General David H. Petraeus gets a four-star tour of HSC

By Hope Hamashige
and Cristy Lytal

David H. Petraeus, PhD, retired four-star general and former CIA director, visited the Health Sciences Campus (HSC) on Nov. 4 to see for himself what the view is like on the front lines of the life sciences revolution.

Petraeus — who also serves as the Judie Widney Professor at USC and Chairman of the KKR Global Institute — started his morning with a glimpse into the human brain. Faculty and students from the USC Laboratory of Neuro Imaging (LONI), the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC, and the Zilkha Neurogenetic Institute shared innovative research highlights and progress with the general during a morning tour.

Highlighting the Brain

Judy Pa, PhD, a new assistant professor at LONI, discussed the future of disease mapping, sharing images depicting the contrast between the brains of healthy individuals and those affected by Alzheimer's disease. LONI Assistant Professor Neda Jahanshad, PhD, steered the conversation to global brain data networks — specifically, the ENIGMA project initiated by Professor Paul Thompson, PhD. The project's 300 researchers are sharing brain scans and genetic information from 30,000 individuals with the goal of "cracking the neuro-genetic code" underlying diseases as various as schizophrenia, addiction, HIV and post-traumatic stress disorder.

Given ENIGMA's heavy computing and data storage demands, Petraeus asked, "You're not running out of storage space? Even the CIA, we actually commercially contracted out. We just couldn't build our own cloud fast enough." ENIGMA's computing and data storage needs are currently handled by USC's new Institute for Neuroimaging and Informatics (INI), which houses LONI.

Petraeus' curious mind next brought him to the new Choi Family Therapeutic Screening Facility, at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC.

Finding Better Drugs

Center Director Andy McMahon, PhD, FRS, and Screening Director Justin Ichida, PhD, welcomed Petraeus to the facility, which is testing FDA-approved drugs on motor neurons formed by reprogramming skin cells from patients with atypical lateral sclerosis (ALS), or Lou Gehrig's disease. For reasons that are not yet understood, military veterans are more likely than civilians to suffer from this devastating disease.

Kimberley Babos, a graduate student in the Ichida lab, showed Petraeus how to use reprogrammed motor neurons into a robotic screening machine, which exposes them to 50,000 drugs a day. The Ichida lab has already found eight FDA-approved drugs that keep the motor neurons alive in the petri dishes — indicating possible therapeutic benefit.

"This is unbelievable — robots and computers," said Petraeus.

Professor of Research Neil Segil, PhD, is collaborating with Ichida to apply a similar approach to hearing loss, which afflicts many who have served in the military.

Suhani Gopalakrishnan, PhD, a postdoctoral research associate in the Segil and Ichida labs, described how the team has used cellular reprogramming to create inner ear cells responsible for hearing. The team plans to use reprogrammed inner ear cells to search for drugs that protect against or reverse hearing damage.

"Have you gone back..." — Dr. David H. Petraeus

Graduate student Kimberley Babos explains how research at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC may help find effective drugs to treat amyotrophic lateral sclerosis. Military veterans are more likely than civilians to suffer from this devastating disease.

Massry Prize winners discuss groundbreaking immunotherapy research

By Hope Hamashige

Steven Rosenberg recently began treating a patient with bile duct cancer who had already undergone chemotherapy, but the treatment had failed to stop the cancer from spreading to her lung and liver. He treated her with a new form of immunotherapy, personalized to attack her tumor cells that are unique to her cancer. Today, a year later, her tumors are still shrinking.

Though some scientists have suspected for more than a century that boosting the body's immune system could be an effective cancer treatment, it is only now being used to treat people. Three of the scientists whose pioneering work on T cells that made immunotherapy a reality — Rosenberg, Zelig Eshhar and James Allison — were named the winners of the 2014 Massry Prize.

All three recently delivered lectures at the Keck School of Medicine of USC and all three drove home their belief that the immunotherapies, already an important part of treating some types of cancer, will eventually change we treat all cancers.

Rosenberg, MD, PhD, chief of surgery at the National Cancer Institute, discussed treating several melanoma patients with immunotherapy. Rosenberg described treating his first melanoma patient with a treatment called adoptive cell therapy, which uses cancer cells from people with similar tumors to attack the patient's cancer.

Eshhar, PhD, described how he and his colleagues at the Weizmann Institute in Israel set out to overcome problems associated with injecting the patient's own immune cells into their bodies. He showed how they can instead turn a person's immune cells into weapons that can fight tumors.

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Construction set to begin on major Health Sciences Campus building projects

By Hope Hamashige

Major changes are underway on the corner of Alcazar and San Pablo Streets on the Health Sciences Campus, where several bulldozers are preparing the land for the construction of three new buildings. Work has begun on a six-story parking structure that will provide an additional 1,200 parking spots for both staff and patients. The parking structure is going to be the first structure to rise from the ground. It is expected to be complete by the fall of 2015. 

