtually or almost impossible," said nurse manager Daniel Hudson, who is spearheading the interruption free zone project. "The idea is we want our nurses to have the tools they need to stay focused as much as possible during medication administration. This program is a simple, cost-effective way to make that happen."

Interruption free zones are clearly marked with signs, and neon yellow sashes identify nurses who are in the process of administering medications. As part of the program, these nurses are not to be interrupted while wearing the neon yellow sashes unless there are questions about the medications being administered or there is an emergency.

In 6-North, Hudson said the program has helped to decrease the average time it takes a nurse to administer a medication from 12 minutes to eight minutes. And last month, 6-North and 8-West had less than a handful of medication errors combined—none of which were related to interruptions.

"Medication errors are not isolated to our hospitals. It's something that happens across the country," Hudson said. "But at least we have found an effective way to help minimize those errors and enhance patient safety."

Hospital administrators hope to have the program implemented in all non-ICU units by May 2011, starting with 6-East and 6-West next month. There are also plans in place to refine the process for ICU floors and implement interruption free zones there by the end of 2011.

USC Zilkha Neurogenetic Institute honors its founding director

Zilkha Neurogenetic Institute investigators 'felt that there would be no greater recognition of Zach [Hall's] accomplishments than to establish a named lectureship in his honor.'

—Pat Levitt, current director of the institute

By Imelda Valenzuela

An overflow crowd attended the inaugural lecture of a new lecture series honoring the USC Zilkha Neurogenetic Institute's first director, Zach Hall, on Nov. 29 at the Health Sciences Campus.

Hall served as institute director and as senior associate dean for academic development at the Keck School of Medicine, from 2002 to 2005. An esteemed neuroscientist with a reputation as a firm administrator, Hall was instrumental in building an interdepartmental neuroscience program at the University of California, San Francisco (UCSF). Hall then served as director of the National Institute of Neurological Disorders and Stroke, where he managed 700 scientists and administrators. In 2005, Hall became the first president of the California Institute for Regenerative Medicine.

"Zach launched an outstanding neuroscientific effort as Zilkha's first director,

recruiting a number of faculty members to the institute," said Pat Levitt, current director of the institute and Provost's Professor of Neuroscience, Psychiatry and Pharmacy. "Zilkha investigators felt that there would be no greater recognition of Zach's accomplishments than to establish a named lectureship in his honor." The lectureship is to become an annual event.

The standing-room-only crowd in the Herklotz Seminar Room at the Zilkha and the overflow audience housed in the first floor conference room at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research, who viewed the event via webcast, listened to keynote speakers Lily Jan and her husband Yuh-Nung Jan, from the University of California San Francisco School of Medicine. Both are Howard Hughes Medical Institute investigators and members of the National Academy of Science. The Jans were among the first



USC hosted a Nov. 29 event inaugurating a lecture series in honor of the USC Zilkha Neurogenetic Institute's founding director Zach Hall (right). He appears above at the event with his wife, Julie Giacobassi (center), and Pat Levitt, current director of the institute.

© Steve Cohn

of Hall's faculty recruits at UCSF and have since gone on to become prominent scientists in their own rights.

In honor of the event, leaders at the institute also announced the Zach Hall Travel Fund, available to graduate students in Zilkha investigator laboratories, to provide travel awards to attend a scientific meeting or research training opportunity as requested by a Zilkha principal investigator. A

total of \$2,000 in travel awards will be given out annually to start. The institute hopes to increase the number and size of awards over time.

"It's nice to think that this lecture series will bring outstanding scientists in the study of the nervous system to the Zilkha," said Hall, now retired. "And the fact that they should come on an occasion with my name associated with it gives me special pleasure."

New fotonovela developed at USC focuses on dealing with dementia

By Gabrielle Olya

An estimated 35.6 million people worldwide are living with dementia, according to a report by Alzheimer's Disease International.

With such a startling number of people suffering from the group of brain diseases that affect intellectual and social abilities severely enough to interfere with daily functioning, it's no surprise that associate professor Mel Baron chose dementia as the focus for *Forgotten Memories*, his new fotonovela.

The fotonovela, which is written in English and Spanish, uses photographs and text in a comic book-like fashion to tell the story of Memo, an elderly mariachi musician who is showing signs of memory loss.

His family becomes concerned when he forgets how to

get to their usual mariachi gig, and after persuasion from their local pharmacist, Memo agrees to undergo memory screenings.

At the clinic, Memo learns that he is showing signs of dementia, and his physician recommends a medication.

In addition, she encourages his wife to attend a support group to learn how to best manage the disease and to find people who can relate to her struggles.

Memo is portrayed by real-life musician Jesse Ceballos, who comes from a long line of mariachis of Mexican descent. His wife is played by Rosalie Ceballos, his actual spouse.

