

Dr. Matthew Cooperberg, Dr. Peter Carroll and Dr. June Chan.



Transforming the Decision Process for Prostate Cancer Treatment

Department of Defense Grant Funds Wide-Ranging Project

The Department of Urology has completed the first phase of a \$9.45 million, three-year grant from the Department of Defense (DoD) designed to transform how men make treatment decisions after a diagnosis of prostate cancer. The multicenter project will develop a comprehensive, personalized model for predicting which tumors pose a serious health threat. That information will then be presented to men through user-friendly information technology, based on a secure website with live support from genetic counselors. **Peter Carroll, MD, MPH, June Chan, ScD, and Matthew Cooperberg, MD, MPH,** are leading the project.

Clinicians agree that not all prostate cancer needs to be aggressively treated, and that many men can be safely followed for years with active surveillance. UCSF has one of the world's largest experiences with surveillance for early stage prostate cancer. However, in as many as 30 percent of cases, the cancer may turn out to be more aggressive than it appears

at the time of diagnosis. This limits the number of men and their physicians who feel comfortable choosing active surveillance. As a result, many men undergo unnecessary surgery, radiation, and other treatments, which, too often are associated with unnecessary costs and side effects of treatment.

UCSF researchers are in the process of developing an improved statistical prediction model by retrospectively analyzing prostate cancer biopsy specimens collected from 700 men previously treated at UCSF. The research team is looking at ways to predict aggressive disease by examining the interplay of tumor characteristics, germline genetics, the cancer of the prostate risk assessment (CAPRA) score, and lifestyle factors, such as smoking and body mass index (BMI). Once that study is completed, researchers will validate the new prediction model at several other sites participating in the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) prostate cancer registry.

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Chair's Letter



At UCSF, one of our important responsibilities is to seek answers to “big” questions that will advance the field of urology and in many cases, healthcare in general. Although we cannot highlight all of our research in a single newsletter, this issue of *UCSF Urology* tries to give a sense of the breadth of our inquiries, such as how to help veterans suffering from sexual symptoms of post-traumatic stress disorder, identifying key mechanisms that drive cancers, an innovative study designed to preserve fertility in young boys undergoing potentially sterilizing treatments, and the role of heavy metals in kidney stone formation. Prostate cancer remains a major focus of our work at UCSF, and we are pleased to provide a progress report on a major Department of Defense grant that seeks to transform how men make treatment decisions about this common disease.

Overall, the department continues to flourish, ranking as one of the nation's very best in urology as assessed by U.S. *News & World Report* (6th). Recently released rankings of National Institutes of Health (NIH) biomedical research support show that UCSF for the first time holds the number one position in funding for urology. Department investigators received a total of \$5.2 million in NIH research funding in 2014.

Several of the UCSF urology programs relocated in January to our new Mission Bay campus, including urologic oncology, male reproductive health and pediatric urology. The new campus promises to transform the way UCSF advances cancer discoveries, translates them into next-generation therapies, and delivers them efficiently and effectively to patients. With our world-class faculty in this world-class facility, just imagine what we'll be able to do.

This year saw the retirement of Dr. Jack McAninch, long-time chief of urology at San Francisco General Hospital (SFGH) and an internationally lauded pioneer in male urological reconstructive techniques. Dr. McAninch is an important role model and mentor to many in the field of urology. He shaped my career and remains an important source of advice and inspiration. His successor, Benjamin Breyer, will continue his tradition of excellence as the SFGH program moves to a replacement hospital in 2015.

I want to take this opportunity to thank the many faculty, staff, and trainees who all contribute to our efforts. The generosity of advocates has helped us invest in our missions of discovery, care and education. Their support provides resources vitally necessary to drive our very productive research efforts. I also want to thank the campus' extraordinary leadership, who are advocates for the department. We simply would not be where we are today without the broad and tireless support we enjoy.

Sincerely,

Peter R. Carroll, MD, MPH
Professor and Chair of Urology
Ken and Donna Derr-Chevron Distinguished Professor

Asking
the right
questions



For regular updates on patient care, education and research in urology, visit us at urology.ucsf.edu. Our site receives visitors from around the world seeking resources on urologic conditions. In 2014, our design and ease-of-use was honored by our peers at UCSF as an outstanding

example of what can be achieved using the Drupal open-source software platform.

urology.ucsf.edu

Transforming the Decision Process... *continued*

As the first part of the DoD funded initiative is moving forward, other researchers are developing the information technology tools that will let men easily use the new prediction model. The UCSF team is drawing on the expertise of co-investigator **Jeffrey Belkora, PhD**, a UCSF faculty member and director of Decision Services with the UCSF Helen Diller Family Comprehensive Cancer Center. Belkora has developed similar decision support tools for women with breast cancer. Pilot studies of the technology are taking place at UCSF, and will also open at the UCSF-affiliated San Francisco VA Medical Center, and San Francisco General Hospital and Trauma Center. Decision support tools will then be evaluated in a clinical trial at five clinical practice sites around the United States. Researchers will track whether more men end up



Jeffrey Belkora, PhD. and Stan Rosenfeld, Patient Advocate and Chair, Patient Services Committee.

choosing active surveillance with the improved decision tools and how they feel about their decision choice. Combining a new, more accurate risk prediction tool with a decision aid which better transmits such information to patients could have a profound,

beneficial impact on the field of prostate cancer care by allowing tens of thousands of men each year to confidently avoid unnecessary treatment. **U**

The division of pediatric urology, under the direction of **Laurence Baskin, MD**, continues its tradition of providing excellent care to young patients at UCSF Benioff Children's Hospitals in San Francisco and Oakland. The pediatric urology team offers comprehensive treatment for a spectrum of conditions, from common problems such as bedwetting to rare disorders of sexual differentiation.

