Building a ‘bionic suit’ to restore walking

By Erica Rheinschild

People with paralysis due to spinal cord injury may eventually get a chance to suit up, walk out the door and feel the ground beneath their feet, thanks to a five-year, $8 million, Cyber-Physical Systems Frontier grant from the National Science Foundation. Awarded to three Southern California institutions — the Keck School of Medicine of USC, the University of California, Irvine (UCI) and Caltech — the grant will fund the development of a fully implantable brain-machine interface device that aims to restore the ability to walk and restore lower extremity sensation. The brain-machine device will transmit commands to a robotic exoskeleton for walking that will, in turn, transmit sensory information back to the brain.

“The restoration of walking is a very significant goal for patients after spinal cord injury,” said Charles Liu, MD, PhD, professor of clinical neurological surgery and neurology and principal investigator at the Keck School, and director of the USC Neurorestoration Center. “New solutions are possible with the recent advances in neuroprosthetics and regenerative medicine. We’re at the point where we can create solutions similar in concept to Tony Stark’s Iron Man suit, which is neurally integrated with him. Tony Stark’s brain interacts with the suit, and the suit interacts with his brain. Everything the suit feels, his brain feels. That’s the idea.”

The project will draw on the combined expertise of all the collaborating investigators. The first phase of the project will be to decode the signals generated by the brain-machine device and translate them into suit movements.

“The restoration of walking is a very significant goal for patients after spinal cord injury.”

— Charles Liu, MD, PhD

USC Roski Eye Institute fetes new space for patient care

By Leigh Bailey

University and hospital leaders gathered during a lively ceremony recently to celebrate the opening of the remodeled clinic space for the USC Gayle and Edward Roski Eye Institute. Keck School of Medicine of USC Dean Rohit Varma, MD, MPH, was joined by USC President C. L. Max Nikias, PhD, USC Trustee Edward Roski and Gayle Roski during the Sept. 7 celebration on the fourth floor of Healthcare Center 4.

Varma, who also serves as director of the USC Roski Eye Institute, presented opening remarks.

“This is a very special day for us because we are unveiling our newly remodeled eye clinic, and for this, we are deeply grateful to Gayle and Ed Roski, whose gift has allowed us to be in this new space,” Varma said.

Nikias added, “Together, we have celebrated many successes at the USC Roski Eye Institute, but today stands out as particularly special. This beautifully remodeled clinic is all about vision — saving it, preserving it and restoring it. You, the doctors and the staff who bring this clinic to life, stand at the forefront of these important efforts and are the finest in the nation.

“Dean Varma and Dr. Mark Humayun, the clinic’s co-directors, have assembled a team of doctors and staff who are expert at lifting the clouds from our vision,” Nikias continued.

Nikias then expressed his profound gratitude to the Roskis for their vision and generosity.

Gayle Roski, a noted artist in addition to her work as a philanthropist, was treated for cataracts by Keck Medicine of USC ophthalmologists, and as a result, “she and Ed...”

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Pasadena Magazine honors top doctors in annual ranking

Keck Medicine of USC nephrologists continue to be recognized among the best in the region in an annual ranking of doctors in the San Gabriel Valley.

In all, 364 physicians have been included in Pasadena Magazine’s 2017 roster of “Top Doctors,” representing 36 different specialties, including oncology, radiology, neurology, orthopaedic surgery, ophthalmology and cardiology.

“This recognition is a valuable acknowledgement of our efforts to provide exceptional patient care with world-class physicians,” said Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine. “We are proud of our physicians and very happy that their accomplishments are being recognized in our community.”

The list includes faculty physicians from the Keck School of Medicine of USC, 45 of whom practice at Children’s Hospital Los Angeles or at Children’s Hospital in Gabriel Valley.

“This recognition is a valuable acknowledgement of our efforts to provide exceptional patient care with world-class physicians.”

— Tom Jackiewicz, MPH

Employees serve community members at Dolores Mission

By Virginia Baca

Faculty and staff from across Keck Medicine of USC are coming together to provide healthy meals to our local community.

Each month more than 20 staff members, physicians and faculty from the Keck School of Medicine of USC and Keck Medicine spend an afternoon working together to purchase, prepare and serve dinner to more than 60 beneficiaries of Proyecto Pastoral at Dolores Mission.

Proyecto Pastoral is a local nonprofit organization associated with the Dolores Mission, which offers an elderly women’s shelter and adult men’s shelter.

“Preparing the meals is not only a great opportunity to give back to the community, it is a chance to roll up your sleeves and work side by side with colleagues from across our medical enterprise,” explained Paul Craig, chief administrative officer for Keck Medicine.

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Program offers therapy for older adults, families

By Adriana Cho

Older patients with a mental health diagnosis may feel helpless if traditional weekly therapy no longer meets their needs. For these patients and their families, a holistic therapy program at USC Verdugo Hills Hospital offers a solution.

Stepping Stones is a geropsychiatric program at USC-VHH that is designed to help relieve emotional and personal distress for individuals age 50 or older.

