

DEPARTMENT *of* UROLOGY

UPDATE



Growing List of Minimally Invasive Options for BPH

Transurethral resection of the prostate (TURP) has long been the mainstay of surgical treatment for benign prostatic hyperplasia (BPH), a common condition affecting older men in which the enlarged prostate produces bothersome urinary symptoms. But the last decade has seen the introduction of less invasive alternatives to TURP, with the potential for equal results.



Urologist using GreenLight photovaporization to treat enlarged prostate.

Photo courtesy of American Medical Systems

With TURP, the obstructing portion of the enlarged prostate tissue is carved out. Although effective, it requires hospitalization and catheterization and is associated with risks, including the need for a blood transfusion and, in rare cases, the potentially dangerous absorption of fluid.

BPH patients searching for minimally invasive surgical alternatives now have several options. Photovaporization of the prostate (PVP) uses laser energy to vaporize the obstructing prostate tissue, creating a channel in the urethra through which men can urinate more freely. Studies have shown that results

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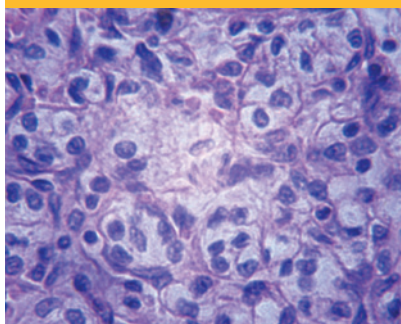


Frank Clark Urology Center



Clinical Trials Update

Discovering New Ways to Care



The UCLA Department of Urology is committed to ongoing research in a quest to develop new treatments and cures for all urologic conditions. Our team has been instrumental in making major breakthroughs in the areas of:

- Prostate cancer, prostatitis and BPH (benign prostatic hyperplasia)
- Kidney cancer and transplantation
- Male infertility and sexual dysfunction
- Pelvic medicine, incontinence and reconstructive surgery

KIDNEY CANCER

Sunitinib Treatment of Renal Adjuvant Cancer (S-TRAC): A Randomized Double-Blind Phase 3 Study of Adjuvant Sunitinib vs. Placebo in Subjects with High Risk RCC (IRB# 08-06-086)

• *Kidney Cancer*, PI: **Allan Pantuck, MD**; co-PIs: **Arie Belldegrun, MD**; **Fairooz Kabbinar, MD** — a study of a post-surgery therapy for patients with kidney cancer.

This study will look at the experimental use of sunitinib after surgery for patients with high risk of recurrence. Sunitinib is approved for advanced kidney cancer by the U.S. Food and Drug Administration (FDA). In kidney cancer patients, sunitinib has demonstrated the capability of shrinking and downsizing large kidney tumors. Patients will be on the study up to one year. They will be randomly assigned to either sunitinib or a placebo. To be eligible for this trial, subjects must have histologically confirmed preponderant clear cell renal cell carcinoma (RCC) and must have no evidence of macroscopic residual disease or metastatic disease. *(Pharmaceutical company: Pfizer)*

A Randomized Open-Label, Multicenter Phase II Study to Compare the Efficacy and Safety of RAD001 as First-Line Followed by Second-Line Sunitinib vs. Sunitinib as First-Line Followed by Second-Line RAD001 in the Treatment of Patients with Metastatic Renal Cell Carcinoma

• *Kidney Cancer*, PI: **Fairooz Kabbinar, MD**; co-PIs: **Arie Belldegrun, MD**; **Allan Pantuck, MD** — A study to test a new therapy regimen for treating kidney cancer.

The purpose is to compare the safety and efficacy (how well the drug works) of the study drug RAD001 given before sunitinib vs. taking sunitinib before the study drug, RAD001. The study investigates the order in which sunitinib and RAD001 are given to determine the most effective way to slow tumor growth. The study also investigates the harmful effects of both drugs to see which treatment schedule has fewer side effects for the patient.

The FDA has approved the use of RAD001 in patients with advanced RCC after failure of treatment with Sutent (sunitinib) or Nexavar (sorafenib). RAD001 is considered a study drug in this research protocol because the drug is not approved for use in this patient population as a first-line treatment.



Alumni Spotlight

Tomoaki Fujioka, MD, PhD

Dr. Fujioka believes that working with top professors at UCLA gave him an invaluable background in medicine. "I remain most grateful for the many kindnesses shown to me," he says. "I believe my experience at UCLA has made me what I am today."

