USC study shows social networks can influence health behavior

By Alison Trinidad

Most people call it the “art” of persuasion, but USC public health researchers are trying to pinpoint the “science” behind social influence.

They hope a better understanding of human interactions—both face-to-face and online—can help prevent disease and promote general health.

Whether the goal is to curb smoking at a local school or to reduce the spread of sexually transmitted diseases within a community, it is important to understand the social structure of the group and the dynamics of influence at play, says Thomas W. Valente, professor of preventive medicine at the Keck School of Medicine of USC.

“If I want to go into a high school and change physical activity or other obesity behaviors, I have to understand there are cliques and subgroups of students that exhibit different risks,” Valente said. “I would design different interventions for the different groups. We constantly are concerned about how ineffective our interventions are—this is a big reason why those interventions are not working. We can do a much better job promoting healthy behaviors if we understand the social network contexts and design these interventions with those cues in mind.”

Valente, whose research focuses on social networks and influence, has compiled a collection of methods that public health advocates use to stimulate changes in behavior. He explains why certain methods may be more effective than others in particular situations.

This analysis appears in the July 6 edition of the peer-reviewed journal *Science,* the world’s leading outlet for scientific news, commentary and research.

Due to the large number of interventions available to researchers—Valente identifies 24, each with at least several variations—the researcher says a more robust framework is needed for deciding which tactics are best used in particular settings.

Word-of-mouth interventions, for example, depend on the social network to succeed. In some cases, word of mouth is used to spread the word and in other cases to pass along personal endorsements.”

“Existing evidence indicates that network interventions are quite effective,” Valente writes. “Yet, the science of how networks can be used to accelerate behavior change and improve organizational performance is still in its infancy. Research is clearly needed to compare different network interventions to determine which are optimal under what circumstances.”

USC, CHLA establish new pediatric residency program

By Cathy Curtis

Physical Therapy in the Division of Rehabilitative Medicine at Children’s Hospital Los Angeles (CHLA) and the USC Division of Biokinesiology and Physical Therapy and have created a new Pediatric Physical Therapy Residency Program that will combine the academic resources of the No. 1 physical therapy program in the nation with the physical therapy clinical expertise at a leading children’s hospital. The program is set to begin in September.

“This is an important and timely collaboration between the division and CHLA,” said Linda Fetters, professor and holder of the Sykes Family Chair in Pediatric Physical Therapy, Health and Development at USC, who will serve as director of the Pediatric Physical Therapy Residency Program.

By Alison Trinidad

Keck Hospital of USC and USC Norris Cancer Hospital have again been recognized among the top hospitals in the nation by U.S. News & World Report in its annual “Best Hospitals” report. USC-affiliated Children’s Hospital Los Angeles, staffed exclusively by USC faculty physicians, was named last month to the magazine’s Best Children’s Hospitals Honor Roll and was ranked among the top five in the nation.

For the first time, U.S. News provides statewide hospital rankings in addition to rankings in select metropolitan areas. Keck Hospital of USC ranks No. 3 in the Los Angeles metro area and No. 6 in California.

In specialty areas, this year Keck Hospital of USC was ranked in the top 10 nationally for ophthalmology (No. 8, USC Department of Ophthalmology at the Doheny Eye Institute) and among the top 50 for geriatric care (No. 21) and neurology/neurosurgery (No. 29). Keck Hospital also was recognized as high-performing in nine additional specialty areas: cancer; cardiology and heart surgery; ear, nose and throat; gastroenterology; gynecology; nephrology; orthopedics; pulmonology; urology.

USC Norris Cancer Hospital was ranked in the top 50 in cancer care (No. 43) and high-performing in nephrology and urology.

Of the 5,000 hospitals reviewed nationwide, fewer than 150 are nationally ranked in at least one of 16 medical specialties.

“It is an honor to have our programs be recognized for the outstanding patient care and outcomes delivered by our physicians, nurses and staff members,” said Scott Evans, CEO of Keck Hospital of USC and USC Norris Cancer Hospital, both a part of the Keck Medical Center of USC. “We look forward to continuing the tradition of excellence in innovative and compassionate care in other cases to create hope and to expect from our hospitals.”

The hospital rankings are designed to help steer patients to hospitals with strong skills in the procedures and specialized conditions that present the biggest challenges.

“All of these hospitals are the kinds of medical centers that should be on your list when you need the best care,” said U.S. News Health Rankings Editor Avery Comarow. “They are where other hospitals send the toughest cases.”

Both Best Hospitals and Best Children’s Hospitals lists are published by U.S. News in collaboration with RTI International, a research organization based in Research Triangle Park, N.C. The complete rankings and methodology are available at http://health.usnews.com/best-hospitals.