The book is aimed at L.A.'s Spanish-speaking communities, and the story is based on research about individuals who struggle with Alzheimer's.

"In this community, dementia is rarely talked about,"

Baron said. "Families struggle with it but have trouble being open about it and acknowledging it as a disease. Instead, those with dementia are often labeled as being 'loco' as in our story."

Research that informed the script was the result of a collaboration among USC schools. Margaret Gatz, a professor of psychology, gerontology and preventive medicine at USC College; John Danner, a psychiatric social worker at the Keck School of Medicine of USC; and Brad Williams, a professor of clinical pharmacy with a specialty in geriatrics at the USC School of Pharmacy, contributed to the project.

"Working together had a major impact on the way the script turned out," Baron said. "We spent a considerable amount of time crafting the message to ensure we would

get the main points across in a culturally sensitive way."

Baron hopes that readers will accept the message that it is important for caregivers to get the help and support they need when dealing with someone with dementia. The fotonovela will be distributed in safety-net clinics, local pharmacies and other community events, including a local mariachi festival.

Forgotten Memories was

written by Roberto Espinosa, Gregory Molina, Raquel Salinas and Estefany Zendejas. It was photographed and directed by Mike Powers.

Support for the project was provided by the USC School of Pharmacy, Forest Laboratories Inc., the Good Neighbor Pharmacy, the National Association of Chain Drug Store, the USC Good Neighbors Campaign, Pfizer and the USC Memory and Aging Center.

Keck School Dean Carmen A. Puliafito reappointed to CIRM Governing Board

Keck School of Medicine Dean Carmen A. Puliafito has been reappointed to the Independent Citizen's Oversight Committee, a governing board of the California Institute for Regenerative Medicine (CIRM). Puliafito has served as a committee member since 2008.

CIRM is governed by 27 dedicated Californians representing patients, researchers and the biotechnology industry. According to CIRM, their collective knowledge, passion and commitment to CIRM's mission has guided the organization since its inception. These board members provide recommendations regarding CIRM funding, ethical standards and facilities.

Puliafito has served as dean, professor of ophthalmology and holder of the May S. and John Hooval Dean's Chair in Medicine for the Keck School since 2007. He previously served as professor and chair

of ophthalmology for the University of Miami, Miller School of Medicine, and director of the Bascom Palmer Eye Institute from 2001 to 2007. He was professor and chair of ophthalmology at Tufts University School of Medicine and was director of the New England Eye Center from 1991 to 2001.

Puliafito is a member of the American Medical Association, California Medical Association, American Association of Ophthalmology and the Association for Research Vision and Ophthalmology.

An outspoken proponent of regenerative medicine and stem cell research, he is featured, along with other USC leaders and CIRM board members, in a video highlighting the new Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC, available online at <http://tinyurl.com/29rz4be>.

The Weekly

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Trio of Keck School physicians named to Society for Pediatric Research

By Ellin Kavanagh
Three Keck School of Medicine investigators—Steven Mittelman, Leo Mascarenhas and Sebastien Bouret—have been elected into the prestigious Society for Pediatric Research.

Their election to this society represents peer recognition of their research achievements in pediatrics.

Steven Mittelman conducts his research at the Center for Endocrinology, Diabetes and Metabolism at Children’s Hospital Los Angeles, and is an assistant professor of pediatrics, physiology and biophysics at the Keck School.

“Being overweight impairs our ability to treat a patient’s leukemia, the most common cancer occurring in children,” Mittelman explained.

“We’ve found that fat cells secrete chemical messengers that cause leukemia cells



Photo Courtesy of Children’s Hospital Los Angeles

Recognizing their research contributions, the Society for Pediatric Research has elected to its ranks (from left) Sebastien Bouret, Leo Mascarenhas and Steven Mittelman.

to migrate into the fat. Fat cells also secrete factors that protect leukemia cells from chemotherapy, making the disease more difficult to treat,” he said.

Leo Mascarenhas is director of the Clinical Trials Office in the Children’s Center for Cancer and Blood Diseases and Principal Investigator for the National Cancer Institute funded Children’s Oncology Group grant at Children’s

Hospital Los Angeles. He is an associate professor of clinical pediatrics at the Keck School.

“Childhood cancer is the leading cause of disease-related death in pediatrics in the United States,” said Mascarenhas, whose research focuses on developmental therapeutics for patients with bone and soft tissue sarcomas.

“Despite the remarkable progress made in the treatment of childhood cancer in the last four decades, improved therapies are still needed for our patients with a poor prognosis and less toxic therapies for those destined to survive,” he said. “This can be accomplished only through basic, translational and clinical research.”

The lab overseen by Sebastien Bouret is part of the Neuroscience program at The Saban Research Institute

of Children’s Hospital. He is an assistant professor of pediatrics at the Keck School.

