

Neuroscientist talks autism at AAAS, publishes papers

‘Most children with autism don’t have a single gene disorder. It’s all about having different risk genes in combination with the environment.’

—Pat Levitt, director of the Zilkha Neurogenetic Institute at the Keck School of Medicine of USC

Prenatal exposure to traffic-related air pollutants, combined with a genetic predisposition to autism, appears to alter brain development and significantly increase the risk for developing the disorder.

Keck School of Medicine of USC neuroscientist Pat Levitt, director of the Zilkha Neurogenetic Institute, led a discussion about the links between genetic and environmental risk for autism spectrum disorder (ASD) on Feb. 18 at the annual meeting of the American Association for the Advancement of Science (AAAS) in Vancouver, Canada. The AAAS is one of the largest nonprofit groups in the world dedicated to promoting science.

“The idea that autism is a threshold disorder resonates with people,” Levitt said.

“Most children with autism don’t have a single gene disorder. It’s all about having different risk genes in combination with the environment.”

Levitt’s AAAS presentation focused on recent epidemiological and biological research from the Keck School. In 2010, researchers Heather Volk and Rob McConnell implicated proximity to freeways as a risk factor for autism, showing that children born to mothers who live close to freeways have twice the risk of developing ASD. In a separate study, Levitt and colleagues confirmed that prenatal exposure to benzopyrene, a common carcinogen found in traffic exhaust, alters the expression of the MET gene—which has been shown to double the risk for developing ASD—increasing one’s risk for autism more than genetics or

environmental factors could do individually.

“Understanding the genetic and environment factors that influence ASD can help us understand the different types of autism out there, along with their comorbidities,” Levitt said. “Not every child responds the same way to treatment. That’s why it is so important to understand the various clinical populations to provide more personalized care.”

In addition to his presentation, Levitt recently authored two new studies that look at the clinical and social aspects of autism. The first, “Gastrointestinal Dysfunction in Autism: Parental Report, Clinical Evaluation, and Associated Factors,” was published Jan. 9, in the online edition of *Autism Research*.

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New research may boost treatment of head and neck cancers

Researchers at the Keck School of Medicine and the State University of New York (SUNY) at Buffalo have developed a method that increases the effectiveness of radiation therapy for head and neck cancer treatment in mouse models by more than 50 percent.

The study, “Gold nanorod–sphingosine kinase siRNA nanocomplexes: a novel therapeutic tool for potent radiosensitization of head and neck cancer,” was led by first author Rizwan Masood, assistant professor of research in otolaryngology, and conducted in the laboratory of Uttam Sinha, associate professor of otolaryngology at the Keck School. The research was published in the journal *Integrative Biology*.

The team led by Masood and Sinha and SUNY’s Paras Prasad developed a method to defeat a built-in defense mechanism that most head and neck tumors have, helping them fight off radiation therapy. To get past this mechanism, oncologists typically must deliver large doses of radiation to patients, causing surrounding tissue damage and significant side effects.

The researchers developed a nanoparticle formulation that sensitizes the tumor and, as a result, increases by half the efficacy of radiation therapy in a mouse model of head and neck cancer.

“If we can deliver the least amount of radiation to the patient, they will suffer fewer side effects and have a much better quality of life,” said Masood.

Side effects of heavy radiation include mucositis, a condition in which the patient experiences a painful burning sensation inside the mouth, difficulty swallowing and speaking, and chronic pain syndrome caused by scarring in the neck and shoulders. A patient who undergoes heavy radiation treatments and experiences a return of

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Photos by Tania Chatila

Left, Eusebio Herrera (left), Keck Hospital of USC OR materials manager, and Jill Mathison, associate administrator of operations at the USC hospitals, saw wood at a Habitat for Humanity Build in Lynwood, Calif., on Feb. 25. Above, Tania Zwick, hospitals Versant RN Residency Program manager, hammers nails into an exterior wall.

USC hospital staffers join Habitat for Humanity to build local home

By Tania Chatila

When a group of about 30 Keck Medical Center of USC staff members and guests arrived at a Habitat for Humanity job site last weekend, there was only a shell of a home intact.

But after a full day on the job, this group of amateur construction workers had come together to install flooring, reinforce walls, frame a door and cut out a window at a Lynwood, Calif., structure that will soon be home to a deserving family.

“Together, as a team, we accomplished so much and moved one family closer to having their own home—a

dream that not many families are able to achieve,” said Kevin Kaldjian, administrative operations manager at the two USC-owned hospitals.