Before graduating from Japan's Iwate Medical University School of Medicine, Dr. Fujioka came across the textbook *Genitourinary Cancer* and knew that he wanted to study urologic oncology at UCLA with one of the book's editors, Jean B. deKernion, MD. So, after finishing his residency at St. Luke's International Hospital in Tokyo, Dr. Fujioka made his way to the other side of the Pacific to spend a year as a research fellow in UCLA's Department of Urology, which Dr. deKernion chairs.

Dr. Fujioka participated in a variety of conferences and observed numerous unusual surgeries. "I was very fortunate to be a participant in Dr. deKernion's UCLA class," Dr. Fujioka says.

After leaving UCLA, Dr. Fujioka returned to his native Japan, where he continued his studies in immunotherapy, focusing on renal cell and urinary bladder cancers. He also conducted clinical research on combined therapies centering on cytokine and bacteria drugs, which are both over-the-counter products, and lymphokine-activated killer and tumor-infiltrating lymphocyte therapy.

He then began joint research on the gene expression analysis of urinary organ cancer with Yasuke Nakamura, MD, PhD, professor at the Institute of Medical Science at the University of Tokyo. Together, they have identified many new genes and, based on the expression profiles, have developed prediction systems for the response to chemotherapy for bladder cancer. This breakthrough has led to their starting clinical research on vaccinations for urinary bladder, kidney and prostate cancers by synthesizing peptides from specifically expressed genes. "Peptide vaccinations are a new and insightful therapy in the fight against cancer," Dr. Fujioka explains. "I am deeply committed to developing this research further."

Last April, Dr. Fujioka was honored as a chair at the 98th Annual Meeting of the Japanese Urological Association on the topic of ideal medical treatment. More than 5,000 researchers took part, with discussions ranging from oncology to urination function and female urology. Speakers came from all over the world, and the welcoming speech was delivered by Dr. deKernion at the request of Dr. Fujioka.

Donor Spotlight

The UCLA Department of Urology is fortunate to have the support of long-time donors and friends whose contributions have fueled successes and innovative discoveries in urologic disorders. With the help of its benefactors, the department continues to provide state-of-the-art care for patients and support for their families, as well as superb educational opportunities for young urologists.

Sheldon and Carol Appel have been donors to the Department of Urology since the early 1980s. A member of the department's Board of Advisors, Mr. Appel was one of the visionaries who, along with Joseph J. Kaufman, MD, conceived of the UCLA Frank Clark Urology Center.

Mr. Appel was among the first patients treated with the new, revolutionary lithotripter (a device used to pulverize and remove ureteral and renal stones) in Munich, Germany. Returning to Los Angeles, he convinced Dr. Kaufman, then chief of the Division of Urology, that UCLA should bring both the lithotripter

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Shaping the Future of Science, Medicine and Health

A. Eugene Washington, MD, MSc, an internationally renowned clinical investigator and health policy scholar whose wide-ranging research has been instrumental in shaping national health policy and practice guidelines, joined UCLA on February 1. He is vice chancellor, UCLA Health Sciences, dean of the David Geffen School of Medicine at UCLA and holder of the Gerald S. Levey, MD, Endowed Chair.

Dr. Washington came to UCLA after a long and distinguished career at the University of California, San Francisco (UCSF), where he had served since 2004 as executive vice chancellor, provost, and professor of gynecology, epidemiology and health policy.

It is Dr. Washington's belief that UCLA is uniquely positioned to shape the future of science, medicine and health. Because of the breadth and depth of the talent inherent in UCLA's faculty, clinicians, staff and students, he is confident that UCLA is poised to play a leadership role in improving human health. In addition, he points to the spirit of collegiality and cooperation that allows for collaboration across multiple disciplines. This component is not only critical in translating what is learned in the labs and at the patient's bedside, but also in developing and utilizing the most innovative technology and clinical advances.

Because UCLA, through its health sciences faculty, has a wealth of health policy knowledge, Dr. Washington is confident that it will be leading the way in implementing healthcare reform. Under the aegis of the new UCLA Innovates HealthCare Initiative, UCLA is already engaged in a diverse set of pilot programs to test pioneering medical techniques and to develop novel healthcare delivery models.

Patient's Quality of Life Soars After Surgery Offered Only at UCLA



Ja-Hong Kim, MD, performed the surgery that vastly improved one patient's quality of life.

Caudal neuromodulation is for patients with an overactive bladder, urinary retention and chronic pelvic pain who are unable to benefit from medications or the conventional neuromodulation approach.

Susan isn't sure exactly when or why she lost the ability to empty her bladder without a catheter.

