Keck School welcomes parents, honors scholarship donors

Symposium offers insight about med school

By Melissa Masatani

Nearly 500 proud parents got a glimpse of the daily lives of their sons and daughters on Oct. 23 during an annual symposium at the Keck School of Medicine of USC.

Family members toured the Health Sciences Campus and heard from school leaders, including Henri R. Ford, MD, MFA, vice dean for medical education, as well as a panel of students during the afternoon event hosted by the Parents Association in Mayer Auditorium.

"Each of your children is an individual to us," said Raquel Atlas, MD, who holds associate dean positions for admissions and educational affairs and is an associate professor of obstetrics and gynecology. "Each of your children means something to us, and we promise you we will give them the care we would give to our own child."

The symposium, formerly known as a panel of students during the annual symposium at the Keck School of Medicine of USC, was joined by cancer survivors on the field during the Oct. 24 USC Trojan football game against Utah.

During the break at the end of the first quarter of play, a video about breast cancer was played on the giant video screen inside the Coliseum and the crowd gave a standing ovation.

Cancer survivors and their doctors take the field to raise awareness

To mark Breast Cancer Awareness Month, a team of physicians and staff from Keck Medicine of USC joined cancer survivors on the field during the USC-Utah football game on Oct. 24.

"It was an "awesome moment," said one of the doctors and their patients take the field at the Coliseum during the USC-Utah football game on Oct. 24.

Scholarships helped 2015 graduate Allison Wu attain her medical degree.

Scholarships helped 2015 graduate Allison Wu attain her medical degree.

Massry winners tell tales of discovery

By Amanda Busick

The unlikely sequence of discovery that turned a cheese-making innovation in Denmark into a precise tool for genome-editing has swept through biomedical laboratories around the world was the subject of the annual Massry Prize lecture on Oct. 29.

"Few discoveries transform a discipline overnight," said Elizabeth Fan, PhD, director of the Institute for Genetic Medicine at the Keck School of Medicine of USC, during her introduction of two of the three winners of this year's annual event and two additional awards.

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The breakthrough? Exposing bacteria to bacteriophages actually made them immune to future attacks, and Horvath and his team deduced that the key. Then they mapped out a method to protect the level of phages reaches a high value, it can have a very severe impact on fermentation, which can lead to a total fermentation failure."

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Breast, ovarian cancer risk may have association with sense of smell

By Margaret Trtryan

The association between menstrual cycle activity and breast and ovarian cancer risk may have an unexpected intermediary — odors. Keck Medicine of USC researchers have discovered for the first time that the estrus cycle (the equivalent of human menstrual cycle) in mice carrying a mutation known to cause familial predisposition to breast and ovarian cancer in humans is more readily stimulated by scent than in normal mice. Even more surprising was the finding that the ovary, independently of the nose, mediated the olfactory signals.

“This research indicates that a better sense of smell may contribute to the elevated cancer risk of women with BRCA1 mutations,” said corresponding author Louis Dubeau, MD, PhD, professor of pathology and medical director of molecular pathology, USC Norris Comprehensive Cancer Center. “We found that the presence of the mutation in the ovary mediated a stronger response to scent, implying that the mutation may influence the menstrual cycle, which in turn is an established risk factor for breast and ovarian cancer.”

The research was published Oct. 21 in the peer-reviewed journal PLOS ONE.

Springing off the observation that menstrual cycles often synchronize between female college roommates, indicating some sort of communication with environmental signals, the scientists compared female mice genetically engineered to carry the BRCA1 mutation to normal, wild-type mice. They isolated the females from males, causing estrus to peak in the females. When the females were exposed to male bedding, those with the BRCA1 mutation restarted estrus faster than the wild-type mice.

To confirm that the results were mediated by the nose, independently of the nose, the scientists transplanted ovaries from mice with the BRCA1 mutation to wild-type mice and also transplanted ovaries from normal mice into the genetically engineered mice carrying the mutation. The wild-type mice with the BRCA1 mutation present in their ovarian transplants responded more quickly when introduced to the male scent than mutant mice with wild-type ovarian transplants carrying the mutation in all tissues except the ovary.

“We’ve known for a long time that smell receptors are expressed in all kinds of tissues, but we know very little about what these receptors do outside of the nose,” Dubeau said.