U.S. News ranks USC’s hospitals among nation’s best

Linda Fetters, professor and holder of the Sykes Family Chair in Pediatric Physical Therapy, Health and Development at USC, will serve as director of the Pediatric Physical Therapy Residency Program.
USC to offer nation’s first PharmD/MS Global Medicine dual degree

By Kukla Vera

USC is currently enrolling its first class of students in the Doctor of Pharmacy/MS Global Medicine (PharmD/MSGM) dual degree program, a program that will graduate pharmacy professionals with an advanced understanding of the role of modern medicine and the provision of care in developing countries worldwide.

“The program was developed by leaders at the Keck School of Medicine of USC and the USC School of Pharmacy to respond to the need for pharmacists and global health leaders who will effectively serve diverse populations through pharmaceutical care. The curriculum specifically addresses the urgent need for clinicians who are capable of analyzing and understanding the impact and use of pharmaceuticals in developing countries with populations that are often greatly underserved in health care.

“The USC School of Pharmacy has developed pharmacy education and community intervention programs for underserved and resource-poor areas of our local community, so applying similar innovations in care at the global level seemed like the next logical step,” said Elahe Nezami, director of the Global Medicine master’s degree program at the Keck School of Medicine. “Both of our programs encourage entrepreneurial thinking in developing new approaches to solving difficult health problems, so interdisciplinary collaboration is a great way to capitalize on the talents and ideas of our students and faculty.”

The USC doctor of pharmacy curriculum is a four-year, postgraduate professional program that culminates with a final year of experiential training. The Global Medicine program examines the effects of disease around the world, as well as the development of innovative solutions for addressing addressing health and social issues to prevent global health crises. The program offers students opportunities to travel abroad to see firsthand health challenges and delivery-of-care models in other parts of the world.

“Our pharmacy curriculum provides the expertise required of today’s pharmacist in pharmacotherapy, medication safety, health promotion and disease prevention,” said Ronald Alkana, associate dean of graduate affairs and interdisciplinary graduate programs at the School of Pharmacy. “Complementing it with the global medicine program allows us to produce 21st century pharmacists with a unique global perspective.”

While students must meet admissions standards of both programs individually, once admitted, they enroll in a specialized curriculum that allows them to use core pharmacy course work in place of core global medicine course work. This allows students to complete the dual degree program more efficiently than pursuing the two degrees independently.

PharmD/MSGM students complete the requirements of both programs, acquiring the scientific knowledge and training to be adept pharmacists while simultaneously gaining an understanding of the global burden of disease and the cultural and socioeconomic factors affecting the health of individuals and communities.

More information about the dual degree program is available at: http://tinyurl.com/d8efns.

Keck School researchers identify potential target for improving vaccinations

By Jon Nalick

A naturally occurring protein called TLR1 plays a critical role in protecting the body from illnesses caused by eating undercooked pork or drinking contaminated water, according to new research by researchers at the Keck School of Medicine of USC.

The discovery may help create more effective oral vaccines for infections of the respiratory and gastrointestinal systems. Although many studies already have launched an examination of how TLR1 is linked to inflammatory bowel disease, said R. William DePaolo, assistant professor of molecular microbiology and immunology at the Keck School of Medicine of USC and the study’s lead investigator, “It’s not clear what drives the body’s immune response,” DePaolo said. “This paper identifies a receptor’s role in driving a mucosal immune response against Yersinia enterocolitica, bacteria like Salmonella and E. coli that can cause food poisoning. Although the receptor’s role against other bacteria is still unknown, our research emphasizes that the way the body initiates an immune response depends on the pathogen and the route of infection.”

The study, “A specific role for TLR1 in protective T[17] immunity during mucosal infection,” is scheduled to appear in the July 30 edition of The Journal of Experimental Medicine, a leading biomedical journal published by the Rockefeller University Press. The manuscript is now available on the journal’s website.

DePaolo’s team compared the immune responses of mice both with and without TLR1 when infected with Y. enterocolitica by mouth and by blood. They found that TLR1 played a significant role in controlling mucosal infection (by mouth) but not systemic infection (by blood), initiating the creation of antibodies that specifically fight against oral infections.

“Now that we have identified the receptor’s role, the next step is how to determine how to manipulate that receptor to enhance vaccine development,” DePaolo said. “We also are studying the receptor in different models of mucosal inflammation including inflammatory bowel disease and colitis-associated cancer. The idea is to take a personalized approach to medicine and use genetic profiling to better treat patients.”

The research was supported by the National Institute of Diabetes and Digestive and Kidney Diseases (5K01DK082725-05) and The Cronh’s and Colitis Foundation of America (Senior Research Award 2001).