The 50-something school teacher (who asked that her last name not be used) had experienced her share of health problems. In 1999, she had spine surgery to correct her scoliosis condition, and in 2001, she was diagnosed with breast cancer. She prepared for a bone scan to determine if the cancer had metastasized. Upon looking at the scan, the technician asked Susan if she had forgotten the instruction to urinate prior to the testing: her bladder was full. Susan had thought it was empty. It was the first indication that there was a problem.

She went to several urologists, and each told her the same thing: there was little that could be done for her urinary retention, and she would likely need to use a catheter to void for the rest of her life. "It was so shocking and

upsetting," she recalls. Two years ago, Susan learned about a relatively new procedure, neuromodulation, in which a specific sacral nerve known as S3 is stimulated with an implanted device. Susan was given the therapy on a trial basis, but it made no difference. Her slim hopes were dashed.

Late last year, she was referred to the UCLA Department of Urology for a variation on the neuromodulation procedure involving a bilateral approach — placing electrodes not just on S3 but on two leads in the caudal space to stimulate all of the nerves. The surgery, developed by Shlomo Raz, MD, head of the Division of Female Urology, Reconstructive Surgery and Urodynamics, was offered only at UCLA. Ja-Hong Kim, MD, who was trained in the surgery by Dr. Raz, told Susan she thought it could help. Susan received the caudal implant in January and now is able to urinate on her own.

Caudal neuromodulation is offered at UCLA for patients with an overactive bladder, urinary retention and chronic pelvic pain who are unable to benefit from medications or the conventional neuromodulation approach. "The sacral nerve that corresponds to number 3 is a branch root that innervates the bladder, and that is the one that is stimulated in the traditional implant," Dr. Kim explains. "But by placing the implant in the caudal epidural space using a bilateral approach, we gain access to all five nerves, and this increased programming capability can make an important difference."

It did for Susan. Within days after the implant, she was able to void on her own. She still uses a catheter before she goes to bed and when she wakes up, but during the day she no longer needs it. "It was so difficult for so many years," she says. "My quality of life is now greatly improved."

Donor Spotlight

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and one of its inventors, Dr. Christian Chaussey, to UCLA. Frank Clark, then a Regent of the University of California, realized the importance of this plan and collaborated with Mr. Appel to raise funds to build the Frank Clark Urology Center as a site for the new technology and a modern outpatient facility.

An enduring supporter of the UCLA Health Sciences, **John Lyddon** has been a member of the Board of Advisors since 2007 and continues to be a strong advocate for department activities. Funding from Mr. Lyddon has helped prostate cancer researchers develop new approaches for the treatment of advanced cases and improve diagnostic techniques to enable early detection and personalized care alternatives. Dr. Jean B. deKernion, chair of the department, and Drs. Arie Belldgrun and Allan Pantuck have benefited from Mr. Lyddon's generosity through their prostate cancer research activities.

Roy Doumani is a professor in the Department of Molecular and Medical Pharmacology at UCLA and a good friend of the Department of Urology. His relationship with the physicians and medical staff of the department stems from his diagnosis of advanced prostate cancer 20 years ago, and his subsequent surgery and continuing treatment for the disease at UCLA. Through the past two decades, Mr. Doumani has been a benefactor and valuable supporter of the department's research. As a UCLA graduate himself, Mr. Doumani is impressed that the majority of UCLA's philanthropy for healthcare and scientific research does not come from alumni, but from the Los Angeles community as a whole, and far beyond. He attributes this to the renowned excellence of the university's health facilities and the extraordinary research being conducted, and he is pleased to contribute however he can.

Kudos

William Aronson, MD, chief of urology at Olive View-UCLA Medical Center and chief of urologic oncology at the Veterans Administration Medical Center West Los Angeles, has had three publications this year on the potential role of lycopene and green tea intake and dietary fat reduction for the prevention and treatment of prostate cancer. **Ramdev Konijeti, MD**, chief resident in urology at UCLA, was the lead author on the article studying lycopene and prostate cancer.

Karim Chamie, MD, Society of Urologic Oncology fellow in urological health services research, recently learned that the National Cancer Institute (NCI) will fund two of his UCLA proposals to explore outcomes of bladder cancer care through its Surveillance, Epidemiology, and End Results program. The projects are "Patterns of Care in Patients with Bladder Cancer" and "Validation of a Bladder Cancer Surgery Coding Scheme." This award is in addition to continued funding from the National Institutes of Health (NIH) National Research Service Award and Loan Repayment Program, the American Cancer Society and the Jonsson Cancer Center Foundation.

Arnold I. Chin, MD, PhD, assistant professor of urology, received an American Association of Cancer Research Career Development Award for Translational Cancer Research for 2010–2012 to benefit his investigations in bladder cancer.

