

New director shares vision of cancer center's future

'Clinical translational medicine has to be our key goal—that's the fundamental principle that will drive our future.'

—Steve Gruber, director of the USC Norris Comprehensive Cancer Center at the Keck School of Medicine

Stephen B. Gruber, a renowned physician-scientist from the University of Michigan, formally assumed the position of director of the USC Norris Comprehensive Cancer Center at the Keck School of Medicine of USC on Dec. 1. Gruber is a medical oncologist, cancer geneticist and epidemiologist whose research focuses on genetic and environmental contributions to cancer. The Weekly recently sat down with him for a conversation reflecting on his vision for the future of the cancer center and patient care.

Q: What initially interested you about the position at USC?

A: I am a medical oncologist and cancer geneticist who has been committed to advancing the care of patients and families with cancer for my entire career. One of the ways I think we can do that best is in the setting of fundamental research that provides us with more ability to take care of patients and those families. Recognizing that research is the foundation of all that we do in cancer care, I've really been looking for ways to conquer



From left are Steve Gruber, director of the USC Norris Comprehensive Cancer Center at the Keck School of Medicine, USC trustee Harlyne J. Norris and Keck School Dean Carmen A. Puliafito at a Nov. 14 welcome dinner in Gruber's honor.

cancer by translating innovative research to patients. The Trojan Family allows me to do that best, and I'm really looking forward to this transformative opportunity here at the

USC Norris Comprehensive Cancer Center to really make a difference in the lives of our patients and families, as well as our research community.

There are 40 comprehen-

sive cancer centers within the United States, and those are the critical places where cancer care and cancer research are going to be transformed for

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Sean Henderson named chair of Keck School Department of Emergency Medicine

By Amy E. Hamaker

Sean O. Henderson, associate professor of emergency medicine and preventive medicine, has been appointed chair of the Department of Emergency Medicine in the Keck School of Medicine of USC and chief of emergency medical services at the Los Angeles County+USC Medical Center. The appointment is effective Jan. 1, 2012.

A nationally recognized leader in research on acute medical emergency conditions, Henderson is also a highly respected clinician-educator and administrator.

The Department of Emergency Medicine manages the emergency room at LAC+USC, one of the largest and busiest emergency departments, the busiest trauma center and the largest emergency medicine residency training program in the nation.

Henderson is considered a national leader in the descriptive epidemiology of acute emergency medical conditions, especially those affecting minority and underserved populations. His love of emergency medicine began during high school, when he performed a wide variety of work at a volunteer clinic overseas in Papua, New Guinea.

"I've always wanted to work in a situation where I could take care of every type of illness, injury and condition, and the

closest thing to that is emergency medicine," he explained. "LAC+USC has the largest, busiest emergency department this side of the Mississippi, with a tremendous faculty and staff. Being in charge of emergency services for one of the most populous counties in the United States is quite an honor."

Henderson's goals for the department include integrating research and clinical care, promoting a multidisciplinary approach to emergency medicine research and consulting with other departments to improve the care of trauma patients. "I'd also like to increase our community presence through outreach," he added. "For example, we're currently working with the Los Angeles Unified School District to teach parents first aid and CPR techniques for free while their children are in school."

Henderson succeeds Edward Newton, who will step down after serving nine years as chair of the Department of Emergency Medicine. Newton plans to rejoin his department as an active member of the emergency medicine team.

"I know that under Dr. Henderson's guidance the department will continue to serve as a regional and national center of excellence in emergency medical care, education and research," said Carmen A. Puliafito, dean of the Keck School of Medicine.



Sean O. Henderson

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USC Nurse Practitioners offer expanded care options for physicians, patients

By Amy E. Hamaker

Acute care nurse practitioner Nasrin Esnaashari has a long history with the Keck School of Medicine of USC—in 1998, she was the first nurse practitioner to be hired in the Keck School. "I had a degree in nursing, and had worked at Norris since 1994," she recalls. "I was the only one, and it took several months to develop a template for a scope of practice to get my privileges at the hospital and clinics. They still use the same template now."