“One theory explaining obesity is called perinatal programming,” Bouret said. “Perinatal programming refers to the effect of specific events, which occur during gestation and soon after birth, on lifelong health.

“Nutrition during pregnancy appears to have an important impact on obesity, with both maternal obesity and maternal malnutrition increasing the incidence of obesity and type 2 diabetes in babies born to these mothers.”

The Society for Pediatric Research exists to foster the research and career development of investigators engaged in creating new knowledge that advances the health and well-being of young people. Membership is by election only.

NORRIS: Rose Court cheers patients

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as well as Paul Pagnini, who gave the group a look at radiation therapy equipment, and Mary Yamashita and Linda Hovanessian-Larsen, who displayed digital breast imaging and provided information on mammography.

The Royal Court included Queen Evanne Friedmann, and Princesses Tatyane Berrios, Sarah Fredrickson, Jessica Montoya, Kathryn Thomson, and Michelle Washington. Princess Tenaya Senzaki was unable to attend.

After the visit, the Royal Court can be assured of several more viewers tuning in to watch them roll down Colorado Boulevard on New Year’s Day. Some might even be there in person.

“I live on the parade route,” said patient Kathleen Dimatteo, a Pasadena resident. “I’m going to sit on my balcony and wave to them.”



©Brook Photography

Keck School Dean hosts Town Hall Meeting at CHLA

Keck School Dean Carmen A. Puliafito (left) recently co-hosted a Town Hall and Holiday Reception in the Saban Auditorium at Children’s Hospital Los Angeles. Held on Dec. 8, the event celebrated Keck faculty working at Children’s Hospital and explored ways of building bridges between the two organizations. “This is really a terrific place that is incredibly important to the mission—not only of our medical school, but also of USC,” said Puliafito. “We’d like to do more with building the relationship between CHLA and the rest of the elements of the USC medical family.”

D. Brent Polk, professor and chair of the Department of Pediatrics, and director of the Saban Research Institute at Children’s Hospital Los Angeles, and Henri R. Ford, vice dean of medical education for the Keck School and chief of surgery, Children’s Hospital Los Angeles, co-hosted the event.

AMSA gives Keck School top marks in avoiding conflicts of interest

The American Medical Student Association (AMSA) has awarded the Keck School of Medicine a grade of “A” on the its 2010 PharmFree Scorecard—making the school one of only 18 in the United States to receive the highest mark.

The AMSA Scorecard is widely accepted as a national standard for the quality and integrity of an institution’s policies concerning potential conflicts of interest derived from interactions with the pharmaceutical and medical device industries.

Keck School of Medicine Dean Carmen A. Puliafito hailed the announcement, saying, “This ‘A’ rating was achieved through the hard work of our faculty, the educational leadership of the Keck School—in particular Associate Dean Donna Elliott and Assistant Dean Pam Schaff—and most importantly, Tammy Capretta and Laura La Corte in the USC Compliance office.”

He added, “I would also like to recognize a special group of our Keck School medical students, led by Rebecca Sadun ’10 and Brian Hurley ’09, who played an important role in launching our medical school compliance efforts more than two years ago. Let me express my thanks to all who were involved in making this recognition possible. This is an accomplishment in which we all can take great pride.”

The Weekly NEWSMAKERS

- A Dec. 7 article in *USA Today* featured a study by **Donna Spruijt-Metz** and colleagues, which found that normal-weight children get 16 more minutes of daily exercise than their obese peers. The researchers also found that on average girls spend 20 fewer minutes per day exercising than boys do. “This is a huge wake-up call to society,” Spruijt-Metz said. *The New York Daily News* and *EFE* (Spain) also featured the research.

A Dec. 7 column in the *Los Angeles Times* quoted **Anne Peters** about changes UnitedHealthcare is making to its insulin formulary.

A Dec. 7 article in the *Sydney Morning Herald* (Australia) featured a USC study which found that pregnant women who regularly use cell phones may be more likely to have children with behavioral problems. The effect was particularly evident if the children started using cell phones in their first seven years, the
- story stated. The research was also covered by *Daily Mail* (U.K.), *Indian Express* (India), *The Herald* (U.K.), *Daily Express* (U.K.) and Press Association (U.K.).

A Dec. 8 article in the *San Francisco Sentinel* reported that Gov. Arnold Schwarzenegger reappointed Keck School of Medicine of USC Dean **Carmen A. Puliafito** to the Independent Citizen’s Oversight Committee of the California Institute of Regenerative Medicine.

A Dec. 10 Red Orbit posting reported that **Jeffrey S. Upperman**, director of the Trauma Program at Children’s Hospital Los Angeles, has co-authored a call to action for filling a significant gap in pediatric public health care and seeks federal oversight to establish the framework for a pediatric applied trauma research network (PATRN). This call to action was published simultaneously in the *Journal of Pediatric Surgery* and the *Journal of Trauma*.