The Weekly

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PT: Applicants sought for new program

Continued from Page 1
cal communities at USC provides unique opportunities for our residents to become leaders in community-integrated clinical care and to expand the body of clinical and scholarly knowledge in the discipline,” said Fetter, who will serve as director of the program.

Leadership and family-centered care will be fostered through residency participation in CHLA’s California Interdisciplinary Leadership Education in Neuromodulatory and Related Disabilities Training Program, which educates health professionals to shape effective health policies, programs and outcomes for children and youth with neurodevelopmental and related disabilities, including autism spectrum disorder.

Applications are now being accepted for the program. Applicants must have a minimum of one year of clinical experience in pediatric physical therapy, a California State license to practice physical therapy, and a degree from an American Physical Therapy Association accredited physical therapy program.

The Pediatric Physical Therapy Residency Program is the fourth clinical residency program to be established at the division. It follows the orthopaedic, neurologic—a partnership with Rancho Los Amigos National Rehabilitation Centers—and sports residency programs.
A July 23 broadcast on KPQED News interviewed Paula Cannon, associate professor of molecular microbiology, immunology, biochemistry, and pediatrics at the Keck School of Medicine of USC, about her research into finding a cure for HIV/AIDS. The story was cited by the CRM Stem Cell Research blog. She was also interviewed by the Los Angeles Times on July 24.

A July 24 article in Parade Magazine features tips from Bradley Hudson, assistant professor of clinical pediatrics at the Keck School, on how to talk to children about the mass shooting in Aurora, Colorado.

A July 25 article in the Los Angeles Times cites a letter to the editor written by Jeff Victoroff, associate professor of clinical pediatrics.

A July 20 article in the San Francisco Business Times mentions Leslie Saxon, professor of clinical medicine at the Keck School, and her work with wireless health monitors.

A July 20 post on KQED’s website features a photo of Gabriel Zada, assistant professor of neurological surgery.

A July 18 report by Asian News International featured a study by Berislav Zlokovic, director of the Zilkha Neurogenetic Institute at the Keck School, and colleagues, finding that an experimental drug reduces brain damage and improves motor skills among stroke-affected rodents when given with the standard treatment for stroke, tPA (tissue plasminogen activator). The research was published by ScienceDaily, Medical Xpress, Medical News Today, Science Blog, News-Medical.net, Neuroscience News, and FutureTrends.

A July 18 broadcast on Minnesota Public Radio covered “The End of Illness” by David Agus, professor of medicine at the Keck School.

A July 18 story in the Jewish Journal quoted Richard Boles, clinical associate professor of pediatrics at the Keck School, about the chronic illness called Cyclic Vomiting Syndrome.

A July 17 report by Chino Daily (China) quoted Jonathan Samet, who serves as the Flora L. Thornton Chair of the Department of Preventive Medicine at the Keck School, about Chinese medical workers misunderstanding the dangers of low-tar cigarettes.

A July 16 article in Bloomberg BusinessWeek reported that Life Technologies Corp. has purchased Navigenics Inc., a company co-founded by David Agus, professor of medicine at the Keck School. Navigenics’ genetics labs and data systems will help Life Technologies develop tests that can guide doctors in prescribing cancer drugs, the story reported. Agus said that Navigenics was established in 2006 to help patients and doctors understand how genetics impact health. Economy also covered the news.

**USC research sheds light on vascular damage associated with Alzheimer’s disease**

By Leslie Ridgeway

A gene variant responsible for vascular damage to the brain is a promising new target for drug therapy to fight Alzheimer’s disease and other neurodegenerative diseases, according to research published recently by Berislav Zlokovic, director of the Zilkha Neurogenetic Institute at the Keck School of Medicine of USC.

Zlokovic is the corresponding author on a study indicating that the gene variant apolipoprotein E4 (ApoE4), a major genetic risk factor for Alzheimer’s disease, causes inflammation of blood vessels in the brains of genetically engineered mice. The gene variant allows entry of dangerous proteins that can damage the central nervous system.

The research may be helpful not only for Alzheimer’s patients but also for individuals with other neurological disorders associated with ApoE4, such as stroke and Down syndrome.

“Understanding the role of ApoE4 in Alzheimer’s disease may be one of the most important avenues to a new therapy,” said Zlokovic, who is also professor and chair of the Department of Physiology and Biophysics at the Keck School. “Our study shows that ApoE4 triggers a cascade of events that damages the brain’s vascular system.”

The research shows that “Apolipoprotein E controls cerebrovascular integrity via cyclophilin A” was published May 16 in the journal Nature. Zlokovic conducted the research with first author Robert D. Bell, Ethan Winkler and other investigators from the University of Rochester.