Today, Esnaashari, who currently works in neurology, performs a variety of functions, including seeing patients in movement disorder, coordinating a multidisciplinary meeting once a month for deep brain stimulation (DBS) therapy and running a DBS support group for patients. As a nurse practitioner, she serves an important role within the Keck Medical Center of USC.

A nurse practitioner (NP) is an advanced practice registered nurse who has completed graduate-level education and holds national board certification in an area of specialty (such as acute care, family practice or pediatrics, for example). NPs, working in collaboration with physicians, are able to diagnose and manage a variety of acute and chronic conditions, prescribe medications, perform diagnostic testing, educate patients on health care issues and provide hands-on care.

According to the California Association of Nurse Practitioners, there are 140,000 practicing NPs nationally, with more than 16,000 NPs in California alone—and 26 of them practice at USC. Nearly 9,000 new NPs are trained each year at more than 325 colleges and universities.

NPs are coming into greater demand as a need for more primary caregivers is expected due to expanded national health care reform. Individual NP duties depend greatly on the needs of the practice. Sophia Lam, an acute care NP in cardiothoracic surgery at Keck Hospital of USC, performs a wide variety of diagnostic and consulting functions.

"I see patients in the clinic area, consult for cardiac surgery, including bypass, valve surgery and aneurysm repair, and I see

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USC researchers confirm cytomegalovirus can cause cancer

‘CMV is incredibly common. ... In healthy patients with normal immune systems, it becomes dormant and resides inactive in the salivary glands. No one knows what reactivates it.’

—Michael Melnick, professor of developmental genetics in the Ostrow School of Dentistry

By Beth Dunham

The Laboratory for Developmental Genetics at USC has confirmed cytomegalovirus (CMV) as a cause of the most common salivary gland cancers. CMV joins a group of fewer than 10 identified oncoviruses—cancer-causing viruses—including HPV.

The findings, published online in the journal *Experimental and Molecular Pathology* over the weekend, are the latest in a series of studies by USC researchers that together demonstrate CMV’s role as an oncovirus, a virus that can either trigger cancer in healthy cells or exploit mutant cell weaknesses to enhance tumor formation.

Lead author Michael Melnick, professor of developmental genetics in the Ostrow School of Dentistry of USC and co-director of the Laboratory for Developmental Genetics, said the conclusion that CMV is an oncovirus came after rigorous study of

both human salivary gland tumors and salivary glands of postnatal mice.

CMV’s classification as an oncovirus has important implications for human health. The virus, which has an extremely high prevalence in humans, can cause severe illness and death in patients with compromised immune systems and can cause birth defects if a woman is exposed to CMV for the first time while pregnant. It may also be connected to other cancers besides salivary gland cancer, Melnick added.

“CMV is incredibly common; most of us likely carry it because of our exposure to it,” he said. “In healthy patients with normal immune systems, it becomes dormant and resides inactive in the salivary glands. No one knows what reactivates it.”

This study illustrates not only that the CMV in the tumors is active, but also that the amount of virus-created proteins found is positively correlated with the severity of the cancer, Melnick said.

Previous work with mice satisfied other important criteria needed to link CMV to cancer. After salivary glands obtained from newborn mice were exposed to purified CMV, cancer developed. In addition, efforts to stop the cancer’s progression identified how the virus was acting upon the cells to spark the disease.

Thus, the team not only uncovered the connection between CMV and mucoepidermoid carcinoma, the most common type of salivary gland cancer, but also identified a specific molecular signaling pathway exploited by the virus to create tumors, being the same in humans and mice.

“Typically, this pathway is only active during embryonic growth and development,” Melnick said, “but when CMV turns it back on, the resulting growth is a malignant tumor that supports production of more and more of the virus.”

The study was conducted by Melnick with Ostrow School of Dentistry of USC colleagues Tina Jaskoll,

professor of developmental genetics and co-director of the Laboratory for Developmental Genetics; Parish Sedghizadeh, director of the USC Center for Biofilms and associate professor of diagnostic sciences; and Carl Allen at The Ohio State University.

Jaskoll said salivary gland cancers can be problematic because they often go undiagnosed until they reach a late stage. And since the affected area is near the face, surgical treatment can be quite extensive and seriously detrimental to a patient’s quality of life.