The build is part of an ongoing sponsorship between the two USC-owned hospitals and Habitat for Humanity, an international organization that provides safe, affordable housing to low-income families across the United States and the globe.

Hospitals Chief Financial Officer Jon Spees spearheaded the sponsorship after participating in a Habitat project on his own. The organization has committed to staff four home builds in

the greater Los Angeles area over the course of a year. Two builds have already been completed—one last year and the most recent on Feb. 25. Additional builds will take place this month and in June.

“This is a unique opportunity for our hospitals and our medical center to give back,” said Spees. “Part of who we are as an organization is our commitment to serving the greater community. Our teamwork last weekend reflects the dedication of our entire medical center—every day—to all of the people we serve.”

Saturday’s build was a rehabilitation of a foreclosed

home that, when completed, will go to a single mother of two.

At the job site, staff members shingled a garage, hammered nails into walls and sawed wood to create beams to support the structure. They worked side by side with an on-site construction manager and a couple that expects to receive their own Habitat home later this year.

“These builds are not easy,” said Cortney Montgomery, hospitals clinical nutrition manager. “It’s tiring and a lot of hard work. But to think that your efforts are going toward providing a home for a family makes everything worth it.”

USC symposium on March 9 to gather distinguished autism experts

By Mike McNulty
USC faculty and community experts will convene on March 9 at the USC Occupational Science Symposium to share research and perspectives on autism and autism spectrum disorders with an audience of university colleagues and students, health professionals and public advocates.

The 2012 Occupational Science Symposium, “Autism in Everyday Life: Interdisciplinary Research Perspectives at USC,” is a day-long event that will showcase USC’s excellence in autism research across the sciences, arts and humanities, and will foster dialogue among disciplines approaching autism from different angles.

The symposium, now in its 23rd year, is hosted by the USC Division of Occupational Science and Occupational Therapy at the Herman

Ostrow School of Dentistry. In years past, the Occupational Science Symposium has brought world-renowned guests such as physicist Stephen Hawking, primatologist Jane Goodall, neuroscientist Antonio Damasio, and psychologist Jerome Bruner to USC.

This year’s lineup features five distinguished lecturers and two moderated panel discussions. Scheduled speakers include: Catherine Lord, director of the Institute for Brain Development at New York-Presbyterian Hospital, the largest autism-specific facility in the New York City area, and author of the Autism Diagnostic Observation Schedule, a “gold standard” instrument used by health professionals for assessing and diagnosing autism; Florence Clark, associate dean of the USC Division of Occupational

Science and Occupational Therapy, and member of the state of California’s newly formed Autism Advisory Task Force that is overseeing the enactment of California’s recent autism insurance reform legislation; Pat Levitt, director of the Zilkha Neurogenetic Institute at the Keck School of Medicine of USC, where neuroscientists are working to understand and ultimately develop cures for a range of neurological and psychiatric disorders including autism; Rodney Peete, former USC and National Football League quarterback who, as the father of a son with autism, has become a widely regarded autism awareness advocate and author; and Susan Knox, author of the Knox Preschool Play Scale, a standardized instrument that evaluates play in children to provide a measure of their functional development.

Two moderated discussion panels will feature USC scholars from the Division of Occupational Science and Occupational Therapy, the Keck School of Medicine of USC, the Viterbi School of Engineering, and the School of Cinematic Arts, including Academy Award-winning documentarian and Distinguished Professor Mark Jonathan Harris and University Professor Marsha Kinder. Harris and Kinder together are producing a transmedia project titled “Interacting with Autism.”

“The mission of the Division of Occupational

Science and Occupational Therapy,” said Associate Dean Florence Clark, “is to improve the health and quality of life for individuals with disabilities, their families and caregivers, and our communities. The Occupational Science Symposium has been facilitating this objective across four decades, and I know the 2012 edition will certainly be one to remember.”

For more information or to RSVP for the event hosted at the Ronald Tutor Campus Center, visit <http://ot.usc.edu/research/symposium>.



CALIFORNIA HEALTH COMMITTEES MEET AT USC—Members of the California Senate and Assembly Health Committees, including state Senator Ed Hernandez (right) and state Assembly Member William W. Monning (left), met at the Health Sciences campus on Feb. 24 to discuss hospital reimbursement and costs. Tom Jackiewicz, senior vice president and CEO for USC Health, gave a welcoming address. The standing-room-only crowd at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC included representatives from hospitals, managed care programs, private insurers, doctors, nurses and patients. “With the upcoming mandate requiring Americans to buy health insurance, we want to understand rising hospital payments and the difference in payments between hospitals, to make sure that consumers are being charged fairly,” said Hernandez.