The research is supported by the National Institute of Neurological Disorders and Stroke (grant number R37NS4467) and the National Institute on Aging (grant numbers R37AG228984, RO1AG039452, and R37AG139866), both part of the National Institutes of Health.

Previous research has shown that a buildup of the toxic protein fragment beta amyloid constricts blood vessels in the brains of Alzheimer’s patients. Zlokovic’s team found that ApoE4 damages vessels independently of beta amyloid, leading to a breakdown of the blood-brain barrier that limits the flow of oxygen and nutrients into the brain and allowing accumulation in the brain of multiple neurotoxic products derived from the blood that are normally denied entry.

“Rather than trying to destroy amyloid plaques, this research indicates that therapies targeting the ApoE4 beta amyloid independent pathway may alleviate the development of neurodegenerative changes in the brain,” Zlokovic said.

**USC students receive grant for game to help autistic children**

By Cathy Curtis

Four USC graduate students collaborating on an interactive virtual game that will encourage children with autism spectrum disorder (ASD) to jump in order to develop bodily stability and coordination have received a USC Diploma in Innovation grant.

The grant is awarded to Ph.D. students who have demonstrated outstanding ability to collaborate in pursuit of innovative solutions that will have a lasting influence.

Hyeshin Park and Na-hyon Ko, Ph.D. students in the Division of Biokinesiology & Physical Therapy, and Alexander Reyes and Brendan Holt, students in the Ph.D. program in Biomedical Engineering, have been awarded $5,000 by the Office of the USC Provost to design a game that will detect the frequency and quality of a child’s jumping by means of an accelerometer attached to the child’s shoe. Data from the accelerometer will be communicated to a video game receiver using Bluetooth technology.

The student team hypothesizes that this system may promote gross motor skills in children with ASD, who tend to engage deeply with interactive devices.

During the yearlong project, the team will be mentored by Francisco Valero-Cuevas, a professor of biomechanics and engineering, with a joint appointment in the Division of Biokinesiology and Physical Therapy.

“Team members will participate in a series of six required seminars that will provide both practical skills and creative perspectives. Topics include creative thinking, methods of collaboration, social entrepreneurship, development of a business plan, and intellectual property law. The interactive virtual game is one of 15 projects funded by the Diploma in Innovation this year, enabling 27 Ph.D. students to develop their projects in partnership with USC faculty mentors, master’s degree students, undergraduate students, postdoctoral scholars, and faculty from other universities.

During the concluding symposium in April 2013, each team will present their project outcomes to a faculty committee, which will determine if the work qualifies for a Diploma in Innovation.

**Weekly NEWSMAKERS**

**LA Prostate Cancer 5K**

**USC Norris Cancer Hospital**

On Sunday, Sept. 16, the USC Institute of Urology and USC Norris Cancer Hospital will host the 3rd annual LA Prostate Cancer 5k at USC University Park Campus. With a growing need to promote research for furthering the diagnosis and treatment of prostate cancer, all proceeds and donations from the event will be dedicated to prostate cancer research and education at USC. The 5k is open to all levels of runners, joggers and walkers. The race starts at 8:30 a.m. For more information and to register, please visit uscnorris.org/prostate-5k.
Patient’s artwork debuts at special Keck Hospital of USC exhibit

By Tania Chatila

The Lucky Shots art exhibit at Keck Hospital of USC features original photographic artwork by Tammy Lumpkins, the first patient to leave the hospital on the West Coast after receiving a total artificial heart at Keck Medical Center of USC.

Lumpkins’ work is on display now in the Salerni Conference Room, on the 5th floor of Keck Hospital.

“It gives me something to do besides sitting in my hospital room, watching TV,” she said. “I really enjoy it.”

To view more of Lumpkins’ work, visit http://tinyurl.com/c96b5yl.

For more information, contact Patient Experience at (323) 442-9516.

Stringfellow named medical center’s director of planning

By Tania Chatila

Andrew Stringfellow has joined the Keck Medical Center of USC as the new director of planning.

Stringfellow is responsible for providing strategic intelligence and decision support for infrastructure planning and program development across the medical enterprise. He reports to Shawn Sheffield, chief strategy and business intelligence and decision support.

He will lead analytic evaluations for clinical program growth to ensure alignment with the organization’s overall goals. He will also oversee expansion of business intelligence tools to thoroughly assess and manage clinical expansion efforts, while also tracking current health care trends among providers, academic medical centers and other competitors in the region.

Stringfellow will play an integral part in developing and executing the medical center’s clinical strategic plan.

In case of an emergency...

Call the Emergency Information Phone: (213) 740-9233. The emergency telephone system can handle 1,400 simultaneous calls. It also has a backup system on the East Coast.

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.