Only certain tissues in the breast and reproductive organs have an elevated cancer risk in women who carry a BRCA1 mutation. We found that BRCA1 mutations do not only influence these tissues directly, but also indirectly by changing how they communicate with other cells. This research is one of several examples shown in my laboratory where BRCA1 controls how certain cells communicate from a distance. If we can understand how disruption in such communications leads to elevated cancer risk in BRCA1 mutation carriers, we can develop therapies to counter these effects, including perhaps therapies based on smell.

Other USC researchers who contributed to the study include Ying Liu, Yuan Tang, Elena Eshbom and Theresa Austria of the Department of Pathology, Vasu Punj of the USC Norris Comprehensive Cancer Center Bioinformatics Core and Division of Hematology, Frank Z. Stanzack, Yvonne G. Lin and Sara Maucvio of the Department of Obstetrics and Gynecology and Nancy Wu, Hai-Yan Yan and Robert Massow of the Department of Biochemistry and Microbiology, USC Dornsife College of Letters, Arts and Sciences.

USC Norris receives grant from Riley Foundation

By Carmy Peters

A three-year grant of $1,660,000 to fund pancreatic cancer research has been given to the USC Norris Comprehensive Cancer Center by the Susan E. Riley Foundation.

“The Riley Foundation has generously supported USC Norris’ pancreatic cancer research for several years,” said Stephen R. Gruber, MD, PhD, MPH, professor of medicine, USC Norris Comprehensive Cancer Center. “We are especially grateful to the Riley Foundation Board members for their continued confidence in our pancreatic cancer research and their continued support.”

The grant will help support efforts to further the understanding of inherited susceptibility to pancreatic cancer, a project headed by Gruber and Gregory E. Idos, MD, assistant professor of clinical medicine at the Keck School of Medicine of USC. In previous research published in April 2014, Gruber and Idos identified a gene known as BRCA1 associated protein-1, or BAP1, that has a causal link to pancreatic and other cancers.

“This knowledge allows family members who may carry the gene to undergo screening to identify the risk of fatal pancreatic cancer. But further analysis of patients is required to fully understand the scope of BAP1-associated pancreatic cancer,” said Gruber.

“In partnership with the Riley Foundation, it is our vision that everyone affected by pancreatic cancer will have hope, dignity and support,” said Gruber, an oncologist and geneticist who holds the H. Leslie and Elaine S. Hoffman Cancer Research Chair at the Keck School of Medicine of USC.

USC Norris is home to the Center for Pancreatic Cancer Research at the University of Southern California School of Medicine. The Susan E. Riley Foundation has generously supported USC Norris for many years. The project will also seek to quantify the frequency and risk of BAP1 and other genes linked to pancreatic cancer in a diverse population. The Gruber Lab hopes to revolutionize the course of treatment for pancreatic cancer by translating clinical and genetic analyses from the laboratory to the clinic, a model that has led to several new clinical programs and targeted drugs for other cancers.

Susan E. Riley and her mother, Edna, both died of pancreatic cancer. The foundation has been in existence since 2012 and has been a supporter of USC Norris for many years.

In the United States, pancreatic cancer is estimated to have claimed about 40,000 lives in the past two years. Most pancreatic cancer patients are diagnosed within the first year of diagnosis, and just 6 percent survive five years because of a lack of early detection tools and effective treatments. Inherited genetic factors play an important role in pancreatic cancer risk.

Calendar of Events

Saturday, Nov. 7

7:15 a.m. Department of Medicine and USC Office of Continuing Medical Education. “Contemporary Topics in Internal Medicine,” Jennifer R. Marks, MD, and Ron Bens-Alarid, MD, FACP. Westin Pavilion Conference Room. Info: Anaika Bohls, (323) 424-2347, uscmce@usc.edu

Monday, Nov. 9

3:30 p.m. HEAL Lab Talk. “Acute Use of Genes as Biomarkers in Stem Cells from National Psoas Muscles,” Mark Kaplan, USC, SSB II Room 209. Info: Adam Leventhal, (323) 442-6222, adam.leventhal@usc.edu, http://heal.usc.edu