However, with the new information about CMV’s connection to cancer comes hope for new prevention and treatment methods, perhaps akin to the development of measures to mitigate human papilloma virus (HPV) after its connection to cervical cancer was established. Jaskoll added that the mouse salivary gland model created to connect CMV to cancer might also be used to design more effective treatments.

Keck clinician receives NIH K23 award to support diabetes/obesity research

By Amy E. Hamaker

Kathleen Page, a clinician and assistant professor of clinical medicine at the Keck School of Medicine, has received a five-year, \$774,575 K23 grant from the U.S. National Institutes of Health (NIH) to help her continue research on increased diabetes and obesity rates for Hispanic children exposed to maternal diabetes in utero.

“We know from studies done with Pima Indian populations (which have a very high risk of diabetes) that exposure to a mother’s diabetes in utero increases the child’s diabetes risk about 10 fold,” Page

explained, noting that risks are also heightened for obesity incidence. Page hopes to study the changes that occur in utero in a Hispanic population, also known to have a high risk of maternal diabetes.

“Has the way the children store fat changed? Are their bodies not producing insulin or responding to insulin the way they should be? There’s something going on in utero,” she said.

An NIH K23 grant, or Mentored Patient-Oriented Research (POR) Career Development Award, is given to help support the career development of investigators

who have made a commitment to focus their efforts on patient-oriented research. Applicants must justify their need for experience in this type of mentored research and convince the NIH that the experience will enhance their careers as independent investigators.

“K23 grants are really important for people like me,” said Page. “I’m a physician, and I’ve trained for many years as a clinician. These grants give me protected time,



Kathleen Page

allowing me to devote my time to the research and to building the skills I need to develop my research.”

Page’s mentor for the grant proposal and ongoing research is Thomas Buchanan, associate dean for clinical

research and a professor of medicine and obstetrics and gynecology at the Keck School.

“Katie did a great job putting together a research program and plan that allowed her to compete for this K23 award,” said Buchanan, who is also chief of the division of endocrinology, metabolism

and diabetes at the Keck School and director of the Southern California Clinical and Translational Science Institute. “Incredibly, she received a perfect score of 10 on the peer review of her application to NIH. She is clearly on a path to success in clinical and translational research.”

Page was recruited from the Yale School of Medicine to USC’s Department of Medicine in the division of endocrinology in July 2009. The grant for her proposal “Mechanisms underlying increased risk for obesity and diabetes in Hispanic children exposed to maternal diabetes in utero” was awarded this past August.

The Weekly

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Henderson received his bachelor’s degree from USC and master of science degree from Georgetown University. He graduated from the Keck School of Medicine in 1989 and completed his residency in emergency medicine at LAC+USC Medical Center. He joined the USC faculty in 1993 and has held a number of administrative appointments, including medical director and, most recently, vice chair of the department since 2002.

The national search for a new chair of emergency medicine lasted nine months, and the search committee and Puliafito evaluated nine highly qualified internal and external candidates.

“Sean has very strong qualifications for any department in the country,” said Phillip Lumb, a professor and chairman of the Department of Anesthesiology at the Keck School, who headed the search committee. “He happened to have been in our own emergency department, and had a demonstrated track record of excellent performance.”

A native of Southern California, Henderson is married to Laura Crocitto, who is a clinical associate professor of surgery, urology and urologic oncology at the City of Hope, where she serves as physician advisor. The couple has four children.



Ryan Ball

NEW USC PROGRAM TARGETS UROLOGIC CANCER—Donors Susan W. and Carl W. Robertson recently gave \$1 million to create a named program to treat cancer in the USC Institute of Urology. Speaking about the gift to create The Susan W. and Carl W. Robertson Program for Outpatient Tumor Ablation, Susan Robertson said, “We are delighted to support Dr. Gill and his team in this cutting-edge center for treating tumors in a minimally invasive fashion.” From left, at a Nov. 16 meeting at USC, are: Keck School of Medicine Dean Carmen A. Puliafito, Susan and Carl Robertson, and Inderbir S. Gill, executive director of the USC Institute of Urology.