The Weekly

Next Issue: March 9

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The Weekly Etcetera

Discover magazine has featured research by **Paula Cannon**, associate professor of molecular microbiology and immunology at the Keck School of Medicine, in its “Top 100 Stories of 2011” issue. The research was highlighted as No. two on the list. Cannon’s team successfully transplanted blood stem cells modified to be resistant to HIV into mice, enabling the animals to control HIV infections. This approach has the potential to allow long-term generation of HIV-resistant T cells in a human patient, allowing that patient’s own cells to suppress HIV. The research, published in 2010 in *Nature Biotechnology*, has reverberated throughout the HIV/AIDS research community. Cannon was also selected earlier this year by *Utne Reader* as one of “25 Visionaries Who Are Changing Your World.” Cannon’s research appeared in the November 2011 *Discover* magazine in an article titled “The Cure – The End of AIDS.” The article detailed how her research might be used in the future to help patients live with HIV.

A state task force—which included **Freddie Segal-Gidan**, co-director of the USC/Rancho Los Amigos National Rehabilitation Center of California—recently released a new 10-year plan on addressing the challenges of Alzheimer’s disease. The report estimates that the number of California residents with the disease will double from 588,000 to 1.2 million by 2030, and medical and social support program costs will increase from \$16 billion today to \$31.3 billion by 2030. Included in the recommendations are the promotion and expansion of research on the disease and leveraging Medicare and Medi-Cal more effectively to serve this population. The Alzheimer’s Association, the California Health and Human Services Agency and its Alzheimer’s Disease and Related Disorders Advisory Committee led the task force.

Hossein Jadvar, associate professor of radiology and biomedical engineering, has been elected vice president of the Society of Nuclear Medicine PET Center of Excellence for the 2011-13 term and will subsequently serve as president for the 2013-15 term. He was also recently elected president of the American College of Nuclear Medicine for the 2013-14 term. He is currently vice president of the college.

Kate Lawrenson, a postdoctoral research associate with the Department of Preventive Medicine, has received a \$75,000 grant from the Ovarian Cancer Research Fund (OCRF) to study the stem cell origins of ovarian cancer. The study aims to identify molecular markers that may potentially improve screening for early-stage epithelial ovarian cancers. The OCRF awarded \$5.4 million in grants to 14 scientists in 2012. Lawrenson received the Ann Schreiber Ovarian Cancer Research Training Program of Excellence Grant, which is given to promising postdoctoral and clinical fellows at the beginning of their research careers.

Brian Wu, a Keck School of Medicine M.D./Ph.D. student, recently appeared with his wife, Julie, in a national commercial that aired on Feb. 10 during *Who Do You Think You Are* on NBC. The Valentine’s Day-themed ad for Kay Jewelers features Wu surprising his wife with a dream date at Nobu restaurant in Hollywood. The ad can be seen online at <http://tinyurl.com/7rv7fbq>.

William Corey, USC alumnus and Norris Foundation trustee, 81

William Corey, trustee of and medical advisor to the Eileen and Kenneth Norris Foundation, died Feb. 18 after a brief battle with lung disease. He was 81.

Keck School of Medicine of USC Dean Carmen A. Puliafito lauded Corey’s service, noting that he was “a member of the USC Norris Advisory Board since its inception and was instrumental in making the USC Norris Comprehensive

Cancer Center a leader in innovative cancer research.” He added, “Bill’s expertise, dedication and generosity to USC Norris will be sorely missed.”

A graduate of the Keck School of Medicine, Corey was born in La Jolla, Calif., and grew up with his four sisters in Altadena, Calif. He attended Polytechnic School in Pasadena and later attended the New Mexico Military Institute in Roswell, N.M., for

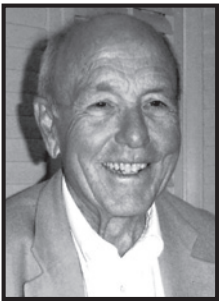
high school, where he learned to fly.

He attended the University of California, Berkeley, as an undergraduate and entered the medical school at USC in 1955. He served as junior class president, graduating in 1959, and was a member of the Nu Sigma Nu medical fraternity.