Tuesday, Nov. 10

11 a.m. Keck Medical Center of USC. Employee Safety Fair. Hospital ID required. Soto 1, outdoor area near Neds. Info: Robert Vance III, (323) 424-9915, robert.vance@med.usc.edu

5:30 p.m. Ophthalmology Grand Rounds. On-Tat Lee, MD, USC, HCA Conference Room, 3rd Floor. Info: Yvonne G. Lin, (324) 409-5233, yvonne.g.lin@med.usc.edu

Wednesday, Nov. 11

Noon. ZN Seminar Series. “Aggregating Genetic Variants and Mutations Using Work Models of Cell Biology.” Troy Ideker, PhD, UCSD, Heinklotz Seminar Room, 2N1 112, Room 2N1 112. Info: Emily Chou, (323) 442-3219, emily.chou@med.usc.edu

Noon. USC Stem Cell Seminar. Bruno Péladeau, PhD, UCLA Orthopaedic Surgery. Eli and Edythe Broad CIRM Center Auditorium. Info: Christy A. Russell, lytal@med.usc.edu

Thursday, Nov. 12

6 p.m. Department of Orthopaedic Surgery Grand Rounds. Richard Chernek, MD, USC Norris Comprehensive Cancer Center. Medical Plaza, 3rd Floor, Room 702. Info: Tina Ibarra, (323) 442-4235, tina.ibarra@usc.edu

Friday, Nov. 13

8 a.m. USC School of Pharmacy Symposium. “Legislative Day,” Jeff Stone, MD, PhD, UCLA Orthopaedic Surgery. Eli and Edythe Broad CIRM Center Auditorium. Info: Christy A. Russell, lytal@med.usc.edu

28th Senate District. Arsenio Audition. Info and RSVP: Irene Chen, (714) 343-8792, irenechen@usc.edu

10 a.m. Pulmonary, Critical Care, Anesthesiology Seminar. “Translating Airway Gene Expression into Biomarkers for Lung Cancer and COPD,” Arvind Gupta, Johns Hopkins University, IRB 734. Info: Elvia Rubio, (323) 226-7923, elvarubi@usc.edu

Wednesday, Nov. 18

9 a.m. USC Stem Cell Workshop. “Flow Cytometry Overview and Tutorials.” Bin Fan, Flow Cytometry. Biochemistry, Molecular, and Cellular Biology Department, USC. 405 Nordhoff St., 3rd Floor. Info: Ryan O’Brien, (323) 442-0459, o伴随着高氧浓度 spender@usc.edu

Notice: Calendar items are due at least 10 days before publication date. Timely submission does not guarantee publication in print. See more calendar entries at huscnews.usc.edu/calendar-of-events. Submit items at huscnews.usc.edu/calendar-of-events. Include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number/email address.
Live robotic surgery at Keck is viewed worldwide

T wo surgeons from the USC Institute of Urology were among the principal featured participants in a 24-hour live robotic surgery event held Oct. 26 at Keck Medical Center at USC. Gill and his team performed robotic surgeries in countries that also included Sweden, Belgium, India, Turkey, Egypt, Brazil, India, South Korea and Australia.

At USC, the first surgery was performed by Indebir S. Gill, MD, whose pioneering robotic “zero-scar” nephrectomy was broadcast live from Operating Room 15-16 on the fourth floor at Keck Hospi- tal of USC. Gill is founding executive director of the USC Institute of Urology and chairman and professor, Catherine and Joseph Aresty Department of Urology at the Keck School of Medicine of USC. Earlier that morning, Mahir Desai, MD, performed a robotic radical cystectomy with intra-corporeal orthotopic neobladder.

For both procedures, the USC robotics team has the world’s preeminent experience. The surgeons navigated the procedures for viewers who watched via an online link, and they answered questions via Skype and on social media.

Later that evening, a four-hour session of GEO and Aresty Auditorium to further discuss robotic surgeries. The Studio session featured lectures by Gill, Desai and by Andrew Hung, assistant professor of clinical urology, as well as Andre Abreu, a clinical fellow in urol- ogy. Professor of Clinical Urology Rene Scoelo presented his session via Skype while traveling to Miami.

Organizers included Microsoft and the European Association of Urology.