Nestor Fadrique Gonzalez-Cadavid, MD, adjunct professor of urology, director of the Urology Research Laboratory at LABioMed-Harbor-UCLA and professor of endocrinology, is the recipient of two grants from the NIH in support of "Bisphenol A Effects on the Peripheral Mechanisms of Penile Erection" and "Preclinical Proof of Concept for the Therapy of Diabetes-Related Critical Limb Ischemia with Muscle-Derived Stem Cells Combined with Nitric Oxide Donors." Dr. Gonzalez-Cadavid was also appointed editor-in-chief of the *International Journal of Impotence Research*, and he was made a permanent member of the International Academy of Medical Sexology.

UCLA Department of Urology Board of Advisors

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Mark S. Litwin, MD, MPH, professor of urology and public health, was honored with the Distinguished Mentor Award by the American Urological Association Foundation at its annual meeting in San Francisco last May. The award is given yearly to a member who provides an excellent research environment, shares wealth of knowledge and impeccable standards, and earns the respect and admiration of the entire urologic research community.

Robert Reiter, MD, MBA, professor of urology and molecular biology, co-director of the Prostate and Genitourinary Oncology Program in UCLA's Jonsson Comprehensive Cancer Center (JCCC) and Bing Chair in Urologic Research, was recently elected to the American Association for Genitourinary Surgeons. He also received a "Career Achievement Award" from the Urologic Oncology Branch of the NCI. **Corina Sarmiento, PhD**, a postdoctoral fellow in Dr. Reiter's lab, received a postdoctoral research award from the JCCC to study CD44 in prostate cancer epithelial-to-mesenchymal transition.

Matthew Rettig, MD, associate professor in the Department of Medicine's Division of Hematology-Oncology and the Department of Urology and medical director of the Prostate Cancer Program of the Institute of Urologic Oncology at UCLA, received the Prostate Cancer Foundation's Creativity Award. It provides \$300,000 in support of his research project, "A Nano-Structure Platform for Enhanced Detection of Circulating Tumor Cells in Prostate Cancer Patients" (see page 8).

“What is great about our program is that we are able to offer the most advanced and minimally invasive options for all our patients.”

— Robert Reiter, MD, MBA

continued from cover

for PVP are comparable to those of TURP, but with fewer side effects and risks. “There is very little blood loss, and because no veins are opened, fluid absorption isn’t an issue, so it can be done as an outpatient procedure,” explains Christopher Saigal, MD, MPH, associate professor of urology. Catheterization is needed only overnight if at all, Dr. Saigal adds.

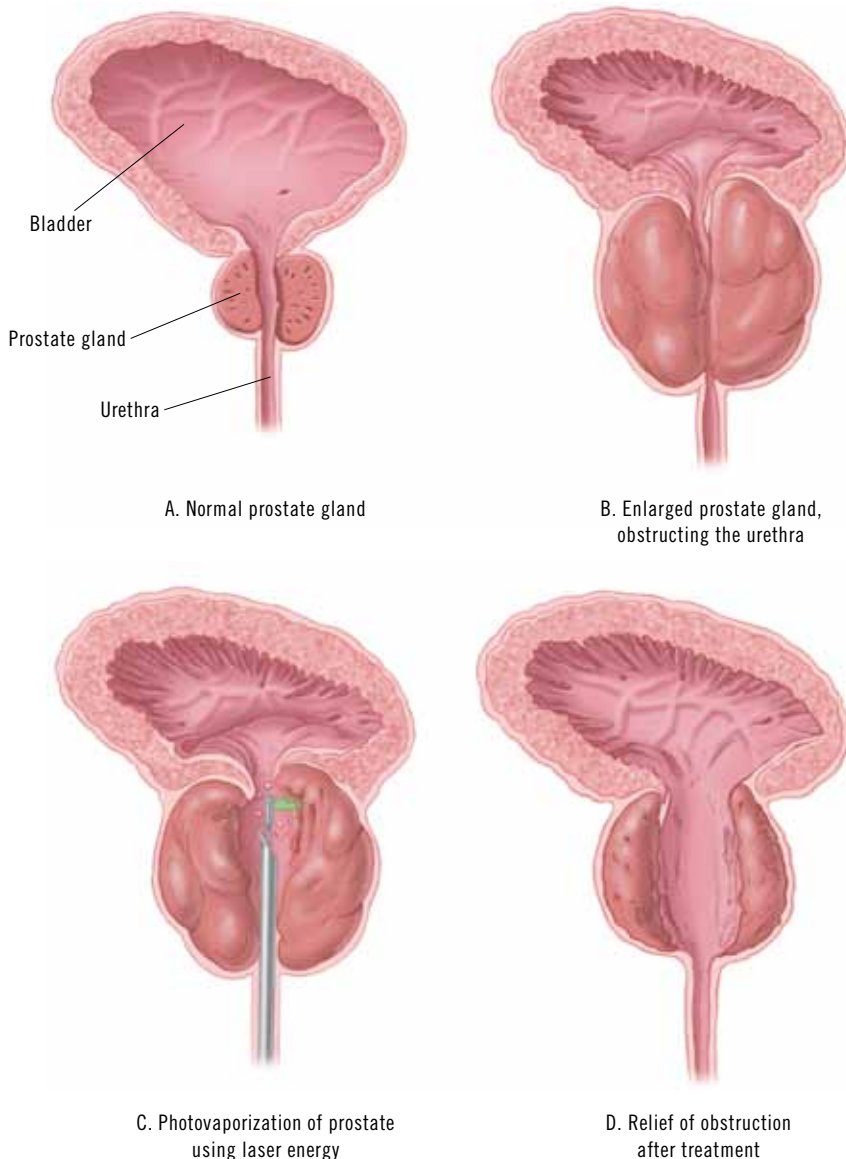
More recently, an alternative to TURP known as electrovaporization of the prostate (EVP) is being used. The procedure, which employs a bipolar current to vaporize the prostate tissue, offers advantages similar to the PVP, including less bleeding during