NP: Advanced abilities are boon to patients

Continued from page 1

patients post-op with or without the surgeon present,” she said. “I also look at incisions, manage medications, answer pre-op and post-op questions, and review clinical data to make judgment calls for when to transfer a patient to our facilities. Some of the more lengthy clinical time I spend is in pharmacy reviews.”

Lam believes her advanced practice abilities give her more flexibility to help where she is needed. “Making clinical decisions helps everything flow a lot faster for patients,” she explained. “When I was a staff nurse at USC, surgeons would have to take pages all day because there was no one else to answer the call.”

Mary Schoenbaum, an NP in Keck Hospital’s Cardiovascular Division/Interventional Service, agrees, citing the connection between nurses on the ward and NPs. “We can really help the nurses on the ward, as we can write orders and we’re readily available,” she said. “I’m often the first person patients will see when they’re admitted, and the last person they’ll see when they leave.”

Lam notes that, although NPs are nurses, they do face a different level of responsibility. “I must make sure that what my patients need gets taken care of before I can leave,” she explained. “You have to have a passion to do this. There’s a lot of autonomy, and patients and doctors will rely on you to make the right decisions.”

For Esnaashari, the extra responsibility is well worth the time. “My favorite part of being a nurse practitioner is spending real time with the patients, getting involved beyond just the office visit.”

GRUBER: Cancer center defined by ‘cutting-edge research that transforms clinical care’

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the entire world. USC Norris was established as an inaugural cancer center in the war on cancer. I am honored to lead the Norris into the next generation; it is an exciting challenge and opportunity.

We have an opportunity to really transform the institution, to take advantage of its current strengths in basic science and clinical care, and merge them in a way that we have yet to fully realize at USC. Clinical translational medicine has to be our key goal—that’s the fundamental principle that will drive our future. We have terrific basic science at USC, we have terrific patient care and we are making progress toward translational care.

I think we will not only transform our vision for how USC builds its cancer care, both in terms of its physical capacity and in terms of the ways we think, we recruit, and we identify transformative scientists and clinicians who can change the way cancer care is provided.

Q: What aspect of your research do you find most compelling?

A: What we are finding is that the cancer genome provides insights for understanding the pathogenesis of cancer—the reasons why cancer develops and what drives cancer—and how we actually take care of patients

who have cancer. How do we select the best drugs, why do we choose a drug that will work well in one patient and avoid drugs that can cause harm or simply don’t work? Much of that is actually driven by genomics and by understanding the genomic landscape of a cancer within a patient.

All of the genetic variations that define the growth advantages of a cancer cell can also lead to the best way to optimize care for that patient. We now have the tools to take advantage of this information in ways that were previously inconceivable.

USC has had strength in epigenetics for decades. Being able to merge what we know of the sequence of the human genome, as well as the regulation of the genome through epigenetic mechanisms, gives us an opportunity to do things that we have not been able to do before.

My research has always focused on cancer care for patients and populations. As a practicing physician, it has been critical for me to gain insights from the patients that we see in clinic. But in addition, we really want to understand the distribution of cancer within the population.

We cannot just take care of patients one at a time, but we also need to make fundamental insights and discoveries that allow us to dramatically reduce the burden of cancer in the population.

Q: What are your impressions of the USC Norris Comprehensive Cancer Center and its history?

A: The legacy of the accomplishments of Norris is firmly established. It’s done much of the work to define care for a number of cancer systems, including renal cell carcinoma, breast cancer, prostate cancer and GI cancer. That legacy leaves an important impression for me, but also a sense of responsibility that we can build on that legacy in a way that will lead us to innovation.

Q: What is your vision for the future of USC Norris?

A: The future of the USC Norris Comprehensive Cancer Center can best be defined by an unequivocal commitment to cutting-edge research that transforms clinical care. While our vision will be set through a strategic planning process, the priorities for the cancer center are to invest in research in a way that transforms clinical care. We will provide the infrastructure that facilitates those discoveries and the highest quality of care available to cancer patients in the United States and the world.

Q: How does your combined expertise as a clinician and researcher influence how you approach this position?