The division also conducts epidemiological and basic science research on a range of fronts, including antibiotic use in preventing recurrent urinary tract infections, the effect of environmental exposures on prenatal genital development, and the genetics underlying genital anomalies such as hypospadias. For more information, visit <http://urology.ucsf.edu/patient-care/children>

Pediatric Urology





UCSF Urology Teams Move to Mission Bay

With the February 2015 opening of the UCSF Medical Center at Mission Bay, many of our urology programs have a new home. Three state-of-the-art facilities opened at the new campus: the UCSF Bakar Cancer Hospital, UCSF Benioff Children's Hospital San Francisco, and the

The new hospitals will enable urology's clinical and research programs to foster closer partnerships.

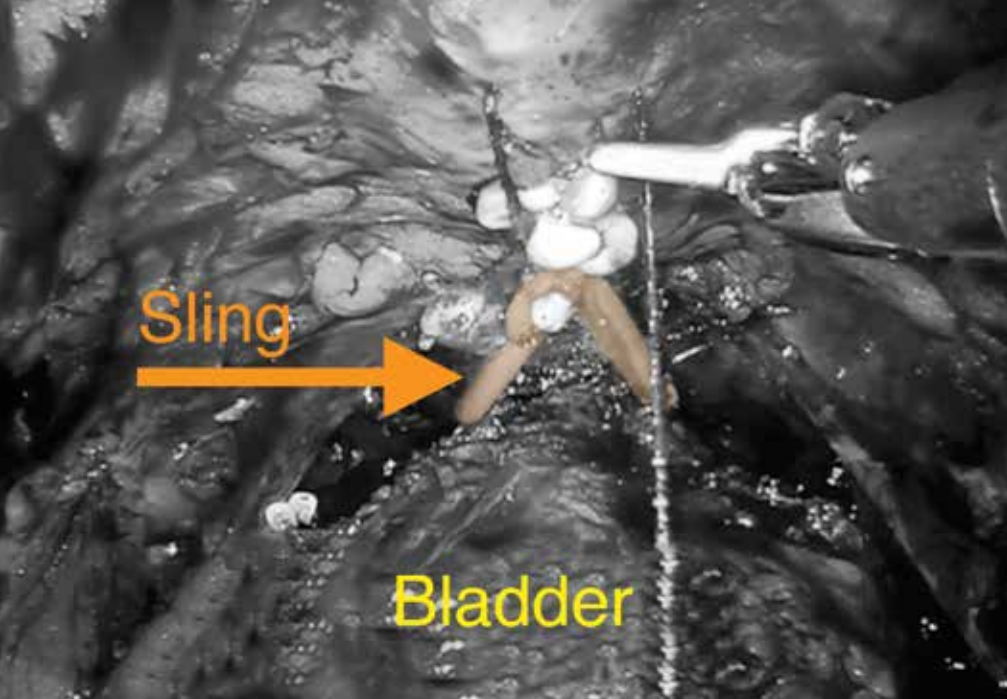
While care for urologic cancer patients and pediatric urology patients will be provided at the new Mission Bay hospitals, urology

“With basic science and clinical care co-located at Mission Bay, UCSF will be in a great position to push translational medicine to a new level.”

Peter R. Carroll, MD, MPH

UCSF Betty Irene Moore Women's Hospital. The cancer and children's facilities will house new urology outpatient clinics (at the UCSF Ron Conway Family Gateway Medical Building) and inpatient surgical suites for adult and pediatric urologic oncology and pediatric urology patients. These clinical facilities enrich the vibrant urology research community that has grown on the Mission Bay campus over the past decade.

facilities at San Francisco General Hospital and Trauma Center and at the Parnassus campus will continue to serve patients. To better access the new facilities, several departmental offices have relocated to the Mission Bay campus, including pediatric urology, urologic oncology, male reproductive health, the clinical trials office, administrative support, and residency coordination. **U**



Randomized Study Examines Procedure to Improve Continence after Prostate Surgery

Urinary leakage is a common side effect after radical prostatectomy (removal of the prostate). While most men recover urinary control within 6-12 months of surgery, researchers have sought ways to increase the number of men who achieve continence and shorten the recovery time.

UCSF urologists recently completed enrolling men in a randomized study to evaluate the effectiveness of a vas deferens bladder sling in improving continence after robot-assisted laparoscopic radical prostatec-

tomy (RARP). RARP is the surgical approach used in the majority of prostate cancer surgeries today. The study, initiated by **Dr. Peter Carroll**, is one of very few randomized trials evaluating surgical techniques.

The sling procedure, which was developed at UCSF, uses the vas deferens (a tube that carries sperm from the testes to the prostate) to fashion a hammock-like support for the bladder neck. An earlier UCSF non-randomized study of the sling procedure showed favorable results.

Now UCSF investigators want to complete a “randomized” study to better assess its true benefit.

The 203 men who have been enrolled in the study were randomly assigned to receive or not receive the sling during their surgery. Safety data collected to date have not shown an increased risk of adverse side effects in those who received the sling. Researchers plan to evaluate the sling’s effectiveness in improving continence at three and six months after surgery. [U](#)





How Can We Improve Patient Communication



The UCSF practices are working hard to make more effective communication with patients a cornerstone of its world-class program. Urology already has some of the highest patient satisfaction ratings at UCSF Medical Center, but the goal is to fine-tune each patient's experience. This is part of a strategic plan to ensure that the quality of the patient experience stays high as the practice grows to meet demand.

Associate urology professor **Donna Deng, MD**, is training urology faculty and residents as part of a UCSF-wide effort to optimize professional interactions with patients. Deng models behavior from how to greet a patient to how to make sure a patient's question has been understood. Physicians hone their skills by participating in lectures and video demonstrations, but there is also plenty of real-time practice and constructive feedback.

Urology practice managers **Melinda Simpson** and **Reuben Au Yeung** have been working with clinic staff on ways to improve communication and the overall patient experience. The changes were first implemented

by Simpson's predecessor, Christy Carley, who interviewed more than 40 patients seen at the Parnassus clinics to find out how staff could make their visits as smooth as possible.