“Caring for our patients’ mental health is a priority,” stated Keith Hobbs, MBA, CEO of USC-VHH.

Stepping Stones program is an important part of our push to provide holistic medical care for the many communities that surround our medical center, and we will continue to expand the scope of the programs’ offerings to reflect the needs of the area.”

Through inpatient and outpatient programs, the experts at USC-VHH employ a variety of therapeutic options, including medical management, cognitive behavioral therapy, occupational therapy, art, music and movement therapy to help patients.

The inpatient unit can accommodate 24 patients, while the outpatient program currently serves 40 patients, with capacity for 75. Outpatients generally attend three or more therapy hours a day for two to four days a week, depending on the need of the patient, for a duration of two to six months.

Stepping Stones provides one-on-one and small group therapy to help patients who are uncomfortable in larger group settings. With techniques like recreational therapy, which involves going for walks and getting outside, patients also slowly learn to socialize again and interact with others.

Socialization is a huge part of the process in getting patients back into having normal relationships with other people,” said Luke Jackson, MBA, JD, program director of Stepping Stones.

“The program continues to strive to improve treatment methods and patient care. The nursing staff uses communication techniques developed specifically for patients with mental health diagnoses or cognitive impairment. The existing forms of therapy, such as music, help patients go beyond passivity to being more interactive.

Stepping Stones also works to help patients with dementia retain their memories through creative therapy methods and allow them maintain as much independence as possible. For example, memories often can be accessed through smell, music or movement.

“There’s something magical about the whole thing,” Jackson said. “It’s so rewarding to see people get better.”

Psychologist speaks on creating bisexual-positive clinical practice

By Amanda Basick

Noted psychologist, educator and advocate Mimi Hoang, PhD, spoke on the importance of creating a positive, accepting environment for bisexual patients in clinical practice and everyday life before a capacity crowd recently on the Health Sciences Campus.

Using historical information, statistics, research and her own experience as a bisexual clinician and LGBTQ community leader, Hoang, a professor of clinical psychology at Antioch University Los Angeles and staff psychologist at Loyola Marymount University, led the audience through the obstacles that bisexual people face.

The Sept. 15 event was the latest installment in the Diversity Seminar Series, presented by the Keck School of Medicine of USC’s Office of Diversity and Inclusion.

Hoang listed common misconceptions, including that bisexuality equals polyamory or promiscuity; that bisexuality means that you don’t have internal capability to use either hand; and that everyone who walks through your door is straight.

Hoang also shared some serious health care issues that the bisexual community may encounter such as anxiety, mood and mood disorders, and higher incidences of binge drinking and smoking. According to many studies, she said, bisexual women in particular tend to experience higher rates of depression, eating disorders and suicidal ideation than straight or gay women or men.

In fact, the most basic health care communication can be challenging: More than a third of bisexual people do not disclose their orientation to their physician, out of fear of facing bias, erasure and discrimination.

Clinicians, she said, must be aware of how their practice can be influenced by their personal experience. “If you need to have awareness about your own identity, and your own assumptions and biases, that is your assumption that everyone who walks through your door is straight? Or do you assume that they will tell you?” she asked.

“Because if you ask them, you’re letting them know that you and that they are comfortable talking about their identity, and that you care that and you are comfortable talking about that,” she said.

Hoang concluded her lecture with comments on how to be inclusive and not marginalize bisexual patients.

“Your job is beyond just knowing who you are,” she said. “Your job is also about compassion, humanity and understanding diverse issues and communities.”

Calendar of Events

Monday, Sept. 25

9 a.m.-5 p.m. USC-CTSI Workforce Development.


Wednesday, Sept. 27

11 a.m. USC/Amgen Seminar. “Nav1.7 Drug Development for Pain,” Bryan Moyer, PhD, University of California, Los Angeles.

1 p.m. Center for Work and Family Life Workshop. “How to Manage Burnout and Compassion Fatigue in Ourselves and Staff.” Keck Hospital Silver Room 34. Info: Center for Work and Family Life, (213) 821-0800.

4:30 p.m. USC/Amgen Seminar. “The Central Role of the Liver in Metabolic Disease” Stefanie Haustein, PhD, University of California, San Francisco.

8 p.m. USC/Amgen Seminar. “What Changed the Way I Practice Medicine,” Alasdair Barr, MD, LGBQ Research Foundation.

Friday, Sept. 29


5 p.m. USC/Amgen Seminar. “The Role of the Liver in Systemic Inflammation” Amanda Gamble, MD, University of California, Los Angeles.

10 a.m.-noon. USC Research Center for Liver Diseases Conference. “The Role of the Liver in Metabolic Disease” Stefanie Haustein, PhD, University of California, San Francisco.

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Wednesday, Oct. 4

noon. LYSANDRO VALENZUELA. “What Changed the Way I Practice Medicine,” Aresty Room, 112. Info and RSVP: Mary Aalto, mary.aalto@med.usc.edu. Seating is limited. RSVP does not guarantee seating for late arrivals.