A: I am fortunate to be able to take advantage of clinical insights to drive

my own research agenda, yet also to understand what is really important to patients. Patients want to make sure they are receiving the best care available anywhere. The Norris Cancer Center is that place. As I see patients from a clinical perspective, it’s a profound benefit to my own research to be able to understand what are the key questions that are not yet answered and where we have an opportunity to invest, to close those gaps and improve care. And from the research side, it’s helpful to know that the fundamental insights into mechanisms of cancer, as well as the distribution of the disease throughout the population, can change the way we actually care for patients. These are the discoveries that will lead to new drug development and better care for cancer patients and populations.

Q: What role do you see yourself playing in the growth of our academic medical center?

A: Hopefully, my role will be to facilitate the development of cancer care across the institution, to help our outstanding faculty achieve their dreams and aspirations for fulfilling their research goals and to help our clinicians and physician scientists translate that information into cancer care. There is no question that USC can be the destination of choice for cancer care in the United States.

The Weekly NEWSMAKERS

A Dec. 5 broadcast on NPR’s Morning Edition interviewed **Warren Garner**, associate professor of surgery at the Keck School and head of the burn unit at Los Angeles County+USC Medical Center, about burns to children resulting from instant cups of soup. “I don’t have them in my house,” Garner said. “I would say that we see at least two to three patients a week who’ve been injured by these products.” The story was picked up by *The Boston Globe*, *San Francisco Chronicle* and FairWarning.

A Nov. 30 story in *USA Today* quoted **Sheryl Lewin**, assistant clinical professor of plastic and reconstructive surgery at the Keck School and director of microtia reconstruction at Children’s Hospital Los Angeles, who reconstructed the ears of a deaf 7-year-old girl born with only one ear. The girl wrote a letter to Santa asking for another ear, and her request was passed on to Lewin by the U.S. Postal Service’s Operation Santa program.

A Nov. 30 broadcast on KPCC-FM’s Patt Morrison show interviewed **Grace Aldrovandi**, associate professor of pediatrics at the Keck School and member of the USC Institute for Emerging Pathogens and Immune Diseases, about HIV/AIDS. “HIV is really growing in a group that traditionally doesn’t seek health care, and that’s young men and

young men who have sex with other men. Unlike women, who access medical care for their reproductive health, men don’t go and see doctors. You get the infection and you feel fine, so there aren’t the opportunities to get tested.”

A Nov. 17 story on ABC’s *World News with Diane Sawyer* quoted **Robertson Parkman**, professor of pediatrics, molecular microbiology and immunology at the Keck School, about a California research company’s decision to drop the world’s first clinical trial using human embryonic stem cells. “Without seeing the data, one cannot be certain that there was not a clinical reason for stopping the trial,” Parkman said.

A Nov. 16 story on ABC News quoted **Mitchell Gross**, associate professor of medicine at the Keck School and research director of the USC Norris Westside Cancer Center and the Center for Applied Molecular Medicine, about a drug that appears to delay the spread of prostate cancer to the bone. “This is certainly another step in the right direction,” Gross said. “They were successful that the medicine delays development of the bone metastatic spread, but they didn’t show it actually makes them live longer, so that’s certainly a problem in some regards.”



USC NORRIS PATIENTS GET THE ROYAL TREATMENT—Stephen B. Gruber, director of the USC Norris Comprehensive Cancer Center, and Julie Croner, executive administrator of USC Norris Cancer Hospital, met with the Pasadena Tournament of Roses Royal Court on Dec. 2, as members of the court toured the cancer center and chatted with patients. Above, Rose Princess Sarah Nicole Zuno affixes a red rose emblem to a patient's shirt. Right (from left), are Zuno, Hanan Bulto Worku, Morgan Eliza Devaud, Gruber, Drew Helen Washington, Croner, Kimberly Victoria Ostiller, Cynthia Megan Louie and Stephanie Grace Hynes.