He received postgraduate training in internal medicine and hepatology until 1963 before beginning private practice in Pasadena caring for his patients for over three decades. He also served as president of the medical staff of Huntington Memorial Hospital in 1982.

Corey was a member of the faculty of the USC medical school as a clinical professor of medicine. He was certified and recertified by the American Board of Internal Medicine and was a fellow of the American College of Professors. Corey was the director of clinical investigation at the Huntington Medical Research Institutes Liver Center.

He was a trustee to the McKenzie Foundation, which provides grants to medical



William Corey

students in California and pre-med students at Occidental and the Pomona Colleges. He was also a board member for the Sheriff Air Rescue 5 Foundation and flew with the Los Angeles County Sheriffs on the Air Rescue Response team and the Disaster Medical Assistance Team 9 as a volunteer doctor for 21 years.

Corey is survived by his wife of 44 years, Janice Corey, four children, six grandchildren, one great-grandson and four sisters.

‘Life After Cancer’ forum highlights USC expertise

More than 80 prostate cancer patients and their families attended an educational “Life after Prostate Cancer” forum on Feb. 16 at USC Norris Cancer Hospital. The program, hosted by the USC Institute of Urology, aimed to inform current and potential patients about what to expect before and after prostate cancer surgery.

The seminar included testimonials from six patients who underwent radical robotic prostatectomy at USC. They said they received exceptional, compassionate care from the team of urologists at USC.

Mark Howard received robotic prostatectomy as an outpatient. “I had my surgery six weeks ago and am now cancer-free. I am very grateful to have come to USC for my surgery. Thanks to my surgeon’s skills and expertise, I have my normal life back,” Howard said.

Following patient testimonials, Daniel Park, director of clinical operations and lead physician assistant, took the podium to talk about the importance of screening and the benefits of robotic surgery, which include excellent precision and visibility, short catheter time and a quick recovery time.

Inderbir S. Gill, professor and chairman of the Catherine and Joseph Aresty Department of Urology and executive director of the USC Institute of Urology, presented updates about the institute’s progress in research and innovations such as catheter-free prostatectomy, targeted prostate biopsies and epigenetics research. The forum concluded with a Q&A session.

Since its inception last year, this forum has educated more than 400 patients, many of whom have turned to the USC Institute of Urology for their prostate cancer care.



Mark Howard, one of Gill’s patients and now cancer-free, shares his experience after receiving robotic prostatectomy.

Carole Onoumi

NANORODS: Treatment effectiveness boosted 50 percent

Continued from Page 1
the cancer is also not eligible to undergo radiation treatment again, Sinha said.

The delivery of microscopic gold nanorods to the tumor is accomplished by direct injection or via a pump developed by Ellis Meng, at the USC Viterbi School of Engineering.

The pump, an inch in diameter for use in mice, will be slightly larger for humans, Sinha said. The pump is made of silicone and can be programmed to deliver the gold nanorods to the tumor once or twice a day.

“This eliminates the need for patients to return to the clinic for injections,” said Sinha. “This is an active remote-controlled pump. There are not many pumps like this on the market today.”

In the mouse experiments, gold nanorods were used to deliver a small interfering RNA (siRNA) molecule to

head and neck tumors. This siRNA molecule blocks the production of a protein known as sphingosine kinase 1 (SphK1). Previous work by the USC team had shown that this protein prevents radiation-damaged cells from undergoing apoptosis, the cell death program triggered in healthy cells when they age or experience major damage.

RNA interference, which uses siRNAs to reduce the production of specific proteins, has shown promise for treating cancer and other diseases, but these molecules are readily degraded in the bloodstream. To overcome this problem, the SUNY-Buffalo team, an early pioneer in the cancer nanotechnology field and an original member of the National Cancer Institute’s Alliance for Nanotechnology in Cancer, has developed biocompatible gold nanorods that can protect siRNAs from degradation and deliver them to tumors.

Working together, the two groups created a gold nanorod-siRNA construct that targets SphK1. When injected directly into head and neck tumors growing in mice prior to radiation therapy, this formulation boosted the efficacy of radiation therapy by over 50 percent.

Moreover, this boost in efficacy was seen using greatly reduced doses of radiation. Animals that were treated with the nanoparticle formulation showed no ill effects from the drug. The investigators are now developing a new formulation that could be used to sensitize tumors for which direct injection of drug is not feasible.

The next step is clinical trials to test the efficacy of injections and the pump in humans, Sinha said.