Student housing for 450 students will be the next building on two acres of the parcel. Developer American Campus Communities is scheduled to break ground on the project by the end of this year with a projected completion date of fall 2016. “The housing project is going have really nice amenities — a business center, swimming pool, fitness center and a 10,000-square-foot child care center” for the campus, said Melissa Schild, USC’s executive director of land use and planning. The third project will be a 200-room Hyatt House hotel, an extended-stay hotel that has apartment-style suites and a host of services for people who are spending weeks, rather than days, at the hotel.

The hotel will have 15,000 square feet of conference space and 15,000 square feet of retail space. Hyatt is responsible for signing leases of retail space. Hyatt is responsible for signing leases with retail tenants, none of which have been determined. However, Schild said the hotel did ask campus officials to recommend the type of retail they would like in the hotel. Across the street, on the south side of Alcazar, another construction project is about to get underway on the Norris Healthcare Center, a seven-story building for outpatient oncology services, is under construction and slated to be complete by November of 2016.

Check out the new intranet site for Keck Medicine of USC faculty and staff

KeckNet, a new intranet site providing system-wide communications for the faculty and staff of Keck Medicine of USC launched on Nov. 3, along with a new online community for USC Verdugo Hills Hospital.

As our medical system continues to grow, keep up with the latest Keck Medicine of USC happenings by making KeckNet your home for news, information and resources. It is located at kecknet.usc.edu.

Our intranet will continue to grow in 2015 as we develop online communities for Keck Hospital of USC, USC Norris Cancer Hospital, USC Norris Comprehensive Cancer Center, USC Care and Keck School of Medicine of USC.

MASSRY: Prize winners discuss key insights

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which helped many of them achieve a complete regression. One limitation of early immunotherapy was its ability to attack only some types of cancers. Adoptive cell transfer was developed by Eshhar. PhD, professor of immunology at the Weizmann Institute of Science in Rehovot, Israel, and is a technique to expand the range of T cells to attack cancers.

All agreed that much more research needs to be done, but this wholesale shift, from treating tumors to treating the immune system represents a major breakthrough in cancer treatment. Though it is still new, the treatment represents hope for a growing number of cancer patients.

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Calling all Faculty: Register on Doximity to vote in U.S. News rankings

U.S. News & World Report ranks many of our excellent clinical departments in its Best Hospitals issue each year. These rankings are important brand recognition and reputation opportunities that are very visible to the public.

Each department’s representation among physicians is a vital component of scoring. In previous years, U.S. News sent its paper survey to a small group of randomly selected board-certified specialists across the country. This year, U.S. News has announced it will expand the survey to include all board-certified physicians who are registered Doximity members (an online physician network) before Dec. 5, 2014.

To vote online, you will need to register for a free account or update your profile with Doximity by Dec. 5, 2014. You may already have a profile because Doximity pulls information from physician databases. By visiting www.doximity.com/signin, you can establish or activate your account quickly by locating your profile and clicking on “Claim/Edit Profile.”

For those who register before Dec. 5, voting will occur by either an email prompt by Doximity or a notification on your Doximity account when you log in during the voting period. U.S. News does not publish its voting period but it usually occurs from late January through February.

We will send email reminders to faculty when the voting season arrives to prompt you to visit your Doximity account or to be on the lookout for the Doximity email.

While U.S. News will be weighing the online votes differently from the paper survey votes, we feel online Doximity voting gives us a slightly better chance of having a voice in these rankings than relying on receiving the randomly selected paper survey. The key will be ensuring our doctors register and vote.

To learn more about the U.S. News physician survey, see http://tinyurl.com/9q4ghuj. Time is of the essence. You must register on Doximity (www.doximity.com) before Dec. 5, 2014, to be eligible to vote online for this year’s rankings.

PETRAEUS: Military, intelligence leader hails ‘unbelievable’ life sciences research at HSC

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to Walter Reed National Military Medical Center?” asked Petraeus. “The hearing loss issue there is really important. That’s where we get our most seriously wounded combat veterans.”

Continuing his exploration of neural degeneration in its many forms, Petraeus headed to the lab of Berislav Zlokovic, MD, PhD, director of the Zilkha Neurogenetic Institute.

Postdoctoral researcher Axel Montagne, PhD, described a new test for detecting blood-brain barrier (BBB) leaks, which contribute to the development of Alzheimer’s disease. A drug called 3K3A-APC, currently in a Phase 2 clinical trial for stroke victims, has shown potential for stopping these leaks in Alzheimer’s patients.

Meeting the Troops

Petraeus did get a chance to relax a bit over lunch, which he shared with several students from the Keck School who are also members of the armed forces. After getting to know each of them, Petraeus shared a piece of advice that has served him well, which is to leave their intellectual comfort zones as often as possible and never fear bucking convention.

