Robert Meier had torn his rotator cuff and was preparing for shoulder surgery in September 2008 when he received some unexpected news: The routine blood work that had been ordered prior to the operation revealed that his prostate-specific antigen (PSA) level had risen from 4 to 6.

"The doctor said this wasn't normal, and that I should see a urologist after the shoulder surgery," says Mr. Meier, a 58-year-old high school visual arts teacher in Visalia, CA.

The urologist ordered a biopsy that came back negative, so he suggested that Mr. Meier return in six months. By that time the PSA had gone up to 9. Two subsequent biopsies in the ensuing months found nothing, yet Mr. Meier’s PSA level was continuing to rise – it was now up to 15.7.

He went to Santa Barbara for a second opinion, and was told that if three biopsy rounds hadn’t detected cancer the elevated PSA might be the result of a benign enlargement of the prostate. For the next nine months Mr. Meier took medication to shrink the prostate, but his PSA was relentless in its ascent. At that point – more than three emotionally trying years after Mr. Meier first learned about his elevated PSA – the urologist suggested he go to Westwood, where a UCLA Urology team headed by Leonard Marks, MD, is pioneering a new approach.

Approximately 1 million prostate biopsies are performed in the United States each year, the vast majority prompted by elevated PSA. Three-fourths of them are negative. That leaves a pool of roughly 750,000 men each year who show increased PSA levels suggestive of prostate cancer, but who do not have cancer.

"Targeted Biopsy"
Brings New Level of Accuracy to Prostate Cancer Diagnosis

For Robert Meier, targeted biopsy found what conventional biopsies could not, and a lethal tumor was removed.

UCLA Urology's Leonard Marks, MD, heads a multidisciplinary team that is using new technology to produce much more accurate prostate biopsies.

"Targeted Biopsy" is a new technique for prostate cancer diagnosis that uses a higher resolution biopsy to target specific areas of the prostate gland. This approach can help identify the presence of cancer more accurately and may reduce the number of negative biopsy results.

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Who Should Have a Targeted Prostate Biopsy?

Dr. Marks’s group currently recommends targeted prostate biopsy for men who are suspected of having prostate cancer, but whose test results are inconclusive and who have experienced any of the following:

- persistent, unexplained elevated prostate-specific antigen (PSA)
- prior negative biopsy
- increased prostate cancer gene expression (PCA3 urine test with an elevated score)
- apparent low-risk prostate cancer, with an interest in active surveillance (watchful waiting)

abnormal PSA levels and a negative biopsy – or, as in Mr. Meier’s case, multiple negative biopsies. “This is an anxiety-producing situation because some of these men will have prostate cancer that is missed by the conventional biopsy,” says Dr. Marks.

Dr. Marks heads a multidisciplinary UCLA team that, with support from a $1.7 million National Cancer Institute grant, is using new technology to produce much more accurate biopsies. Targeted biopsy employs sophisticated magnetic resonance imaging (MRI) technology to visualize the prostate cancer, then fuses the MR images with real-time ultrasound using a device called the Artemis, enabling the urologist to visualize the lesion in real time when performing the biopsy – something that wasn’t possible in the past.

“We’re seeing men every day in our clinic who are referred to us after having negative biopsies and persistently elevated PSA,” Dr. Marks says. “We do the MRI and if there is a lesion outside the normal catchment area of conventional biopsy, we can target that. If it turns out to be cancer, we can do a major service by diagnosing it while it’s still treatable.”

For decades, urologists have been unable to visualize the tumor during a prostate biopsy. The state of the art since the mid-1980s has involved using ultrasound through the rectum to systematically sample the prostate. “It’s systematic, but it’s blind,” Dr. Marks explains.

Unlike other major cancers, prostate cancer has been nearly impossible to image in the early stages because of the limited contrast between normal and malignant tissues within the prostate. That began to change with the emergence of MRI. For more than a decade, radiologists have used the imaging technique to evaluate prostate cancer. But several barriers have stood in the way of MRI’s use in prostate biopsies, including the size of the instrument, the length of time it takes to acquire the information, and discomfort to the patient.