Patients understand that a practice with UCSF's prominent reputation is in high demand, which can make for occasional delays in service. A wait-time board is now updated regularly so patients know if their doctor is running behind and how long the wait is expected to be. The practice has also revamped scheduling templates and added physicians to its busiest clinics.

At the Helen Diller Comprehensive Cancer Center at UCSF Mount Zion, the urology clinics overseen by Au Yeung channel appointments through a nurse navigator who helps triage patients by specific need and expedite their care. This includes offering same-day appointments, when necessary. Au Yeung says the practice also makes sure that patients have the direct line for their doctor's practice assistant, so they don't need to negotiate a phone tree to speak with someone.

UCSF's electronic medical records system (MyChart) is also designed to streamline communication by allowing patients to email non-urgent questions to their physicians and to view laboratory and test results.

UCSF conducts regular patient surveys, coordinated by an outside agency, as required for hospital accreditation, but feedback from those surveys can take a long time to reach the clinic staff. For more immediate information, all urology practices give patients a brief comment card at the end of their visit.

The concierge model of care, in which each patient's individual needs are addressed in a specific way, is increasingly popular in medicine, and that's the feeling the practices want to emulate.

"We want to make every patient feel like a VIP," said Simpson. **U**

What Controls Cancer Cell Growth?



Robert Blleloch, MD, PhD

Basic scientists within the department of urology are working at the cellular level to explore malignant and benign urologic disease. Their contributions provide the data that fuel new treatment approaches.

Davide Ruggero, PhD, has described a novel role for how an important gene, *Myc*, causes cancer. *Myc* is an oncogene that leads to prostate cancer by increasing the biosynthetic capacity of cells. Importantly, the *Myc* oncogene counteracts the response to many target therapies and finding a way to inhibit *Myc*'s function is vital for curing cancer. Ruggero's team uncovered the mechanism by which the *Myc* oncogene coordinates the production of proteins and nucleic acids in cancer cells through a single enzyme known as PRPS2. This enzyme drives growth and the metabolic ability of cancer cells to initiate and sustain tumor development. Importantly, PRPS2 represents a novel potential therapeutic target for many tumors driven by the *Myc* oncogene, which to date, has been "undruggable".

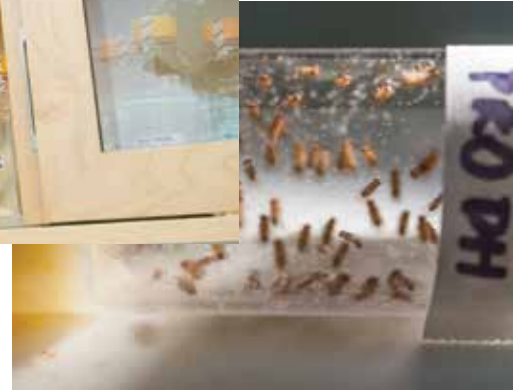
Robert Blleloch, MD, PhD. Other scientists are exploring the role of many small "noncoding" strands of RNA in cancer. These microRNAs (miRNAs) do not perform the traditional task of regulating mRNA translation (the production of proteins), but nonetheless appear to help control cell growth.

- **Robert Blleloch, MD, PhD**, investigated how miRNA might help predict which men are good candidates for active surveillance of prostate cancer. He examined tumors in patients who appeared to be low-risk and eligible for active surveillance, but who nonetheless chose surgery. He found that in a third of patients, post-surgical pathology showed their tumors were more advanced than expected from presurgical biopsy. Presurgical serum levels of several miRNAs were elevated, and thus might be useful markers in identifying slightly higher-risk patients. The data suggest that measuring serum miRNAs might help men decide whether to choose active surveillance for prostate cancer.
- **Rajvir Dahiya, PhD**, has identified several miRNAs that appear to play important roles in prostate cancer. The growth of two of these miRNAs are suppressed in aggressive tumors, and the other is overexpressed. All offer potential therapeutic targets. Dahiya has also explored how an estrogen-like component in soy, known to have antitumor activity, lowers expression of another type of RNA (long non-coding RNA). This RNA is associated with prostate cancer tumor growth and appears to increase expression of tumor-suppressor miRNA. In addition, he has studied an miRNA that acts as a tumor suppressor in bladder cancer.
- **Long-Cheng Li, MD**, another researcher working to better understand small RNAs, authored an overview article on various theories for why castration-resistant prostate cancers stop responding to androgen deprivation. In addition, his team has identified a potentially new mechanism for how small RNAs including microRNAs could fuel the growth of tumor cells by working in the nucleus to boost the expression of oncogenes (genes that have the potential to cause cancer).
- **Pamela Paris, PhD**, published work demonstrating that a DNA-based biomarker panel could be an effective predictor for both European-American and African-American men diagnosed with localized prostate cancer who may benefit from immediate aggressive therapy after prostatectomy. Recently awarded a DoD Health Disparity Award, along with Henry Ford, to validate and build upon their DNA-based biomarker findings for aggressive prostate cancer in African Americans.

She has an active bladder cancer biomarker program aimed at improving the management of bladder cancer patients. Using a simple blood draw, her lab has established methods to sequence circulating tumor cells from patients with metastatic bladder cancer with the goal of finding actionable mutations for individualized care. [U](#)



Davide Ruggero, PhD



Does Zinc Affect Kidney Stone Formation?

UCSF urologist **Thomas Chi, MD**, and researchers at Children's Hospital Oakland Research Institute (CHORI) have conducted a small study that offers support for a new theory that levels of zinc in the body may contribute to kidney stone formation.

The CHORI group has expertise in studying heavy metals, such as lead, in children. They were interested in finding a biomarker to easily track zinc levels because children deficient in this mineral can have impaired immune function, an important issue in global nutrition. Chi brought a different perspective to the research project. He has worked extensively in a fruit fly model of kidney stones, which suggests that zinc is important in stone formation.