One of the students, Katie Ross, said this advice will stay with her as she finishes school and faces career decisions. “Being able to meet him is something I will remember for the rest of my life,” she said.

Petraeus also paid a visit to the USN Navy Trauma Training Center, a program of the U.S. Navy, the Keck School of Medicine of USC and LAC+USC Medical Center, which provides armed forces medical caregivers — including medics, nurses, physicians and Special Forces personnel — crucial first-hand experience treating traumatic injuries. While there, he swapped war stories with the nurses, doctors and medics from the U.S. Navy who spent several weeks at the training center at LAC-USC before being deployed.

The general himself is no stranger to battlefield injury. Petraeus, who spent most of his career in the U.S. Army, with the 101st Airborne Division, broke his pelvis in a parachuting accident, and was shot in a training accident and required the insertion of a chest tube without anesthesia. The pain and severity of the second injury, he said, was so extreme that he wasn’t sure he would survive.

“I will never forget staring into the eyes of that Army medic,” recalled Petraeus. He added that doctors, nurses and medics in the field comprise the “most important army of one” in the military.

Three trauma experts who work closely with naval medical personnel at the training center accompanied Petraeus on the tour: Demetrios Demetrades, MD, PhD, FACS, chief of the division of trauma and critical care; Edward Netwon, MD, interim chairman of emergency medicine, and Philip Lumb, MB, BS, MCCM, chair of the Department of Anesthesiology.

Petraeus also had the rare opportunity to step into a Keck Hospital operating room, where Inderbir Gill, MD, executive director of the USC Institute of Urology and professor of the Cathar ine and Joseph Aresty Department of Urology at the Keck School, was performing a robotic surgery on a patient with prostate cancer. Petraeus, who was diagnosed with prostate cancer in 2009, marveled at the advances being pioneered at Keck Medicine of USC.

Sharing Perspective

After a full day on campus, Petraeus told Carmine A. Puliafito, MD, MBA, dean of the Keck School of Medicine of USC, how impressed he was with HSC as a place of learning, healing and scientific discovery.

“This has to be the Delta force of health science campuses,” said Petraeus, as he was shown to the student center by joining Puliafito on stage at Mayer Auditorium for a discussion as part of the Dean’s Distinguished Lecture Series.

In a wide-ranging discussion, Petraeus and Puliafito discussed medicine and the military and what the two professions have in common. Petraeus noted that advances in medicine have helped many soldiers survive serious battlefield injuries, but that, too, has created challenges.

“So many come home with life-altering injuries, and their biggest challenge is not in the hospital. It is when they individualizes home and realizes that the rest of their life will be different,” explained Petraeus, best-known for leading the so-called surge strategy as commander of all U.S. troops in Iraq.

He also discussed the challenges posed by the high instance of traumatic brain injury and post-traumatic stress disorder.

At the conclusion of his visit, Puliafito presented Petraeus with a token of his appreciation: an engraving of a painting depicting the death of Joseph Warren, who died fighting British forces at the Battle of Bunker Hill. Puliafito chose a depiction of Warren to remind Petraeus of his visit to HSC, because Warren was a commissioned general, as well as one of Boston’s finest doctors.

To attend this lecture, RSVP online at www.usc.edu/evp (code: Mukherjee). The event will be webinar live at http://keckmedia.usc.edu/Me dicine/corganized/ catalog/dMDC.

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Several hundred people packed the Keck School’s Earle and Joseph Aresty Department of Ophthalmology, in the center of campus, to hear Mukherjee deliver the Nancy Short Lecture. The event attracts a diverse audience, from medical professionals to students, faculty and the general public.

In his talk, Mukherjee discussed his recent publication in the New England Journal of Medicine on the molecular basis of Parkinson’s disease. He discussed a model organism used in his research: the nematode Caenorhabditis elegans, commonly known as a “roundworm.”

Mukherjee is an assistant professor of medicine at Columbia University and a staff cancer physician at Columbia University Medical Center.


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Mukherjee is an as-
Calendar of Events

Monday, Nov. 17
Noon, K3OM Research Seminar: “Antiviral RNAi – A New Antiviral Immunity Mechanism in Mammals.” Shou-Wei Ding, University of California, Riverside. Jancy Auditorium. Info: Mary Jane Chua, (323) 442-7732, maryjane.chua@med.usc.edu

Wednesday, Nov. 19
Noon, The Saban Research Institute Seminar: “Regulating Fat Storage and Breakdown to Improve Insulin Sensitivity in Humans.” Vishwajyot Puri, Boston University School of Medicine. Saban Research Building, first floor auditorium, CHLA. Info: Laura Rubin, (323) 361-8715, lrabin@chla.usc.edu, chla.org/tecpad