Campus celebrates season of charity and service



Jon Nalick

The Health Sciences Campus got into a giving spirit this year with a series of clothing drives, gift drives and local volunteer work to help the area's needy families.

Left, members of the Keck School of Medicine Department of Ophthalmology prepare the more than 100 gifts they collected for an Adopt-A-Family program through the local Salvation Army office. The department has participated in the annual drives since 2006 and has been able to assist 10 different families—including two families this year. Front row (from left): Andrea Lantini, Margarita Hernandez, Lilia Gonzales, Judith Meraz, Cecelia Zamudio and Department Chair Ronald Smith. Back row: Lana Duda and Rich Dupaix.

Below, USC nurse practitioners Fiona Mwangale, Mary Schoenbaum, Karen Julien and Sophia Lam volunteer—sorting and boxing oranges and carrots—at the Los Angeles Regional Food Bank in South Los Angeles.



Beth Keller

AUTISM: Study suggests traffic-related air pollutants as possible factors

Continued from page 1

human studies. The emerging evidence that oxidative stress and inflammation are involved in the pathogenesis of autism supports the findings of this study.

“We expect to find many, perhaps dozens, of environmental factors over the next few years, with each of them probably contributing to a fraction of autism cases. It is highly likely that most of them

operate in conjunction with other exposures and/or with genes,” said Irva Hertz-Picciotto, chief of the division of environmental and occupational health in the Department of Public Health Sciences at UC Davis, and principal investigator on the CHARGE study.

Volk's co-authors on the

study include: Rob McConnell, from the Department of Preventive Medicine at USC, Irva Hertz-Picciotto, and Lora Delwiche, from the University of California at Davis, and Fred Lurmann, of Sonoma Technology, Inc.

This study was supported by grants from the National

Institute of Environmental Health Sciences, the Environmental Protection Agency, the MIND Institute, the Southern California Environmental Health Sciences Center, Autism Speaks and the Las Madras Endowment on Autism Research, Intervention and Outcomes.

Calendar of Events

This Calendar of events is also online at www.usc.edu/hscalendar for the Health Sciences Campus community

Thursday, Jan. 6

5:30 p.m. Hiroshima/Nagasaki Memorial Project exhibit. IGM Art Gallery.

Friday, Jan. 7

8:30 a.m. Surgical Grand Rounds. “Aggressive Approach to Pulmonary Embolectomy for Massive Acute Pulmonary Embolism: A Historical and Contemporary Perspective,” Michael McFadden, USC. DOH 100. Info: (323) 442-2506

Friday, Jan. 14

8 a.m. Pathology and Laboratory Medicine Grand Rounds. “An Update on Lipomatous Tumors: New Concepts and Old Standbys,” John Goldblum, Cleveland Clinic. NOR 7409. Info: (323) 442-1180

8:30 a.m. Surgical Grand Rounds. “Future of Minimally Invasive Surgery: Looking into the Crystal Ball,” Richard Satava, Univ. of Washington. DOH 100. Info: (323) 442-2506

Thursday, Jan. 20

Noon. KSOM Cellular Homeostasis Lecture. “Aging-related Changes Stem Cells and the Stem Cell Niche,” Leanne Jones, Salk Inst. MCH 156. Info: (323) 442-3121

Thursday, Jan. 27

10 a.m. - 2 p.m. “Business Diversity EXPO 2011,” showcasing USC small local, women, minority, and veteran-owned businesses. UPC: TCC Ballroom (lower level). Info: (213) 821-1787

Notice: Deadline for calendar submission is 4 p.m. Monday to be considered for that week's issue—although three weeks' advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to *The Weekly*, KAM 400 or fax to (323) 442-2832, or e-mail to ebalauw@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.

John Viljoen, longtime chair of LAC+USC Dept. of Anesthesiology, 75

John (Jack) Viljoen, who served as chair of the LAC+USC Medical Center Department of Anesthesiology from 1982 to 1992, died Nov. 27 of complications following a surgical procedure. He was 75.

Viljoen was living in his hometown of Cape Town, South Africa, where he completed medical school and received anesthesia specialty certification from the University of Cape Town.

Viljoen moved to the United Kingdom and received additional training as a senior registrar in anesthetics, and subsequently emigrated to the United States where he joined the Cleveland Clinic Foundation as a Cardiac Anesthesia Fellow.

He became director of the clinic's cardiac anesthesia division prior to accepting the position at USC and moving

to Los Angeles. He was an early investigator of the role and perioperative use of beta blockers in cardiac anesthesia.

The memorial will be held on Jan. 8, 2011, at 11 a.m. at St. Rita Parish, located at 50 E. Alegria Avenue in Sierra Madre, Calif.



John (Jack) Viljoen

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