In recent years, new MRI technologies have enhanced the ability of expert radiologists to identify and evaluate areas of the prostate that are suspicious for a tumor in a way that’s far less cumbersome. By feeding these MR images into the Artemis device, they can be fused with the ultrasound to virtually map the suspicious areas onto the ultrasound image, so that the biopsy can be targeted directly toward the specific area of interest. Dr. Marks’s team represents a combined effort of UCLA Urology and UCLAs’ departments of radiology, pathology, and biomedical engineering.

The targeted prostate biopsy is also proving to be helpful for men in UCLA Urology’s Active Surveillance program. Unlike most other cancers, prostate tumors are often not lethal and may never require treatment; with active surveillance, patients who have non-aggressive cancers can be spared the pain, risks, and side effects of surgery or radiation therapy. The problem has been finding reliable ways of predicting which patients need treatment and which ones can simply be monitored.

Using the more accurate biopsy approach, men who are believed to have low-risk tumors can be followed with greater confidence. “We want the serious cancers to get picked up and treated, and the ones that are not serious not to get treated,” Dr. Marks says. “If a man is in the active surveillance program and his targeted biopsy is negative, that offers a degree of reassurance not previously possible.”

For patients like Robert Meier, reassurance is coming in a different form. Referred to UCLA Urology after repeated systematic biopsies failed to detect the cancer, Mr. Meier underwent a targeted prostate biopsy that detected the tumor. He was told that the cancer was still localized to the prostate gland, but was likely to kill him within 2-5 years if it wasn’t treated immediately.

“Dr. Marks looked me straight in the eye and said, ‘You have an aggressive cancer and you need to get it out,’ ” Mr. Meier recalls. “He told me, ‘I want you to live another 30 years’ I said, ‘So do I!’ ”

Mr. Meier underwent surgery last February, and follow-up tests have found him to be cancer-free.

To view a video on targeted prostate biopsy at UCLA, go to the UCLA Urology website (www.uclaurology.com) or search “UCLA biopsy” on YouTube.
Pediatric Nocturnal Enuresis (Bedwetting)

Urologic conditions affect people across the life spectrum. In each issue of the UCLA Urology Update we will discuss a urologic condition and how it can be addressed.

Pediatric nocturnal enuresis, more commonly known as bedwetting, refers to involuntary urination during sleep beyond an appropriate age (around 5 years old). It is among the most common pediatric health issues and, although it can be unsettling for children and their families, it generally should not be a cause for concern.

Once thought to be a psychological problem, nocturnal enuresis is now believed to be attributable to physiological factors in the vast majority of cases. For most children there is no underlying disease that explains the bedwetting – merely an inability to recognize and be awakened by the feeling of a full bladder, most likely caused by a developmental delay in the bladder that the child eventually outgrows. There is no evidence that stress, emotional disturbances or similar factors cause enuresis.

The approach to treatment – or whether it is needed at all – depends on the extent to which the enuresis is affecting the child and his or her social development. Behavioral options range from the use of an alarm that makes a sound during voiding to positive reinforcement techniques such as offering a reward for staying dry. Medications range from those that decrease urine output during sleep to those that relax the bladder muscle and may produce lighter sleep.

Most experts advise parents to simply wait out the problem when at all possible. Any efforts to address enuresis should focus on improving the child’s self-esteem. It is important for parents to understand that nighttime wetting is not an act of rebellion or failure, but a condition the child cannot control and will eventually outgrow, even without treatment.


For more information, visit the Healthy at Every Age section of www.uclaurology.com. To make an appointment, call (310) 794-7700.
Donna Stump was a nurse working part-time in the neonatal intensive care unit at Loma Linda University Medical Center, but for some reason she hadn't heard about Alex, the newborn patient with the congenital anomalies so unusual and complex that the other NICU nurses at Loma Linda all seemed to know about him.

Alex was born with cloacal extrophy, part of a rare syndrome characterized by exposed and protruding abdominal organs (bladder and intestines), splitting of the penis, an unformed anus and spinal defects. Once he made it out of the NICU he would require tremendous amounts of care and attention at home. Mrs. Stump was being contacted about Alex not as a nurse but as a medical foster parent. Donna and Rusty Stump had been foster parents before, and now they were being asked if they could take in Alex.