"We saw an opportunity to combine our research interests in this study, even though we were interested in different aspects of zinc's impact on health," said Chi.

The fruit fly (*Drosophila melanogaster*) produces stones similar to those found in humans in its kidney tubule equivalent, and has proven to be an excellent model for exploring risk

factors for stones in humans. When zinc was discovered in fruit fly stones, the researchers decided to look in humans to explore the interplay of this metal with oxalate, calcium and other minerals that compose kidney stones.

"The idea made sense, because our most recent research demonstrates that zinc is important for the mineralization and calcification processes that lead to urinary stones," said Chi.

Chi incorporated his research interests and expertise into a CHORI study designed to look for a biomarker for zinc levels in healthy adult volunteers. In addition to looking at serum zinc levels and a number of other blood biomarkers, he obtained 24-hour urine collections on 11 subjects as their zinc levels were depleted. The data showed that changes in oxalate levels in the urine (a known risk factor for kidney stones) tracked well with dietary zinc intake: as zinc dropped, urinary oxalate increased.

"The finding is intriguing because most kidney stones are composed of calcium bound with oxalate," said

Chi. "Lower levels of oxalate could theoretically reduce stone formation."

Kidney stones affect up to 12 percent of Americans and result in significant medical costs each year. People prone to developing them often have repeated bouts of stone disease. Eventually, says Chi, this research might lead to a way to prevent recurrent stones in high-risk individuals by modifying diet or targeting therapies to modify zinc levels in the kidney, reducing levels of the urinary oxalate that binds with calcium to form stones.

Chi's work is supported by a \$500,000, two-year NIH grant to UCSF that funds research at the molecular level to determine how metals interact with cellular components to form urinary stones. Marshall Stoller, MD, serves as program director for the grant, and Chi is associate director. Other scientists involved in the project include UCSF adjunct faculty Pankaj Kapahi, PhD, and Arnold Kahn, PhD, MS, of the Buck Institute for Research on Aging, and David Killilea, PhD, of the CHORI Center for Nutrition and Metabolism. [U](#)



How Can Studying Urologic Trends Help Veterans?

PTSD Increases Risk for Sexual and Urinary Problems

Post-traumatic stress disorder (PTSD) is categorized as a mental health problem, but it can also produce a range of physical symptoms. UCSF urologist **Benjamin Breyer, MD**, and his colleagues team have found that in Iraq and Afghanistan war veterans, these physical effects can include sexual dysfunction and, to a lesser extent, urinary tract symptoms.

“Sexual and urinary problems remain stigmatized issues in our society, so they haven’t been well studied,” said Breyer. “Addressing these issues can significantly improve a patient’s quality of life.”

PTSD and sexual dysfunction

Prior investigations by other researchers had found an association with trauma-related mental illness, including PTSD, and sexual difficulties, but Breyer’s is the largest study of this kind to date. Breyer and colleagues, which included PTSD experts **Karen Seal, MD**, **Raymond Rosen, PhD**, and **Thomas Neylan, MD**, conducted a retrospective record review of 406,275 male Iraq and Afghanistan veterans who received health care through the Department of Veterans Affairs from 2001 to 2009. Over half of the vet-

erans from these deployments who have enrolled for VA healthcare have received mental health diagnoses, with PTSD being the most common.

Breyer’s study found that 10 percent of veterans with PTSD were diagnosed with sexual dysfunction and/or prescribed medications for sexual dysfunction, compared to 7 percent of those having a non-PTSD mental health diagnosis and 2 percent of veterans with no mental health diagnosis. Although psychiatric medications often contribute to erectile dysfunction or lowered libido, Breyer found that the risk of sexual problems was increased in this study even in the mental health population that was not taking psychiatric medications.

“When we looked at the data and factored out other conditions that could contribute to sexual difficulties, such as medical and substance abuse problems, we found that PTSD resulted in a three-fold increase in a veteran’s risk for sexual problems,” said Breyer.

Urinary tract symptoms and mental health

Breyer’s team also performed a similar, retrospective VA-based study of 519,000 Iraq/Afghanistan veterans that looked at the association between lower urinary tract

symptoms (LUTS) and mental health disorders and medication use. LUTS includes problems such as frequent or painful urination, all of which can significantly impair a person’s quality of life.

Although not as prevalent in the veterans as sexual problems, LUTS occurred in about 2 percent of the male veterans in this sample, and veterans with a mental health diagnosis and/or a prescription for opioids were more likely to have LUTS. The association was somewhat stronger for PTSD than other mental health diagnoses.

“If providers are aware of this association, they may be better able to detect and treat LUTS, which can have a positive effect on a patient’s quality of life,” said Breyer.

The VA study builds on previous medical literature reviews conducted by Breyer and his colleagues that found a relationship between LUTS and depression in a broad population of men, and in another project led by Breyer with an analysis by UCSF epidemiologist **Stacey A. Kenfield, ScD**, of depression, suicidal thoughts and LUTS in men who completed the CDC’s National Health and Nutrition Examination Survey. [U](#)

Working to improve care

To better understand the findings from the VA studies, Breyer will be analyzing a prospective PTSD registry to look at patient-reported outcomes and not just medical records.

As the connection between sexual and urinary dysfunction and mental illness is explored, more training and collaboration may be vital between urologists, psychiatrists, and primary care physicians, according to Breyer.

“Will patients with severe urinary or sexual dysfunction benefit from mental illness screening? That’s an important question we hope to answer in the future,” said Breyer.