Monday, Oct. 9


Baxter Foundation backs two early research projects

By Adriana Cho and Zara Abrams

Two junior faculty members at the Keck School of Medicine of USC and Keck Medicine of USC gathered recently to welcome John Oghalai, MD, as the new chair of the USC Tina and Rick Caruso Department of Otolaryngology — Head and Neck Surgery. Oghalai has been serving as chair since Aug. 1.

The reception, which was held Sept. 8 on the Health Sciences Campus, included remarks from Oghalai, Rohit Varma, MD, MPH, dean of the Keck School, and Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine of USC.

The Meira and Shaul G. Massry Foundation, which promotes education and research in nephrology, physiology and related fields, has created the Massry Prize. At the same time, officials announced recently that the 2017 Meira and Shaul G. Massry Prize recipients have been announced.

The Meira and Shaul G. Massry Foundation, which promotes education and research in nephrology, physiology and related fields, established the Massry Prize in 1996 to recognize outstanding contributions to the biomedical sciences and the advancement of health.

Twelve Massry Prize recipients have gone on to win Nobel Prizes.

Three pioneers in the study of microbiomes will share the 2017 Meira and Shaul G. Massry Prize and deliver a lecture on the Health Sciences Campus in October, officials announced recently. The three scientists were chosen in recognition of their collective efforts in expanding the medical and scientific communities’ understanding of the importance of microbiomes — distinct constellations of bacteria, viruses and other microorganisms that live within and around us — and methods for manipulating microbiomes for the benefit of human and environmental health.

Rob Knight, PhD, of the University of California, San Diego; Carolina Davigi Gordon, MD, of Washington University School of Medicine in St. Louis; and Norman Pace, PhD, of the University of Colorado, Boulder, will share the Massry Prize, which is named in honor of Shaul G. Massry, MD, professor emeritus of medicine, physiology and biophysics at the Keck School of Medicine of USC.

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Massry Prize honors microbiome pioneers

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Anesthesiology department kicks off partnership in Russia

By Adriana Cho

Holly Muir, MD, chair and professor of anesthesiology at the Keck School of Medicine of USC, has been named co-chair of the Vladimir Zelman Department of Anesthesiology of the Novosibirsk State University (NSU) Institute of Medicine and Psychology in Russia, as a part of a collaborative project between the Keck School and NSU.

“The ZELMAN project strives to create bridges for humanity and health care across borders, according to project leaders.”

To that end, the program will feature distance education opportunities, including lectures over Skype, an exchange of students and teachers, and remote working meetings with the heads of the two departments.

Andrey Pokrovsky, MD, PhD, dean of the NSU medical institute, and Sergey Astrovik, MD, PhD, chair of the Department of Anesthesiology at NSU, visited the Keck School this summer and met with leading educators to work on the comprehensive program.

“This is the first time the Department of Anesthesiology and Resuscitation has been established in Russia,” Pokrovsky noted. “In this project, the emphasis is on the educational process.”

The project was spearheaded by Vladimir Zelman, MD, PhD, clinical professor of anesthesiology (part-time) at the Keck School and honorary professor of the NSU Department of Anesthesiology.

As a former student of NSU, Zelman wanted to give back to his alma mater, where he began his medical journey to become one of Siberia’s first anesthesiologists.

“NSU is already well-known as a leader of international cooperation,” Zelman said. “Now the Keck School of Medicine will be on stage as a frontrunner in international medical education and life sciences.”

Behind the scenes of surgical skills lab

By Lex Davis

The Surgical Skills Simulation and Education Center is a cornerstone of the training program for the Keck School of Medicine of USC Department of Surgery.

Students hone their technique on everything from suturing to open-heart surgery. Simulated patients, often played by Lab Manager Mike Minneti has kept the Center at the top of the field in part by building new simulation devices from scratch. He recently spoke with HSC News about his work and experience.

What first brought you to the surgical skills lab?

I spent 15 years in pediatric critical care and extra-corporal membrane oxygenation (ECMO) at the University of Minnesota. ECMO is a procedure that uses a machine to pump and oxygenate blood outside the body. I saw a presentation on ECMO simulation and its world-changing impact. Within a week, I developed a pediatric critical care and ECMO simulation lab in a storage room.

But, it was cold in Minnesota… I told Dr. (Craig) Bailey about a visit to Los Angeles and was taken immediately by his passion for simulation. He walked me over to the Surgical Skills Simulation and Education Center to meet Dr. (Maura) Sullivan and Angela Martinez. I knew I could fit in and add value to the lab.

I converted another storage room into an ECMO and critical care simulation lab. When Dr. Baker saw the ECMO simulator, he said, “We should put a heart in there.” So we did.

Why did you start rigging up your own equipment?

I began building when I needed something that didn’t exist. I saw a real need to create bridges for humanity and health care. I have made a mental representation of what is needed, I can usually come up with the solution.

What do you do when you’re not in the lab?

I began my first classes at the USC Rossier School of Education toward a master of education degree this fall, on my way to a doctorate of education if all goes well. After work and studying, I have just enough time to spend late evenings with my wife Lara and the best dog in the world, Zoe.