Ostrow faculty, students offer urgent care

By Stephanie Corral

For nearly a week, Julia Fregoso experienced tooth pain so severe that she was unable to sleep, let alone eat or drink. The pain, resulting from a molar she broke last December, landed Fregoso in the Herman Ostrow School of Dentistry of USC Urgent Care and Dental Trauma Center at the recommendation of her mother.

“The night after my extraction was the first night in almost a week that I actually slept throughout the night,” Fregoso said. “Less than 24 hours later, I was able to eat and speak with no pain and little to no swelling. I’m feeling so much better!”

Fregoso is a textbook example of the kind of patients that walk into Ostrow’s urgent care clinic, which is dedicated to the prevention, diagnosis and treatment of dental emergencies. Under the supervision of faculty dentists, Ostrow dental students provide treatment at the clinic during a required two-week rotation that is divided between their third and fourth year of dental school. “We mostly get patients who have not had regular dental treatment, so the problem gets compounded over time, and the pain becomes unbearable,” said Eleka Salamipour, a third-year student who recently finished her first one-week rotation.

On any given day, students can treat anywhere from 20 to 45 patients with a wide range of dental needs, such as root canals, extractions, cavities and cracked teeth. “It’s nonstop,” Salamipour said. “You don’t know who’s going to come through the door or what the patient is going to need. The rotation does so much for developing and refining a dental student’s approach to diagnosis and patient care.”

Every week, approximately 10 students rotate through the clinic, where they assess and diagnose patients on their own before presenting their approach to supervising faculty who are there to intervene or make recommendations, only if necessary.

“The clinic’s unique rotation format can largely be credited to its director, Ramon Roges, DDS, who also is an associate professor of dental dentistry at Ostrow.”

Roges believes the rotation teaches students invaluable skills such as time management because they see multiple patients and treat multiple conditions.

“They also get emergency dental treatment experience, which sooner or later they are going to be part of their private practice,” Roges said. When students return to the clinic for their fourth-year rotation, they sometimes see a huge difference in their abilities.

“They have more self-confidence, they work faster and they know how to treat the patient,” Roges said. “They also know how to communicate better.”
Professor named fellow of esteemed scientific society

By Zen Vuong

A Keck School of Medicine of USC physiologist has been elected a fellow of the American Association for the Advancement of Science, an honor awarded to 200 AAS members by their peers. David Warburton, OBE, DSc, MD, MMIV, professor of pediatrics, is joined by five fellow USC scientists in this year’s class.

Founded in 1848, the nonprofit organization is the world’s largest general scientific society. The group began the AAAS Fellows tradition in 1874 and publishes the journal Science.

This year 396 members will be named fellows because of their scientifically or socially distinguished efforts to advance science or its applications. The USC fellows are:

Warburton, for contributions to the field of pediatric medicine, particularly for work on lung development as it relates to maternal and infant health. Warburton is a world leader in global child health and regenerative medicine.

A physical therapist who leads the Developmental Biology, Regenerative Medicine and Stem Cell Program at the Saban Research Institute, Children’s Hospital Los Angeles. Warburton is a member of the USC Stem Cell Executive Committee.

Xiaojie Chen, PhD, a professor of biological sciences and chemistry at the USC Dornsife College of Letters, Arts and Sciences, for contributions to the field of structural medicinal biology, particularly for understanding vital and cellular DNA replication and genomic mutations. Chen’s lab answers important questions in cancer biology and immunology.

Karle Christe, PhD, a professor of chemistry at USC Dornsife, for contributions to the field of synthetic inorganic chemistry, particularly in high-energy-density materials. His research goal is to advance the state of the art. His lab strives for spectacular breakthroughs rather than settle for incremental improvements.

Petos Ioannou, the A.V. “Bal” Balakrishnan Professor of Electrical Engineering at the USC Viterbi School of Engineering, for his contributions to the field of artificial intelligence, particularly planning, decision-making and coordination for robots and other situated agents. Konig is interested in intelligent systems such as multi-agent and multi-robot systems that operate in large, non-deterministic, non-stationary or only partially known domains.

Paul Rosenblum, PhD, a professor of computer science at USC Viterbi, for “seminal contributions to cognitive architectures and multi-agent artificial intelligence capability.”

Citations:

Koepfli published his work in Scientific Reports in 2016, and has recently written a chapter in the textbook titled Methods in Molecular Biology: Skeletal Muscle Development, pending review.