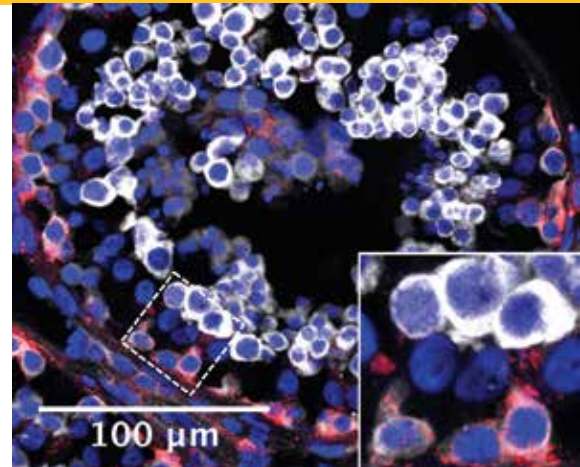
Fertility Preservation in Boys

UCSF has launched a study that will offer the potential to preserve fertility in boys undergoing sterilizing medical and surgical therapy for cancer or other conditions. The study, led by **James Smith, MD, MS** director of male reproductive health, is open to boys receiving care at the UCSF Benioff Children's Hospitals, Oakland and San Francisco.

A small amount of testicular tissue will be removed at the same time boys undergo tests or treatments for their medical condition, such as a bone marrow biopsy or central line placement. This tissue will be frozen and banked for future use. A portion of this tissue will be used to develop the ability to turn sperm stem cells into viable sperm. The study team is also developing ways to transplant the cells back into the patient to

restore natural sperm production after their treatment. Techniques for doing this have been used successfully in animals but not yet in humans. Smith is working with **Nam Tran, MD, PhD**, of the UCSF Department of Obstetrics, Gynecology and Reproductive Sciences, to develop this technical expertise.

For many years, the laboratory at the UCSF Center for Reproductive Health has successfully frozen sperm from adult men before they undergo potentially sterilizing medical and surgical treatments. The ability to father children after treatment is a key measure of quality of life for many patients. "It's our hope that in the future we will be able to give all of these boys the chance to be fathers, just as we do now for adult men," said Smith.



Courtesy of Pamela L Yango from the Tran Lab

The researchers hope to enroll 200 patients during the pilot phase of the study at the UCSF Benioff Children's Hospitals, Oakland and San Francisco. For more information, contact the Male Reproductive Health research coordinator at 415/885-7327. [U](#)

UCSF Urologists Develop Kegel App

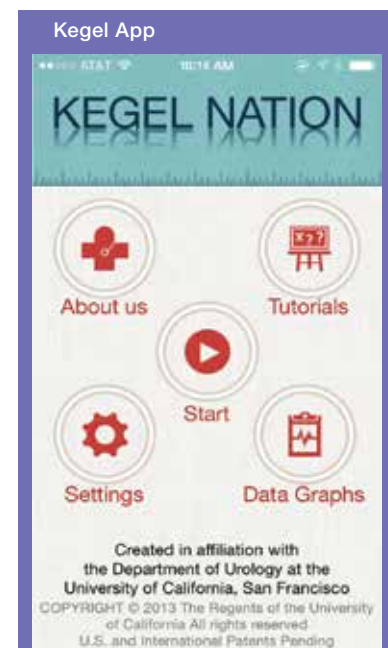
Smartphone-based applications are an increasingly popular tool for tracking health. UCSF urologists **Peter Carroll** and **Maurice Garcia** recently developed an app (Kegel Nation) that can help monitor the frequency, progress and quality of a Kegel exercise regimen in both men and women. Kegel exercises, in which the patient contracts and then relaxes the pelvic floor muscles for as many seconds as possible, have for decades been recommended to help women regain urinary continence after childbirth. Urologists also recommend these exercises to help men regain optimal bladder continence and sexual function after prostate cancer surgery.

The UCSF app is not the first to be developed for Kegel exercises, but it incorporates some unique features. It allows patients to measure the duration of the pelvic muscle con-

traction and relaxation by touching the phone's screen during each exercise phase. The app then archives and charts the measured times with a time and date stamp. Patients can also use the app to track other key indicators of bladder function recovery, such as urinary urgency and incontinence episodes, pad use, and voiding events. A key feature is the ability to connect the app wirelessly to a database on a secure server, allowing physicians to monitor their patients' progress and provide customized feedback. The database will also let physicians access the stored information for research purposes.

Preliminary testing of the app in healthy individuals showed that it is easy to use and that users were comfortable with the concept of employing an app for this purpose. The investigators plan to test the app's usefulness in a wider popula-

tion through a clinical trial. They also plan to develop a related app to track urinary tract symptoms and medication compliance in men who have undergone radiation therapy for prostate cancer. [U](#)





Meng named Chief of Urologic Oncology

Professor **Maxwell V. Meng, MD**, has been named chief of urologic oncology for the department of urology—a position that oversees UCSF's highly regarded treatment and research programs in prostate, kidney, bladder, testicular and other urologic cancers. The internationally recognized practice attracts patients from all over the globe and accounts for approximately 20 percent of all

new patients seen at the UCSF Helen Diller Family Comprehensive Cancer Center. Here, patients can take advantage of the most advanced diagnostic and treatment options for all types of genitourinary cancer.

In his new role, Meng will oversee strategic planning; educational programs for students, residents and fellows; clinical and basic research

program assessment; and patient safety and quality of care. Meng has been an active member of the faculty since 2003, caring for patients at the UCSF Helen Diller Family Comprehensive Cancer Center, the Veterans Administration Hospital, and San Francisco General Hospital. Since 2007, he has also directed the UCSF urologic oncology fellowship program. **U**

Breyer named Chief of Urology at SFGH




Benjamin Breyer, MD, MAS has been named chief of urology at San Francisco General Hospital (SFGH). A highly honored graduate of the University of Chicago Pritzker School of Medicine, Breyer completed his urology residency at UCSF, followed by a fellowship in complex male genitourinary reconstruction and trauma surgery under recently retired chief Dr. Jack McAninch. He also earned a master's of advanced studies (MAS) degree in clinical research at UCSF.

In addition to his role as chief of urology at SFGH, Breyer, who is an assistant professor of urology, will continue to direct the UCSF male genitourinary reconstruction and trauma surgery fellowship.