and after the procedure. There is also evidence that plasma kinetic EVP procedures can result in less postoperative urinary frequency, which can accompany laser vaporization for a week or two.

An even less invasive option, thermotherapy, delivers microwave energy to shrink the tissue in an office-based procedure. Under a local anesthetic, the patient has a catheter placed into the urethra, through which the heat is sent to a location inside the prostate. The prostate tissue is heated while cooling fluid around the microwave generator prevents the temperature from getting too high outside the prostate. Over a period of a few weeks, the treated prostate tissue is reabsorbed by the body, reducing obstruction to urinary flow. The microwave therapy offers the advantage of being done as a simple office procedure, although unlike the other surgical alternatives for BPH, the results aren’t immediate, and there are higher rates of re-treatment.

For men with extremely large glands who are otherwise healthy, the above minimally invasive options are not appropriate, since they can remove only a limited amount of tissue at one sitting. For these patients, the treatment of choice has historically been open surgery wherein the surgeon removes the inner portion of the prostate that obstructs the flow of urine. Although highly effective, open prostatectomy is a major operation with a significant risk of blood loss and a two-to-three day hospital stay. UCLA now offers a minimally invasive option for these men as well. Robotic simple prostatectomy can remove the obstructing gland with minimum risk of blood loss and an overnight hospital stay. There is also less pain and a more rapid recovery. “Robotic simple prostatectomy is a great addition to our armamentarium and offers a minimally invasive option for even the most severe cases of BPH,” says Robert Reiter, MD, MBA, professor of urology.

Dr. Reiter concludes: “What is great about our program is that we are able to offer the most advanced and minimally invasive options for all our patients. Our motto has always been ‘the right treatment for the right patient,’ which is what we strive for in the management of BPH and all prostate diseases.”



Illustrations courtesy of American Medical Systems

Patients will be randomly (by chance) assigned to one of the two treatment groups. To be eligible for this trial, subjects with advanced RCC must have histological confirmation of clear cell or non-clear RCC. Included are patients who have had a nephrectomy (partial or total) or no nephrectomy, and those with at least one measurable lesion at baseline as per the Response Evaluation Criteria in Solid Tumors (RECIST). (Pharmaceutical company: Novartis)

PROSTATE CANCER

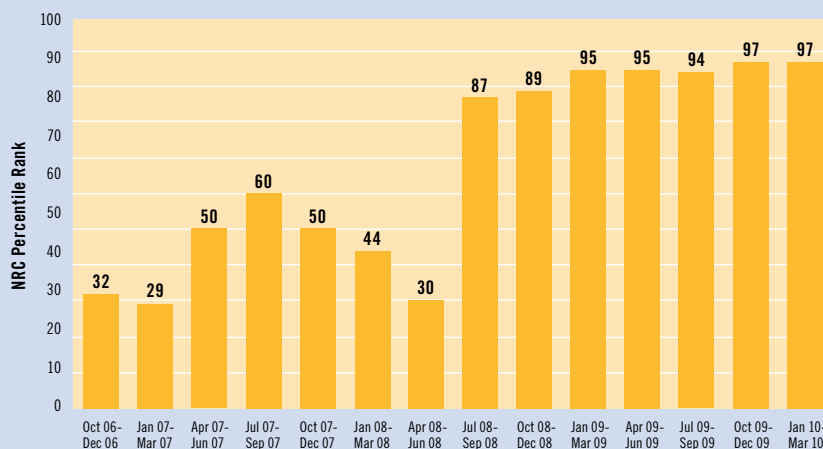
AFFIRM TRIAL: Multinational Phase 3, Randomized, Double-Blind, Placebo-Controlled Efficacy and Safety Study of Oral MDV3100 in Patients with Progressive Castration-Resistant Prostate Cancer Previously Treated with Docetaxel-Based Chemotherapy (IRB#09-07-002)