The research was supported by the National Cancer Institute and the Whittier Foundation.

The Weekly NEWSMAKERS

An op-ed by **Ken Murray**, clinical assistant professor of family medicine at the Keck School, was featured in the Feb. 25 edition of *The Wall Street Journal*. The piece, which focuses on the end-of-life decisions that doctors make for themselves, was cited by The Huffington Post and *Daily Mail* (U.K.).

A Feb. 23 article in *The Australian* featured research by **Celeste Pearce**, assistant professor of preventive medicine at the Keck School, finding that women with a history of endometriosis have a higher risk of developing three types of ovarian cancer. Australian Associated Press, The Press Association, *The Telegraph* (U.K.), CTV (Canada), Sky News (Australia), *Evening Herald* (Ireland), *Irish Independent* (Ireland), *NU* (Netherlands), *Europa Press* (Spain), *El Mundo* (Spain), *Hechos de Hoy* (Spain), *Ella Hoy* (Spain), Iatronet (Greece), MedPage Today, WebMD, HealthDay News, ABC News, KPBS Radio, Medscape and *Daily Mail* (U.K.) also featured the research.

A Feb. 21 report in *The Washington Post* noted that *The End of Illness* by **David Agus**, professor of medicine at the Keck School, was a *Book World* best-seller. The book also was featured in *Fortune*, *Forbes*, KCBS-TV, 109 and *The Globe and Mail* (Canada). Agus,

an oncologist who co-founded molecular diagnostics company Applied Proteomics, was mentioned in stories by *Big Think*, *Xconomy*, *San Diego Business Journal*, Fars News Agency (Iran) and SocalTech.com.

A Feb. 21 story by BBC News quoted **Leslie Saxon**, chief of cardiovascular medicine and professor of clinical medicine at the Keck School, about biosensors being used in elite athletes to help prevent injury and improve performance.

A Feb. 21 report by ABC News quoted **Garry Brody**, professor emeritus of plastic surgery at the Keck School, about realistic expectations regarding plastic surgery.

A Feb. 19 article in the *Los Angeles Times* quoted **Carmen Puliafito**, dean of the Keck School, about the increasing need for primary care physicians given the aging boomer population. Also mentioned in the story were **Paul Gregerson**, medical director of the John Wesley Community Health Institute and voluntary faculty at the Keck School, and Keck medical student **Hannah Segal**.

A Feb. 18 article in the *Richmond Times-Dispatch* quoted **Mark Barr**, associate professor

of cardiothoracic surgery at the Keck School, about long-term use of heart pumps like the LVAD for patients awaiting heart transplants.

A Feb. 10 broadcast of “To The Point” on KCRW-FM featured an interview with **Patrick Whelan**, assistant professor of clinical pediatrics at the Keck School, about the conflict between Catholic bishops and the White House over contraceptive insurance coverage.

A Feb. 9 story in the *Los Angeles Times* quoted **Lon Schneider**, professor of psychiatry, neurology and gerontology at the Keck School, about a study indicating that a skin cancer drug reverses Alzheimer’s disease symptoms in mice. Schneider urged caution until human tests are conducted.

A Feb. 9 story in the *Los Angeles Times* quoted **Michael Cousineau**, associate professor of family medicine and preventive medicine at the Keck School, about research he conducted that indicated that 20 percent of low-income immigrant children enrolled in Healthy Kids, a public health insurance program in Los Angeles County, lost coverage between 2009-2011 due to a premium increase.

Calendar of Events

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

Saturday, Mar. 3

6 p.m. KSOM Medical Faculty Family and Friends and the Salerni Collegium Alumni Assoc. Annual Scholarship Benefit Dinner. “Miracles are Happening Every Day,” honoring Jim and Mindy Halls, Vaughn and Julie Starnes and the 2012 Scholarship Recipients. The Jonathan Club. Cost and information: <http://keck.usc.edu/scholarshipdinner>

Tuesday, Mar. 6

Noon. HSC Trojan Trekkers: Walking Program. Walk a little at lunchtime and meet the HSC Rec Sports staff. Info: (323) 442-7210

Noon. Psychiatry Grand Rounds. “Acute Relief from Depression: Clinical Implications of Ketamine and the Next Generation of Antidepressants,” Michael Choi and Daniel Holschneider, USC. ZNI 112. Info: (323) 442-4065