Breyer's clinical interests include complex urethral and penile reconstruction, male incontinence, male fistula, men's sexual health, lower urinary tract symptoms, benign prostate disease, and general urology.

He is expert in both minimally invasive and complex open reconstructive surgery.

The National Institutes of Health supports much of Breyer's research work, which includes projects on the epidemiology of sexual dysfunction and lower urinary tract symptoms, as well as genitourinary trauma and reconstruction. **U**



MRI-Ultrasound Fusion Adds Precision to Prostate Cancer Care

Urology Professor **Katsuto Shinohara, MD**, an internationally recognized expert on prostate imaging, championed UCSF's acquisition of an MRI-ultrasound fusion device that will allow UCSF urologists to more precisely diagnose and treat prostate cancer.

Transrectal ultrasound (TRUS) is the imaging tool urologists use during a prostate biopsy, but it provides much less anatomical detail than magnetic resonance imaging (MRI).

"Combining the two imaging methods enhances our ability to locate and precisely biopsy prostate cancers," says Shinohara.

The InVivo UroNav fusion biopsy system acquired by UCSF is the latest generation of these innovative machines. Shinohara envisions using the fusion system as a diagnostic tool in particular subgroups of patients. Those who may benefit from the fusion system include:

- Men who have a rising PSA after previously negative ultrasound-guided biopsies. The MRI/US fusion device lets physicians image the gland in detail and biopsy specific areas of interest.

- Men considering active surveillance for presumably low-risk cancer. The fusion device will better ensure that patients are not harboring higher-risk cancers by allowing the urologist to biopsy any areas that look suspicious on MRI. In addition, men on active surveillance may be better monitored using this technology.
- Men who have undergone previous radiation therapy and have a rising PSA. The fusion device can help doctors spot any local recurrences.
- Men with an elevated PSA who want to explore the use of imaging with MRI and/or novel serum markers before biopsy.

The MRI/US fusion system can also be used to deliver targeted cancer therapy. Shinohara's clinical research is centered on ways to treat small (focal) or recurrent prostate tumors with localized "focal" therapy that may reduce the risk of sexual or continence side effects. If a tumor is found with the fusion device, Shinohara and his colleagues may choose to treat these tumors with MRI/ultrasound-guided focal cryoablation (freezing of the tumor) or brachytherapy (radioactive seeds). **U**



Celebrating Jack McAninch



Professor **Jack McAninch** has logged thousands of miles in the corridors of San Francisco General Hospital (SFGH) since he became urology chief there in 1977. Although he officially retired after 36 years in July 2013, his friendly face can still be found at this county medical center, where he pioneered many male urological reconstructive techniques and where he continues to serve on a consulting basis as a mentor teacher for UCSF trainees.

Working primarily with residents and fellows, McAninch relishes the chance to share his decades of clinical and research experience. He also continues to conduct outcomes research. He created the SFGH-based genitourinary trauma database in 1977, which, with 4,000 cases, is now the largest of its kind in the world. This resource, along with the genitourinary reconstruction database he started in the 1980s, remains a valuable research tool.

A modest man who still speaks in the relaxed cadence of his native West Texas, McAninch has received honors large and small over the course of his career. He was the first urologist ever to receive the American College of Surgeons Distinguished Service Award (2012), and he has also been honored with the American Urological Association Ramon Guiteras Award (2009), the St. Paul's Medal of the British Association of Urological Surgeons (2008), and the Spence Medal of the American

Association of Genitourinary Surgeons (2005).

But McAninch has particularly relished his role as teacher. Since 1989 he has trained one fellow each year in male genitourinary trauma and reconstruction, sharing his expertise in the operating room at UCSF and SFGH. That's a total of 25 men and women who have since fanned out across the country, where they head academic programs of their own. He can recite a long list of major U.S. cities where former fellows are working.

"That is what I am most proud of, to have so many trainees in major institutions, where they are making significant contributions to the field of male reconstructive surgery and trauma," he said. "They are the ones really taking the field forward."

McAninch grew up on a small ranch and attended Texas Tech and the University of Idaho with the intention of getting a doctorate in animal husbandry. But he realized he was good at the basic science he was taking as part of his interest in animal nutrition, and he decided to apply to medical school, which he completed at the University of Texas Medical Branch at Galveston.

The field of genitourinary trauma and reconstruction was an obscure one when McAninch started his surgical

career, and few academic programs specialized in the field. But there was a clear need for this expertise. When McAninch started his urology residency at Letterman Army Hospital in San Francisco in 1964, the hospital's patients included many Vietnam servicemen whose pelvic wounds required complex reconstructive techniques.

"Reconstruction is a very refined surgical procedure that is challenging, both in decision-making and technique," said McAninch. Trauma adds yet another dimension. "You aren't able to plan ahead. Sometimes what you find isn't what you'd planned on," said McAninch. "You have to ask yourself 'what's the next best step to take?'"

Helping residents and fellows learn how to climb that surgical decision tree is one of the things he most enjoys about teaching.

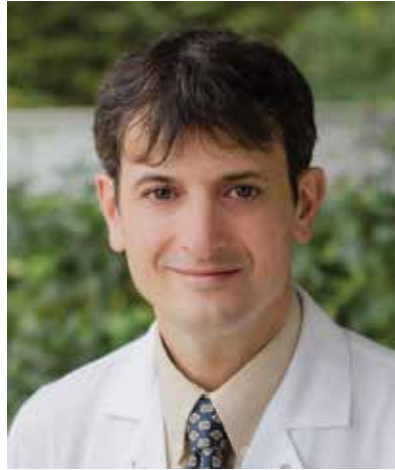
Interest in this surgical subspecialty continues to grow, said McAninch, perhaps because male genitourinary reconstruction remains open surgery, without the robotics and endoscopes that are so prominent in other arenas.