Born and raised in Seoul, South Korea, Su always had a curiosity for the sciences. “I like how everything works,” he said. “Science just explains everything.”

At age 10, he moved to Irvine with his mother and sister, and began learning English.

To remind him of his family, Su fans his grandfather’s watch every day. Su said his grandfather embodied perseverance and dedication by serving as a general in the Korean military. Now, at the age of 92, he has severe dementia and Parkinson’s disease.

To study similar debilitating neurological diseases, Su currently is collaborating with the lab of Justin Ichida, PhD, assistant professor of stem cell biology and regenerative medicine at the Keck School to study ALS, as well as the lab of Carrie Milich, PhD, at the David Geffen School of Medicine to study Duchenne Muscular Dystrophy.

After graduation, Su aspires to work in the field of robotics and artificial intelligence while keeping an open mind to other scientific career paths.

To view the certificate and a gold and blue rosette pin representing science and engineering for Creative Technologies. His focus is on the mechanisms that enable thought and how they combine to yield moods.

The new fellows will be presented with a certificate and a gold and blue rosette pin representing science and engineering on Feb. 17 at the 2018 AAAS Annual Meeting in Austin, Texas.
John Oghalai discusses experience, goals for otolaryngology department

John S. Oghalai, MD, joined the Keck School of Medicine of USC on Aug. 1 from Stanford University School of Medicine. He specializes in caring for patients with diseases of the head and neck and skull base. He recently spoke with USC News about his background and what his plans are for the department.

Why did you choose otolaryngology?
I love the idea of surgical and medical care found in otolaryngology and head and neck surgery. The anatomy of the head and neck is incredibly complex, and this makes the surgery quite delicate and beautiful. Most impressively, much of what we take in around us through our senses comes through the head and neck region; it is literally how we experience and survive in the world. Diseases of the head and neck greatly affect our ability to experience life. So, the care that an otolaryngologist provides is often quite meaningful to our patients. We form a special bond with our patients and I enjoy this aspect of the specialty.

What is something you think people should know about otolaryngology that might be a surprise to learn?
Unfortunately, there are many diseases in our specialty that we understand and manage, but cannot cure with present-day medicine. Hearing loss is probably the most common one. One might think that hearing aids can compensate for hearing loss, but in fact, they make sounds louder but they don't make words clearer and easier to understand. This is the issue that I believe research will be able to overcome in the near future.

Why did you choose the Keck School?
This school is on the verge of a major change and development, and that was very meaningful to our patients. We form a special bond with our patients and I enjoy this aspect of the specialty.

What are your plans for the department?
The USC Tina and Rick Caruso Department of Otolaryngology – Head and Neck Surgery is strong, but we can improve further. A key goal is to expand basic and translational research in all subspecialty areas. Clinical services also will grow to accommodate the increasing need for subspecialty otolaryngology care in Los Angeles. We will enhance our strong educational programs for otolaryngology residents and for medical students.

Scientist is writing a recipe for a kidney

By Cristy Lytal

JSC Stem Cell scientist Chongwei Li, PhD, could have gone into the family restaurant business. Instead, he’s dedicated his career to experimenting with a very different set of ingredients: kidney stem cells.

“One kidney is a very important organ, and it is in high demand,” said Li, assistant professor of medicine and stem cell biology and regenerative medicine at the Keck School of Medicine of USC. “More than 10 percent of people develop chronic kidney disease, and 80 percent of people who need organ transplants actually need kidneys.”

The first scientist in his family, Li grew up in Chongqing, China, the birthplace of hot pot. His father was a famous Szechuan-style chef, while his mother helped run the family restaurant. But Li’s tastes always ran toward Chinese medicine and stem cell biology.

“Kidney transplants are very limited and many patients die while they’re still waiting for organs,” Li said. “So there’s an urgent need for us to find alternative ways to replace the kidneys.”

Li envisions that building a kidney will require the collective efforts of researchers from different research fields and he believes that USC provides the ideal environment for reaching across disciplines. As a new faculty member, he looks forward to collaborating with colleagues from the Keck School and the USC Viterbi School of Engineering.

“My hope is that I walk away from the Keck School, Li will use stem cell and bioengineering technologies to build mini-kidneys, called organoids, in the laboratory. The near-term goal is to use these organoids to test potential drugs to treat kidney disease. The long-term goal is to further develop the organoids into functional kidneys for transplantation into patients.”