PREVAIL TRIAL: A Multinational Phase 3, Randomized, Double-Blind, Placebo-Controlled Efficacy and Safety Study of Oral MDV3100 in Chemotherapy-Naïve Patients with Progressive Metastatic Prostate Cancer Who Have Failed Androgen Deprivation Therapy. (IRB pending)

• *Prostate Cancer*, PI: **Matthew Rettig, MD**; co-PIs: **Fairooz Kabbinavar, MD**; **Allan Pantuck, MD**; **Robert Reiter, MD**; and **Steven Wong, MD** — Two studies of an oral medication for patients who have or have not received chemotherapy for prostate cancer. Eligible patients will be assigned to receive either MDV3100 (active drug) or a placebo in a 2:1 ratio in the post-chemo study and 1:1 in the chemo naïve study. Patients will be on the investigational medication for as long as they are experiencing benefits and will have routine follow-up thereafter. In animal studies, MDV3100 treatment has been shown to decrease tumor volume. (Pharmaceutical company: Medivation, Inc.)

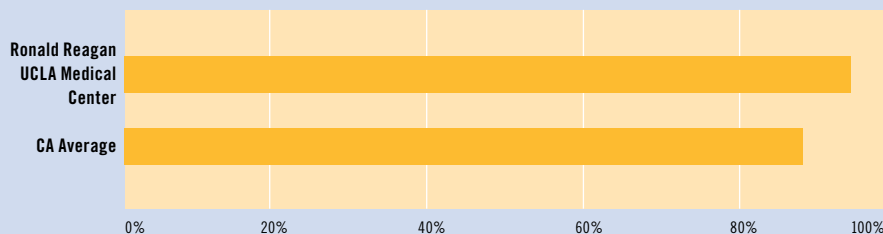
For more information about eligibility requirements and participation in these and other UCLA Urology clinical trials, please contact Nazy Zomorodian, MSN, CUNP, at (310) 794-3550, or go to www.urology.ucla.edu and click on the “Clinical Trials” link.

Patient ratings for Ronald Reagan UCLA Medical Center among the best in the nation



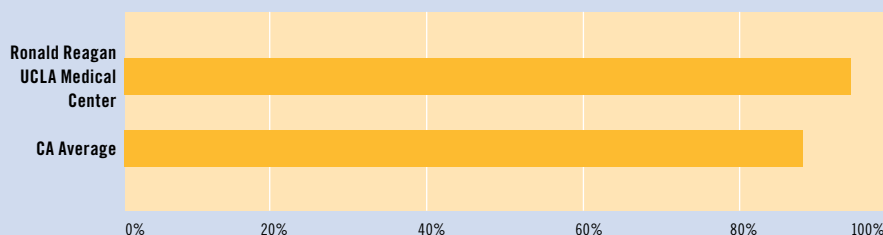
Ronald Reagan UCLA Medical Center is now ranked in the 97th percentile among NRC+Picker client hospitals across the nation, showing dramatic improvement over a relatively short period of time. Four years ago, the Westwood hospital occupied the 37th percentile.

Percentage of Patients Rating Hospital 7 to 10



For the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) reporting period October 2008 – September 2009, 97% of patients rated the overall quality of Ronald Reagan UCLA Medical Center 7 to 10, where 10 represents the “best” hospital.

Percentage of Patients Who Would Recommend Hospital



For the HCAHPS reporting period October 2008 – September 2009, 97% of patients said they would “probably recommend” or “definitely recommend” Ronald Reagan UCLA Medical Center.

For more information on quality ratings of UCLA Health System, visit www.uclahealth.org/quality.

Researchers Move Toward Better-Informed Prostate Cancer Treatment

A research group headed by a member of the UCLA Department of Urology faculty is making progress in developing a new technology. It would use a blood sample from prostate cancer patients to glean important prognostic information and point the way toward the best drug treatment for the individual patient.

The technology is based on the ability to isolate and study circulating tumor cells (CTCs) — cancer cells that break away from the primary tumor or metastatic lesions and enter the bloodstream. CTCs offer the potential to provide clinicians with critical information about a patient's cancer through a simple blood test, without the need to perform an invasive tissue biopsy.