"It's all still scalpel and scissors and not likely to change anytime soon," said McAninch. **U**



Dr. McAninch was honored at a gala "family reunion" at the San Francisco Marine's Memorial Club, attended by 23 of the 25 fellows he has trained during his career. Held on March 28, 2014, the event was preceded by a day-long educational seminar. Dr. McAninch's legacy will continue with the Jack McAninch, MD Endowed Lectureship in Surgical Urology. Many thanks to his former fellows, colleagues, and friends for their generosity to establish this lasting tribute.

Two New Vice Chair Positions



Robert Blelloch, MD, PhD

Robert Blelloch, MD, PhD, Vice Chair for Basic Research.

Dr. Blelloch's microRNA research exemplifies the department's commitment to basic science and the pursuit of therapeutic purposes.



Kirsten L. Greene, MD, MS

Kirsten L. Greene, MD, MS was named **Vice Chair of Education** following her years long co-Chair position in support of retiring chair Jack McAninch, MD. Her keen sense for spotting young, bright aspiring urologists makes her appointment a key component to a thriving residency program.

New Appointees



Thomas Chi, MD

Thomas Chi, MD, earned his MD from UCSF completing his residency in urology and fellowship in Endourology and Laparoscopy. His research focuses on advancing the understanding of how kidney stones form new medical preventative interventions. His clinical interests include urinary stone disease specializing in the performance of endoscopic, laparoscopic, and percutaneous surgeries.



Nynikka Palmer, DrPH, MPH

Nynikka Palmer, DrPH, MPH earned a doctorate in public health from the University of Texas, Houston. This secondary appointment with urology allows her to further her work in cancer health disparities research. Here, she explores racial/ethnic disparities in prostate cancer, specifically examining treatment decision-making, patient-provider communication, quality of care, and health outcomes among minority and low-income patients.



Sima Porten, MD, MPH

Sima Porten, MD, MPH completed her residency here at UCSF serving her fellowship at MD Anderson Cancer Center in Texas. Her research interests focus mainly in the diagnosis and management of urothelial carcinoma (bladder and upper tract). Porten's clinical interests include the diagnosis and treatment of all genitourinary malignancy, including minimally invasive approaches to cancer treatment.



Nadia R. Roan, PhD

Nadia R. Roan, PhD, received her PhD from Harvard Medical School and conducted her postdoctoral training at the J. David Gladstone Institutes and UCSF. Her research has focused on studying the molecular interplay between viral and bacterial pathogens and their mammalian hosts. As Assistant Professor in the Department of Urology, she is continuing to study how microbial pathogens establish infection in the genital mucosa, and the effects of mucosal factors on immunity and reproductive health.



Anne Suskind, MD, MS

Anne Suskind, MD, MS completed residency at the University of Connecticut and fellowships at the University of Michigan: Neurourology & Pelvic Reconstructive Surgery and Health Services Research. Her research goals are to evaluate the effects of frailty on important long-term outcomes (including function and cognition) in patients undergoing urologic surgery with the overarching goal to ensure that patients have improved outcomes and quality of life as a result of surgical intervention. Her clinical focus is bladder management in patients with neurologic disorders and the treatment of complex urinary incontinence.



Erin L. Van Blarigan, ScD

Erin L. Van Blarigan, ScD earned her doctor of science in Epidemiology and Nutrition from the Harvard School of Public Health. Her research is focused on the role of nutrition and physical activity in cancer survivorship. As Assistant Professor of Epidemiology & Biostatistics; and Urology, she is currently expanding her expertise to include randomized controlled trials of lifestyle interventions among cancer survivors.

Awards and Accolades

The American Association of Genitourinary Surgeons awarded the coveted 2014 *Barringer Medal* to **Peter R. Carroll, MD, MPH**

Charles J Ryan, MD, Professor of Clinical Medicine and Urology, was awarded the *Thomas Perkins Distinguished Professorship in Cancer Research*.

Cynthia Mak, RN, won the prestigious *Excellence in Ambulatory Nursing Award for 2014*

Laurence S. Baskin, MD, was reappointed to the *Developmental and Reproductive Toxicant Identification Committee, (DART)* where he has served since 2012

A new *Visiting Professor program* was named in honor of **Emil A. Tanagho, MD**, Professor and Chair Emeritus of the Department of Urology

Matthew Cooperberg, MD, MPH, associate professor in the departments of urology and epidemiology & biostatistics, will hold the newly created *Helen Diller Family Chair in Urology*

Tom F. Lue, MD, ScD (Hon), FACS, received the *2013 Ferdinand C. Valentine Medal* from the New York Academy of Medicine for his contribution to the field of urology

Mack Roach III, MD, FAC, Professor of Radiation Oncology and Urology, named to *National Cancer Advisory Board*

Jack W. McAninch, MD, FAC, FRCS (HON) will be honored with an *Endowed Lectureship in Surgical Urology*

Jack W. McAninch, MD, FACS, FRCS (Hon) received the *College of Surgeons Distinguished Service Award*

Matthew R. Cooperberg, MD, MPH, was awarded the *2015 AUA Gold Cystoscope Award* for his highly successful and outstanding contributions as a clinician-scientist in prostate cancer and health services research, and as a key participant in the launch of the AUA Quality Registry

The *2014 AUA Distinguished Contribution Award* was presented to **Marshall L. Stoller, MD** for his outstanding contributions to the science and practice of urology

Laurence S. Baskin, MD, chief of pediatric urology and director of the pediatric urology fellowship program, was named *Hinman Professor in UCSF Pediatric Urology*

Anobel Y. Odisho, MD, MPH *Northern California Urological Resident Seminar* Awarded first place, Clinical Research, for presentation, "From Bench to Browser: Using Natural Language Processing and Active Learning to Bring Structure and Meaning to ClinicalTrials.gov" (2015)

Urology Care Foundation Research Scholar Award Awarded by the AUA Urology Care Foundation to investigate the impact of clinical and demographic factors on risk-adjusted outcomes for urologic cancer surgery across California. Inaugural Society of Urologic Oncology Award (2015)