Alison Trinidad

USC Institute of Urology adds new prostate cancer detection technology

By Leslie Ridgeway
Detection of prostate cancer just became more accurate at the USC Institute of Urology, thanks to the addition of new technology, some of the first available in the United States. The institute offers the new prostate biopsy and treatment capabilities at its two prostate biopsy clinics located at USC Norris Cancer Hospital and the Doctors of USC Beverly Hills, at 9033 Wilshire Blvd. The institute recently acquired a new generation machine with state-of-the-art ultrasound imaging capabili-

ties, including real-time tissue elastography and virtual sonography. These will enable three- and four-dimensional views of the prostate. “Cutting-edge ultrasonography is an important tool in the detection of prostate cancer,” said Inderbir S. Gill, director of the USC Institute of Urology and professor at the Keck School of Medicine of USC. “This new tissue elastography software brings high-precision biopsy mapping to another level. We know that many cancers are of a different consistency than surrounding tissue,

and this software enhances our chances of accurately locating them.” Prostate cancer, the most common non-skin cancer in men, affects one in six men in the United States. According to the American Cancer Society, more than 240,000 men will be diagnosed with prostate cancer in 2011, and more than 33,000 men will die from prostate cancer. More than 2 million American men are estimated to be living with the disease. The new machine and software further enhance cur-

rently available technologies. “This innovative technology should allow us to achieve more accurate three-dimensional mapping and targeting of cancer,” said Osamu Ukimura, professor of urology and director of image-guided and focal therapies at the Keck School of Medicine. “This should enhance our capabilities for more appropriate selection of patients for active surveillance or targeted focal therapy of prostate cancer.” Prostate cancer is typically discovered through a physical examination and blood test to detect prostate-specific antigen (PSA). The next step often includes magnetic resonance imaging (MRI) and transrectal

ultrasound (TRUS) imaging. “With no one perfect imaging modality available, we can now integrate MRI, TRUS, elastography and sonography to significantly improve our chances of cancer detection,” said Ukimura. David Agus, director of the USC Norris Westside Cancer Center, co-located in Beverly Hills with the USC Institute of Urology, said, “Such high-precision integration is important for decision-making for active surveillance and focal therapy.” Agus added, “These two treatment options require re-biopsying the cancer lesion over time. The precise 3-D cancer mapping that these modalities offer helps us track it down and fight it.”

Calendar of Events

This Calendar of Events is also online at www.usc.edu/hscalendar for the Health Sciences Campus community

Monday, Dec. 12

8:30 a.m. – 3 p.m. The Edmond G. “Pat” Brown Institute of Public Affairs’ Health Policy Outreach Center Summit. “eHealth: Impact, Policy, Reality,” Various speakers, including George Tolomiczenko, administrative director of HTE@USC. Cal State Los Angeles. Info: (323) 344-8787

Tuesday, Dec. 13

8:15 a.m. Pathology and Laboratory Medicine Grand Rounds. “Mycoses: Challenges in Anatomic & Clinical Pathology,” Gary Procop, Cleveland Clinic. NOR 7409. Info: (323) 442-1180

11 a.m. Keck Hospital Guild of USC Speaker Series and Luncheon. “Why the Surge in Diabetes?” Elizabeth Beale, USC. DEI 3rd Floor Auditorium. Luncheon at noon: \$30. Info: (323) 254-0600

Wednesday, Dec. 14

8:30 a.m. – 10 a.m. Women in Management Information Session. “2012-2013 Higher Education Resource Services Institutes Information Session. The HERS Leadership Institutes are open to all mid to senior level, “benefits-eligible” faculty and administrative women who meet the criteria listed on the application. CHP 102. Info: (213) 740-6373

Friday, Dec. 16

8 a.m. Pathology and Laboratory Medicine Grand Rounds. “Vitamin D: An Update,” Hossein Sadrzadeh, Cedars-Sinai. NOR 7409. Info: (323) 442-1180

Noon. Center for Applied Molecular Medicine. “The Physical Biology of Circulating Tumor Cells and Thrombosis,” Owen McCarty, Oregon Health & Science University. CSC 250. Info: (310) 272-7640

Notice: Deadline for calendar submission is 4 p.m. Monday to be considered for that week’s issue—although three weeks’ advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to *The Weekly*, KAM 400 or fax to (323) 442-2832, or email to eblaauw@usc.edu. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number for information.

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