A team headed by Matthew Rettig, MD, associate professor in the UCLA Department of Urology and medical director of the Prostate Cancer Program, has developed a nanotechnology-based system capable of capturing a sufficient number of these cells from patients with metastatic prostate cancer to conduct molecular studies at the single-cell level. With funding from the Prostate Cancer Foundation, the researchers are now using the technology to analyze these CTCs. They are learning the molecular characteristics that make certain cells more lethal than others, while seeking information that would enable clinicians to make more informed choices about which therapies to select.

“Currently, drug treatment in prostate cancer involves a great deal of guesswork,” Dr. Rettig explains. “It’s a one-size-fits-all approach, rather than tailoring the therapy to patients’ individual tumors based on the molecular signature. We hope to be able to use a sample

Comings & Goings

The UCLA Department of Urology is proud to introduce the newest members of its faculty:



Joseph Riss, PhD, was recruited from the National Cancer Institute (NCI) as assistant professor and director of research for the UCLA Kidney Cancer Program, Institute of Urologic Oncology (IUO). Dr. Riss earned his PhD at the Hebrew University Medical School in Jerusalem and received his postdoctoral training at the National Institutes of Health. At the IUO, Dr. Riss is working on cutting-edge translational research, including the development of an immune-based RCC therapy that is also molecularly targeted.



Frédéric Birkhäuser, MD, began a two-year fellowship as a visiting researcher with Arie Beldegrun, MD, on July 1. Dr. Birkhäuser is a fully trained urologist from the Department of Urology at the University of Bern, Switzerland (currently chaired by Urs Studer, former UCLA fellow). His primary research interest is in kidney cancer; his study, “Carbonic Anhydrase IX Molecularly Targeted Kidney Cancer Vaccine Therapy — Translation from Bench-to-Bedside,” is funded by the Swiss National Science Foundation.

of the tumor cells circulating in the patient's blood — a liquid biopsy — to analyze the tumor and choose the appropriate therapy for that patient; in this way we can avoid drugs that aren't going to work or against which patients will develop early resistance.”

The ability to collect CTCs and learn about the molecular alterations in prostate cancer cells that are associated with progression would prove invaluable, notes Jiaoti Huang, MD, PhD, professor of pathology and one of the study's co-investigators.

“Prostate cancer is unusual in that many patients diagnosed with the disease will not have any issues with it,” Dr. Huang says. “The problem is that we need better ways to tell tumors apart. Our hypothesis is that before the tumor metastasizes to distant organs, the tumor cells travel in the blood. By detecting these CTCs, we might be able to learn that a patient is at high risk for metastasis, which could guide therapy. But even more than that,

we know that certain cells are able to give rise to new tumors, and they would be the cells we would want to target for treatment.”

Dr. Rettig stresses that the technique is still in the research phase. “I am optimistic that eventually it could be an important tool,” he adds, “not only for prostate cancer, but for other cancers as well.”



Medical Student's "Year Off" in Urology Lab Could Save Lives

While many of his classmates at the David Geffen School of Medicine at UCLA were beginning their fourth year, Andrew Behesnilian was taking a year off to pursue a research project in the lab of Bernard M. Churchill, MD, the Judith and Robert Winston Chair in Pediatric Urology and founding director of the Clark-Morrison Children's Urological Center at UCLA. To say it was a fruitful year would be an understatement.

Under the mentorship of Dr. Churchill and David A. Haake, MD, associate professor of medicine and urology at UCLA, Mr. Behesnilian developed a rapid, inexpensive and accurate test for methicilin-resistant Staph aureus (MRSA) in patient blood. The success of his translational research project opens the door to a fully automatable system with the potential to be used on a large scale in hospital and doctor's office settings — substantially reducing costs and saving lives.

Each year in the United States, MRSA is responsible for approximately 100,000 life-threatening infections and 20,000 deaths — more than the number of Americans who die from HIV/AIDS — as well as incurring a significant cost to the healthcare system from prolonged treatment of infections in ICU settings. MRSA is known as a "superbug" because it is so difficult to treat — resistant to conventional antibiotics.

Complicating the problem is that there are two strains of the Staph bacteria: not only the resistant strain of MRSA but also a sensitive strain, MSSA, which is susceptible to treatment with commonly used antibiotics. The two strains are indistinguishable in their clinical presentation: only after the patient's blood is cultured — a process that can take three days — is a conclusion drawn on the strain of the bacteria the patient is carrying. Because three days is too long to wait to begin treating the life-threatening illness, physicians typically prescribe vancomycin, an expensive, powerful antibiotic capable of killing the resistant strain.