Lindsay A. Hampson, MD *Northern California Urological Resident Seminar* shared second place, Clinical Research, for presentation, "Patient-Centered Treatment Decisions: Using Conjoint Analysis as an Aid for Shared Decision-Making for Urethral Stricture Treatment." (2015)



American Urological Association Poster Awards 2015

Lindsay A. Hampson, MD and **Anobel Y. Odisho, MD, MPH** shared best poster in the General and Epidemiological Trends, Socioeconomics, Practice Patterns, and Cost Effectiveness session at the American Urological Association annual meeting 2015 for, *Surgeon Variation in the Cost of Laparoscopic Nephrectomy*

BPH: A Visual Analog of the International Prostate Symptom Score is a More Accurate Tool in Assessing Lower Urinary Tract Symptoms in Men

Rachel E. Selekman, MD;
Catherine R. Harris, MD; **Pauline Filippou, BS;** **Thomas Chi, MD;** **Amjad Alwaal, MD;** **Sarah Blaschko, MD;** **Benjamin N. Breyer, MD, MAS**

General and Epidemiological Trends:
Surgeon Variation in the Cost of Laparoscopic Nephrectomy
Lindsay A Hampson, MD;
Anobel Y. Odisho, MD, MPH;
Maxwell V. Meng, MD; **Peter R. Carroll, MD, MPH**

Laurence S. Baskin, MD was elected to the *American Association of Genitourinary Surgeons*

The first *Peter R. Carroll Resident Mentorship Award*, 2015 went to **Maxwell V. Meng, MD**

Robert Blelloch, MD, PhD was inaugurated into the *American Society for Clinical Investigation*; the pre-eminent association for physician scientists

The Hellman Foundation Fellowship Award went to **Benjamin Breyer, MD, MAS** to "support the research of promising assistant professors who show capacity for great distinction in their chosen fields of endeavor."

Benjamin Breyer, MD, MAS was named *Director of the UCSF Male Genitourinary Reconstructive Fellowship*

Departing Chief Residents Leave Legacy of Awards

Containing health care costs while preserving quality care is a perennial concern for hospitals. During their time at UCSF, sixth-year residents Lindsay A. Hampson, MD, and Anobel Y. Odisho, MD, MPH, generated and received grant support for several innovative research projects that addressed cost issues. These included an examination of the cost and quality of selected surgical procedures, surgeon variation in the cost of laparoscopic nephrectomy, and reducing turnover times in the operating room. Their work was recognized at sectional and national meetings of the American Urological Association.





Your Gifts, Our Thanks

The incredible breadth and depth of the Department of Urology is only possible with your generosity and advocacy. Our mission is to offer the highest quality urologic cancer care, innovative research programs, and an outstanding education for future leaders in the field.

We will continue to work on your behalf in making strides but there is still much to be done. Your support and partnership is vital to our progress. With your generous investment in the Department of Urology we have been able to make strides on the following avenues of discovery:

“Dissecting the biology of abiraterone acetate through molecular interrogation of intracrine and endocrine androgen biosynthesis”

Androgen deprivation therapy (ADT) is the primary treatment for men with metastatic prostate cancer. However, nearly all men treated with ADT will eventually develop resistance to treatment; this is known as castration-resistant prostate cancer (CRPC). One of the key resistance mechanisms of CRPC is the continued production of androgen hormones that are essential for prostate cancer growth and development, in places such as the adrenal glands and sometimes the cancer cells themselves. CYP17 is the critical enzyme responsible for this process. Abiraterone acetate, also known as Zytiga, is an FDA-approved oral therapy that blocks CYP17. To further understanding of this process, donor funds supported **Won Kim, MD**, Assistant Clinical Professor in the Department of Medicine, Genitourinary Medical Oncology whose work aims to determine whether a patient's hormonal environment: 1) affects the clinical efficacy of abiraterone acetate; 2) and/or contributes to the development of eventual treatment-related resistance to abiraterone.

“Lifestyle, Guidelines, and eTools to Improve Prostate Cancer Survivorship”

Our University of California, San Francisco (UCSF) research group and others have shown in observational studies that lifestyle behaviors, including exercise, not smoking, and certain dietary factors, may reduce risk of prostate cancer progression. To date, these research findings have not been translated into user-friendly guidelines or tools to improve prostate cancer care. The Prostate 8 study led by **Stacey Kenfield, ScD**, Assistant Professor, Urology, builds upon this research to translate these findings to change patient behaviors. The funds from the UCSF Prostate Cancer Program Development Research Program cover the development and implementation of a multi-device intervention that includes a website, physical activity tracker and online exercise community, and text messaging, to help men with prostate cancer adopt healthy lifestyle behaviors. The randomized controlled trial will determine the acceptability and effect of the intervention on eight health behaviors and confidence in performing each behavior. Secondly, investigators will evaluate the effect of the intervention on markers of metabolic function, body composition, plasma antioxidant levels, activity levels via accelerometer, and health-related quality of life. This project aims to transform the standard of care for men diagnosed with prostate cancer by creating information and supportive tools that can be feasibly disseminated rapidly and widely.

“Dissecting the role of YB-1 in spatiotemporal control of protein synthesis driving prostate cancer cell migration and metastasis”

Prostate cancer metastasis is driven by the activities of specific proteins. However, the same proteins can perform different functions depending on their location within the cell. One highly effective way in which the cell regulates protein location, and therefore function, is by regulating the location in which the proteins are produced. This research is focused on studying when and where these proteins are produced, how this specificity is regulated by the cell, and how this affects metastasis of prostate cancer. We hope that elucidation of the mechanisms regulating the time and location of synthesis of proteins driving metastasis will lead to identification of potential therapeutic targets for aggressive prostate cancer.

With the philanthropic investment from donors like you, the Department of Urology continues to thrive and be an important resource for patients and their family members. Thank you for your unwavering commitment in supporting the very best urologic care, research, and education. **U**

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