Wednesday, Mar. 7

3 p.m. Nephrology Lecture. “Showing Nephropathy Progression: New Twists on Old Ideas,” George Bakris, University of Chicago. BCC 101. Info: (323) 226-7307

Thursday, Mar. 8

Noon. Cellular Homeostasis Lecture Series. “Exploring a New Twist on Tumor Metastasis,” Jing Yang, UC San Diego. MCH 156. Info: (323) 442-3109

Friday, Mar. 9

8:30 a.m. Occupational Science Symposium. “Autism in Everyday Life: Interdisciplinary Research Perspectives at USC,” various speakers. UPC: TCC Ballroom A. Students \$25, General \$50. Lunch included with admission. Reception to follow. Info: (323) 442-1861

8:30 a.m. Surgical Grand Rounds, Chief Resident Presentation. “Management of Aortic Aneurysm and Concurrent Intra-abdominal Pathology,” Sukgu Han, USC. DOH 1st Floor Auditorium. Info: (323) 442-2506

11:30 a.m. Preventive Medicine and Institute for Global Health. “Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition,” Robert Proctor, Stanford University. SSB 115/116. Info: (323) 865-0809

Noon. USC Center for Excellence in Teaching. “Game-Based Learning in Higher Education,” Henry Jenkins, USC and Holly Willis, USC. UPC: GSS 106. Lunch will be provided. RSVP Required. Info: (213) 740-3959

Tuesday, Mar. 13

Noon. Psychiatry Grand Rounds. “Clinical and Molecular Targets in Treating Schizophrenia,” Stephen Marder, UCLA. ZNI 112. Info: (323) 442-4065

Wednesday, Mar. 14

Noon. Special ZNI/Bioinformatics Seminar. “The Art and Science of Cancer Classification: The View from 2012,” Jun Li, University of Michigan. ZNI 112. Info: (323) 442-2144

Thursday, Mar. 15

5 p.m. Department of Anesthesiology Journal Club. Ronald Pearl, Stanford University. LAC+USC Medical Center—IPT, Conference Room B. Info: (323) 409-6856

Friday, Mar. 16

6:30 a.m. Anesthesiology Grand Rounds. “Perioperative Management of the Patient with Pulmonary Hypertension,” Ronald Pearl, Stanford University. MCH 256. Info: (323) 409-6856

8:30 a.m. Pulmonary & Critical Care Medicine Research Seminar. “Novel Biomarker Panels Utilizing Molecular Pathways for the Early Detection of Lung Cancer,” William Rom, New York University. IRD 732-734. Info: (323) 226-7923

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 email to eblaauw@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.



OCCUPATIONAL THERAPY HIGHLIGHTS LIFESTYLE REDESIGN— The USC Occupational Therapy Faculty Practice welcomed visitors to its third annual Open House Jan. 12. The faculty discussed the Lifestyle Redesign Program, which helps people make healthful lifestyle changes such as losing weight, quitting smoking and managing chronic conditions like frequent headaches or diabetes. At the event, attendees chatted with the occupational therapists, viewed research and outcome measurements, snacked on healthy appetizers and received free massages. Attendees also learned about the various Lifestyle Redesign programs offered at the OT Faculty Practice—which also include helping college and graduate students thrive in school, and life coaching, through addressing stress management, time management and balance. Left, USC occupational therapist Susan McNulty talks with an open house attendee about the Headache Management program.

LEVITT: Study examines development of social behaviors

Continued from Page 1
Levitt was joined in the study by Philip Gorrindo, first author, an M.D./Ph.D. student in neuroscience at Vanderbilt University Medical Center. The researchers found that parents and physician specialists are equally accurate in identifying gastrointestinal dysfunction (GID) in children with autism spectrum disorder (ASD); the behavior and communication problems in these children are more severe than in children with ASD only; and diet and medication do not appear to play a role in the gastrointestinal condition of ASD-GID children.

The second study, “The Predictive Nature of Individual Differences in Early Associative Learning and Emerging Social Behavior,” published in the January issue of the Public Library of Science’s online publication *PLoS ONE*, is the first study to directly assess predictive relations between early associative learning and how social behaviors emerge at five months, nine months

and one year old. Findings showed that infants who were faster at associative learning at one month old also expressed social behaviors more fully during their first year of development.

According to Levitt, this could help serve as a marker

for early detection in atypical social development, including ASD. The study’s other authors are Bethany C. Reeb-Sutherland and Nathan A. Fox, both of the Department of Human Development, University of Maryland, College Park, Md.

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