SOTEOLO: New surgeon to build on success in Latin America

Continued from page 1

His diagnosis of prostate cancer, the political leader’s advisers sought out the top surgeon in that part of the world, which quickly led them to Sotelo.

“I had been traveling to Colombia and training surgeons in Colombia for many years,” Scoelo noted.

The surgery, which took place in July 2015, was particularly noteworthy in the Spanish-speaking world, and was covered by many news outlets, including an appearance by Scoelo on the Spanish-language edition of CNN.

“The surgeon’s result!” “Now three months later, the cancer is completely extracted and Zuluaga is doing great,” Scoelo said during an Oct. 11 inter- view in his new office at USC. “Just three or four weeks afterward, he was already back out doing campaign work [in his role as party chairman].”

Although Scoelo is no longer in part- nership with Gill, he will continue to be a major medical pres- sure in Latin America, serving as an ambassador for the USC Institute of Urology and Keck Medicine of USC overall. His passion for surgical innovation, advancing the field, and his worldwide teaching ex- perience coincides with and further strengthens the overall philosophy of the Keck School of Medicine of USC and its Department of Urology.

“Dr. Sotelo is the premier robotic and laparoscop- ic surgeon in Latin America,” said Indebir S. Gill, MD, chairman and professor, Catherine and Joseph Aresty Department of Urology, and executive direc- tor, USC Institute of Urology at the Keck School of Medicine of USC.

“And we have tasked him with further increasing his existing partnerships in Latin America to en- hance USC reputation as a world-class medical en- terprise,” Gill said. “In the two short months he has been here at USC, we have already seen a dramatic increase in the number of Latin American patients flying to USC Urology for advanced surgeries.”

Sotelo is excited to spread the word in Latin America about USC, but he also is looking forward to engaging with his new colleagues in Los Angeles. Sotelo is a pioneer in robotic surgery for complex urinary fistulae in females and males, for example, as well as treatment of benign prostate enlargement and inguinal lymph node dissection for cancer.

“Over time, I got a lot of experience in repairing all kinds of fistulas, which are abnormal communi- cations between different organs and the urinary system,” Scoelo explained. Prior to joining the Keck Medicine staff, he had occasionally traveled to USC to observe and learn, and also to share his knowl- edge.

Gill’s pioneering work in robotic surgery for cancer has been a big part of what Scoelo refers to as his “learning network” ever since Gill was a visiting professor in Venezuela 18 years ago. Thereafter, Scoelo would observe Gill’s surgeons in person, if possible, but mostly he watched them on video to help himself learn.

Sotelo would pass along what he had learned about Gill’s techniques to others in Latin America. Over time, the relationship became increasingly reciprocal — Scoelo pioneered some techniques of his own and exchanged those discoveries with Gill.

For Scoelo, coming to the United States repre- sents a chance to work not just with Gill but with many of the best surgeons anywhere.

“USC has the best urologic team in the world,” Scoelo exclaimed. “They are always thinking of new things — 30 plus surgeons, all the best in their specialty. It’s a unique opportunity.”

It’s also an opportunity with fewer logistical and economic limitations. Soon after arriving at USC, Scoelo and Gill performed a complex robotic surgery together. In South America, Scoelo had been using his “learning network” ever since Gill was a visiting professor. “It’s a unique opportunity,” Scoelo said.

“Here, it’s the latest technology,” Scoelo said. “To me, it’s like a dream. As Dr. Gill told me, ‘Rene, welcome to America!’”

USC’s Big Data U will teach researchers to analyze biomedical information

By Zen Vuong

Researchers need guidance as they navigate a jungle of biomedical data in their search for therapies, prevention techniques and cures to diseases.

To assist them, the National Institutes of Health has awarded a $13 million grant to build Big Data U, the nation’s first so-called Training Coordination Center aimed at teaching people with diverse backgrounds how to translate astronomical amounts of data into comparable and comparable statistics. The goal is to find trends, interesting relationships and clustering effects.

“A lot of data do exist, but they haven’t even been collected yet,” said the project’s lead investigator, John Van Horn, PhD, associate profes- sor of neurology and education, and director of the new Master of Science program in neuroimaging and informatics at the Keck School of Medicine of USC. “It’s still off in the future. What we do now and how we train people to be able to deal with that will prepare for the time when getting many terabytes worth of data is considered trivial — a relatively small or even ‘cute’ little study.”