APPRENTICE: Participants attend lectures, observe surgical procedures

Continued from page 1

times a year, to provide the best possible experience in a short amount of time. Apprentices who pay to participate in the program, can opt for an additional week of observation at no extra charge.

During the week they spend on the Health Sciences Campus, the apprentices attend several lectures given by Keck School faculty. They observe up to 30 live robotic, laparoscopic and open surgeries, as well as surgery on simulators under faculty member supervision. At the end of a week of intensive training, they are sent home with a series of videos, which they can share with their colleagues at home.

Colin Teo, MD, another recent graduate from Singapore, said the program, which teaches doctors how to improve upon existing procedures as well as train them in leading-edge techniques, helps to improve urology care around the world. “I think USC is helping to bring up the standard of urology in the world,” Teo said.

LEADERSHIP: Students, residents will be eligible for further awards

Continued from page 1

At the end of the year, the projects from the 30 participants will be evaluated and an annual poster competition will be given to the top two medical students and the top two medical students in each of three research tracks. The winners then will present their projects at the next national conference. The Best Project Award will be given to the winner who demonstrates the most impressive, innovative, meaningful and entertaining project.
HSC Newsmakers

A roundup of news items related to Keck Medicine of USC, which may include philanthropic donations, research grants, publication in academic journals and mentions in the news media.

Students can apply for a master’s degree in biopharmaceutical marketing, a new program offered by the USC School of Pharmacy.

USC School of Pharmacy opens new master’s degree

The USC School of Pharmacy now offers a Master of Science in Biopharmaceutical Marketing. The first-of-its-kind program builds core knowledge and strategic skills for success in the biopharmaceutical industry, emerging devices and diagnostics, managed care and other health-related ventures. The interdisciplinary degree provides advantages to students looking to begin a career in the health care industry, as well as for busy professionals seeking a career advance. “This new master’s degree exemplifies the School of Pharmacy’s dedication to widening the scope of professional opportunities for our students, while keeping ahead of evolving trends in the health care industry,” Dean Vassilios Papadopoulos, DPharm, PhD, said. “It provides foundational knowledge and experience from which students can build success in the sector.” — Michele Keller

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One-size treatment for blood cancer probably doesn’t fit all, researchers say

By Zen Vuong

Though African-American men are three times more likely to be diagnosed with a blood cancer called multiple myeloma, most scientific research on the disease has been based on people of European descent, according to a study led by researchers at the Keck School of Medicine of USC.

That trend is problematic considering that African-Americans — the most at-risk population for multiple myeloma — have different genetics that can affect how this type of cancer progresses and what kind of targeted therapies are most effective, said Zurko Manojlovic, PhD, assistant professor of research translational genomics at the Keck School and lead author of the study. For example, in the study, multiple myeloma patients of European descent were six times more likely than their African peers to have mutations in the TP53 gene, a tumor suppressor that helps prevent cancer. African-Americans, on the other hand, experienced heightened mutations in BCL7A, a different tumor suppressor gene.

“A cancer therapy that targets TP53 would not be as effective for African-Americans with multiple myeloma as it would be for a white population because doctors would be trying to fix the wrong mutated gene,” said Manojlovic, who also is director of Keck Genomics Platform at the Keck School.

The study was published on Nov. 22 in PLOS Genetics. Researchers analyzed the analytic ancestry for all patients and found that 127 patients were of African descent and 591 were of European descent.

“There are clearly molecular differences between African-American and Caucasian multiple myeloma cases, and it will be critical to pursue these observations to better improve clinical management of the disease for all patients,” said John D. Carpten, PhD, professor and chair of translational genomics at the Keck School and senior author of the study.

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RAISING TROJAN SPIRIT AHEAD OF RIVALRY GAME: The Spirit of Troy paid a visit to the Health Sciences Campus recently for a Beat the Bruins rally. The USC Trojan Marching Band performed for faculty, staff and patients gathered near the Willametta Keck Day Healthcare Center (HC2) on Nov. 17, the day before the USC Trojans football team played against the UCLA Bruins at the Los Angeles Memorial Coliseum. The Trojans won the game, 28-23.

One-size treatment for blood cancer probably doesn’t fit all, researchers say

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