Thursday, Nov. 20
Noon, Research Center for Liver Disease Seminar: “Necroptosis Signaling and Inflammation.” Jim Newton, Genentech, Inc. Hastings Auditorium, HMR. Info: Dolores Mendoza, (323) 442-1263, dmendoza@usc.edu


Friday, Nov. 21
11 a.m., Jane Anne Nohl Division of Hematology and Center for the Study of Blood Diseases Grand Rounds: “Coordination of Mouse Hematopoietic Stem Cells In Vivo.” Feng Liu, USC LA/GUSC/USC Medical Center Implantable Tower Conference Room D. Info: Carolyn Castellanos, (323) 663-6193, carolyn.castellanos@med.usc.edu
Friday, Nov. 21 and Saturday, Nov. 22
7:55 a.m. - 5 p.m., Continuing Medical Education. “European Wrist Arthroscopy Society Advanced Cadaver Wrist Surgery Course,” various speakers. Hardness Auditorium. Info and RSVP: (323) 442-2555, usccme@usc.edu, http://www.usc.edu/cme

Tuesday, Dec. 2
1 p.m. - 5:30 p.m., Zildjian Neurogenic Institute Seminar: “Fifth Annual Zach Hall Lecture.” Pakoa Rukie Vale. University School of Medicine. Herklotz Seminar Room, ZNI 112. Info: Julie Carl, (323) 442-3219, jcarl@usc.edu. RSVP: tinyurl.com/pq6r7u

Wednesday, Dec. 3
Noon, The Saban Research Institute Seminar. “Adoptive T Cell Therapy with CAR Modified T Cells.” Ramon Benitez, Memorial Moores Comprehensive Cancer Center. Saban Research Building, first floor auditorium, CHLA. Info: Laura Rubin, (323) 361-8715, lrabin@chla.usc.edu, chla.org/tecpad

Thursday, Dec. 18
6 p.m., Orthopaedic Surgery Grand Rounds: “Alignment In TKA: Dow Accuracy Count If We Don’t Know The Target.” Henry D. Clark, Mayo Clinic College of Medicine. Jancy Auditorium. Info and RSVP: Sylvia Suarez, (323) 226-7204, sylvia.suarez@med.usc.edu

Notice: Calendar submissions must be received at least 10 days before an issue’s publication date to be considered. Please note that timely submission does not guarantee an item will be printed. Entries must include date, day, time of talk, and first and last name of speaker, affiliation of speaker, location and a phone number or email address for information.
Submit calendar items at tinyurl.com/calendar-hsc.

HANGING TO HEAR — Keck School of Medicine Dean Carmen A. Puliaputo and the Department of Otolaryngology head and Neck Surgery hosted a USC-CHLA Center for Childhood Communication open house on Oct. 2 to showcase its world-class facilities to treat children with hearing loss and deafness. The event included tours of the facility, showcasing diagnostic equipment and therapy rooms. From left are: Dean Puliaputo, Kelly, Shane and Patrick Lundie; and John K. Niparko. At the event, Kelly Lundie shared her story about her son Shane’s journey to hearing. USC surgeons and audiologists — including Niparko — performed the boy’s Cochlear implant surgery. Other guests included Gaston Kent, CEO of the John Tracy Clinic, Los Angeles County Supervisor Mark Ridley Thomas and musician Richard Reed, who performed at the event.

Noted physician Michael S. Cann joins Keck Medicine of USC

By Meg Aldrich
Keck Medicine of USC has acquired the practice of Michael S. Cann, MD, in Glendale, CA. Together they will provide comprehensive, world-class orthopaedic care to the Foothill communities. The practice, which will remain in its current location at 1806 Verdugo Blvd. in Glendale on the USC Verdugo Hills Hospital campus, will be known as USC Orthopaedic Surgery Associates – Glendale. “I’m very pleased to join the USC team and to be able to provide my patients access to the world-class care and innovative research for which USC is known,” said Cann. “Our patients are the big winners here, since treatment can be coordinated with rehabilitation as close to home as possible. Now they’ll have the full complement of resources that only a university-based treatment and research center can offer – right here in Glendale.”

“Over the years, Dr. Cann has built a thriving practice through his dedication to delivering the highest quality of care to his patients,” said Jay R. Lieberman, MD, professor and chair of the Department of Orthopaedic Surgery at USC offers world-class treatment and rehabilitation of musculoskeletal disorders, including sports medicine injuries, joint preservation and replacement (hip and knee replacement), hand injuries, foot and ankle disorders, bone tumors, spinal disorders, and fracture care.

In addition to specialized orthopaedic surgeons, the team includes physical and occupational therapists and pain management professionals who provide a high standard of care from the operating room and into recovery.

In case of an emergency...

Call the Emergency Information Phone: (213) 740-5323. 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.

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