Big data science has moved away from a traditional reductionist model, where a hypoth- esis is formed and tested by analyzing a single variable in a controlled experiment. Disorders such as Alzheimer’s disease in- volve intricate compo- nents. Isolating a single variable when it comes to conditions involving the brain may provide one answer, but not necessarily the complete one, said Arthur Toga, PhD, a professor with joint appointments at the Keck School of Medicine and the USC Viterbi School of Engineering.

“We’re letting the data lead us to the discovery. It’s kind of an upside down way of thinking about things,” he said. “Big data allows us to look at all these variables simultaneously and put together a comprehensive picture. Only in concert do they pro- duce the function and structure that you’re trying to understand. If you study only one variable at a time, you may never fully understand how it works.”

Big Data U, tentatively set to launch in the spring of next year, will be a hybrid of massive open online courses (MOOCs) and YouTube video tutorials. It’s a free resource for anyone who wants a self-guided or seminar-style study of topics relevant to biomedical science. Social media tools will provide ratings for course content and guide the selection of relevant training media.

“We will promote opportunities for big data research rotations, host ‘innovation labs’ for new grant proposal development, develop hackathons and other training activities,” Van Horn said. “Some of these activities will be up to the user to complete, but others will have an expectation of required completion and will entail a report or tangible product.”

The Training Coordination Center is a part of the NIH’s Big Data to Knowledge (BD2K) initiative, launched in 2012 to transform how science is done. BD2K has 11 Centers of Excellence for Big Data Computing, two of which are at USC: the Big Data for Discovery Science Center with Toga as principal investigator and ENIGMA Consortium with Paul Thompson, PhD, as principal investigator. Stanford University, Harvard Medical School and UCL also host Centers of Excellence.

While each Center of Excellence has its own training responsibilities, Big Data U at USC is the only center tasked with harmonizing these efforts into a concerted action.

‘What do we do now ... will prepare us for the time when getting many terabytes worth of data is considered trivial — a relatively small or even ‘cute’ little study.’

— John Van Horn
NOVEMBER 6 • 2015

HSC News

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

Massry: Scientists tell of breakthrough

Continued from page 1

It’s open enrollment time again, the only chance each year when USC employees may change their medical, vision and dental plans. Among the changes for 2016: The USP vision plan is not part of the Keck Medicine of USC health plan and requires a separate enrollment. For other changes and additional details, go to http://benefits.usc.edu.

Even if you’re not changing any benefits, employees are encouraged to log into Workday to check their personal information. Make sure dependents are listed correctly, for example, and ensure that benefit coverage aligns properly.

(For instance, if you’re no longer married, you should not be paying for “employee + spouse” level benefits.) Updates of this information can be made directly in Workday.

Scholarships: Lunchen celebrates legacy of success

Continued from page 1

The med students had an opportunity to be here and for us as parents,” said Jaye Jo Cooperman, whose daughter Julie is a first-year student. “Teachers know her name, care about her progress. She has great friends here and she’s happy.”

Parents: Symposium offers insights into med school

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It’s really gratifying to see a patient and know that you actually get to experience, to be a part of the local foundation, a medical expert. The luncheon was attended by USC Norris Ambassadors and USC Associates, who promote and share the cancer center’s mission. Among the topics of discussion was the success of the 15th annual Norris Ambassadors Luncheon, which took place two days later in Beverly Hills, and it will be followed by a trip to USC for Doudna, professor of chemistry and cell biology at UC Berkeley, who will continue the story of this landmark research during a presentation at the Keck School of Medicine in December.

The Keck School of Medicine of USC’s Massry Foundation founded the international Massry Prize in 1996 to recognize contributions to the biomedical sciences and the advancement of health. Shaul Massry, MD, is professor emeritus of medicine at the Keck School. The foundation promotes research and learning in nephrology, physiology and related fields.

The med students had an opportunity to hear about their transition to medical school as parents,” said Jaye Jo Cooperman, whose daughter Julie is a first-year student. “Teachers know her name, care about her progress. She has great friends here and she’s happy.”

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