But overuse of antibiotics builds resistance in the population — and now there are reports that MRSA is becoming increasingly resistant to treatment with vancomycin, currently the last line of defense against the superbug. Moreover, at a cost of as much as \$1 billion to develop a new antibiotic, few alternatives are in the pharmaceutical pipeline.

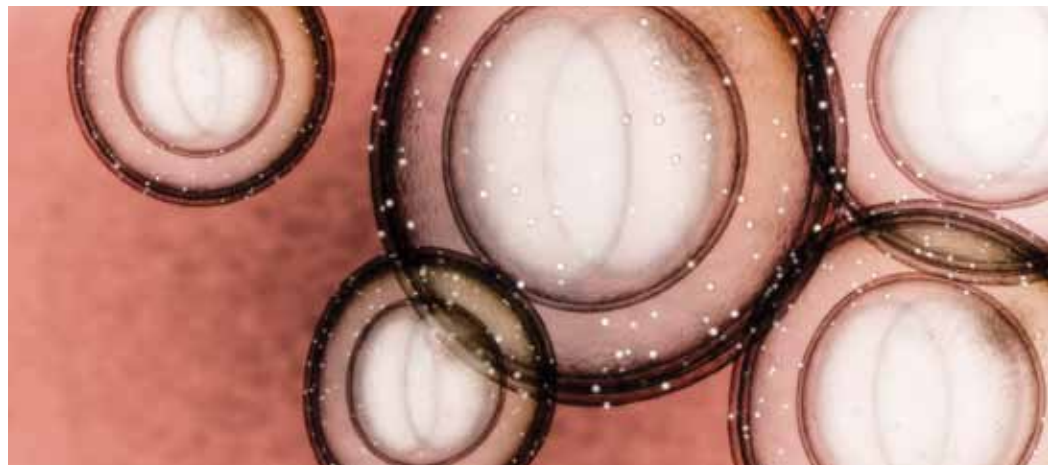
In his clinical training as a medical student, Mr. Behesnilian had visited many patients who were sick from the infection and saw the frustration in physicians who had to wait before knowing more about the strain their patient was carrying. While doing a urology rotation in his third year, he met Dr. Churchill and learned of a rapid, inexpensive and accurate test Drs. Churchill and Haake had developed for detecting bacteria in urine, using an electrochemical sensor. Intrigued, he decided to take a year off to work under their tutelage in an effort to adapt the technology to test for MRSA in patient blood cultures.

After months of experimenting with different chemistries, antibodies and concentrations, Mr. Behesnilian achieved success: a test that within two hours returned results that were 100% sensitive (picking up all infections) and 87% specific (correctly identifying the strain). Using that data, Mr. Behesnilian

Mr. Behesnilian developed a rapid, inexpensive and accurate test for methicilin-resistant Staph aureus (MRSA) in patient blood.

and his Department of Urology mentors are now applying for a grant to take the research further, toward the ultimate goal of automating the system so that it could be implemented on a broad scale.

If the research has the potential for a major clinical impact, it has already had a significant effect on Mr. Behesnilian, who as a result of the experience is now applying to academic urology residency programs. "It is so rewarding to be able to know I've done something with the potential to have an impact on the lives of patients," he says. "Drs. Churchill and Haake have been incredible mentors — always available and interested in teaching me how to take a concept from just an idea all the way to the patient bedside. Because of this experience, I can see myself devoting a significant part of my future to conducting research."



The structure of MRSA

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U.S. News & World Report's
Best Hospital Survey ranks UCLA as
the No. 5 hospital and UCLA Urology
as the No. 4 department in the country.



UCLA Medical Group ranks as one
of California's top-performing
physician organizations.



Did You Know?

Leave a Legacy

Did you know that you can foster continued excellence in the UCLA Department of Urology, while providing for the future of your loved ones?

Charitable gifts made through your estate are a wonderful way to do so. Estate gifts can be funded with cash, securities, real estate or other property, including qualified retirement plans or life insurance. It is possible to make such donations while you minimize taxes and/or settlement costs and preserve more of your estate for loved ones.

For more information on how to include the UCLA Department of Urology in your estate plans, please contact Kathleen Lago by calling (310) 206-3079 or emailing klago@support.ucla.edu.

Give Now. Here's How.

Contributions to the UCLA Department of Urology support research programs and help the faculty make cutting-edge discoveries that can save lives. You can make a gift to the department by logging on to <http://giving.ucla.edu/urology>. Please call (310) 206-3079 if you have any questions about making a gift to UCLA Urology.

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