Mrs. Stump went in to work the next day, talked to a friend and coworker about the care Alex was receiving, and held him in her arms. “It was a little scary at first,” she admits. “In seven years as an NICU nurse, I had never seen anything like this.” She talked about it with her husband. They decided that yes, they could take Alex home.

By the time he was discharged, Alex had lived the first two months of his life in the NICU. As a result, recalls Mrs. Stump, “he needed constant reassurance that his needs would be met.” The Stumps took shifts sitting next to his crib, holding his hand so that he knew they wouldn’t leave his side.

G. Russell “Russ” Bell, PhD, president of the Beckman Coulter Foundation since its formation in September 2007, has nothing but praise for his friend and physician, UCLA Urology’s Dr. Leonard Marks. “Lenny is a very inspiring guy,” Dr. Bell says. The two met in 1990 when Dr. Marks was collaborating with Hybritech, a San Diego-based company headed by Dr. Bell that was doing pioneering work in prostate-specific antigen (PSA) testing. The company was later acquired by Beckman Coulter, but the relationship continued. “We shared the belief that not all men with prostate cancer need to have surgery or radiation; rather, they need to be monitored over a period of years,” recalls Dr. Bell. “That got us started.”

UCLA Urology was developing its program of active surveillance for patients with low-risk prostate cancer who were choosing the “watchful waiting” approach. “We brought our foundation board members to UCLA, they were very impressed, and we began directing funds to the program,” Dr. Bell explains. “It’s important for the foundation to fund research that will push the envelope and researchers who will come through.”

At about the same time the Beckman Coulter Foundation began funding the UCLA Active Surveillance for Cancer of the Prostate program, Dr. Bell’s PSA level shot up. “With Lenny’s encouragement, I came to UCLA as one of the first patients for the targeted prostate biopsy program [see cover story],” says Dr. Bell, who retired as Beckman Coulter’s chief scientific officer in 2009. “My experience as a patient at UCLA was unbelievably great. I’ve referred 8-10 executives to Dr. Marks, and I’ve talked to a number of candidates about my personal experience. You might say I’m an ex-officio UCLA urologist.”

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By the time he was discharged, Alex had lived the first two months of his life in the NICU. As a result, recalls Mrs. Stump, “he needed constant reassurance that his needs would be met.” For the first two years of his life, Alex barely slept at night. The Stumps took shifts sitting next to his crib, holding his hand so that he knew they wouldn’t leave his side.
There were plenty of other challenges. Trying to get Alex to eat was a constant battle, and he eventually needed tube feedings through his nose to ensure proper nourishment. With his bladder on the outside, urine leakage was always an issue; with no anus, he needed a colostomy. The ostomy pouch had to be changed as many as seven times a day to prevent the stool from being exposed to the bladder, which could lead to an infection.

Through the struggles, though, the Stumps also realized they had a special child. “I didn’t think he would ever sit up,” Mrs. Stump says. “Then one day he was standing, and then he was walking and running and dancing. He’s just a little ball of fire, feisty and resilient. He doesn’t let anything stop him.” Donna Stump also knew from the beginning that she and Rusty would end up adopting Alex. On November 12, 2010, a little more than five months after Alex’s second birthday, they made it official.

By that time the Stumps had begun an exhaustive search for a medical team that could perform the complicated surgery Alex would need. They took Alex to several specialists before learning that one of the world’s experts at complicated pediatric urology surgeries was in their own backyard. 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, agreed to do the repair.

It was scheduled for June 3, 2011. The Stumps brought Alex in to Ronald Reagan UCLA Medical Center at 4 a.m., and a few minutes later they were in the pre-op area. The surgery started at 8 a.m., and the Stumps waited for what seemed an interminable period. “Dr. Churchill had done his best to prepare us for what was coming, but I don’t know if that’s really even possible,” says Rusty Stump.

The surgery involved a bladder exstrophy closure, bladder reconstruction, bladder augmentation, a Mitrofanoff procedure (creating a tunnel from the appendix to the bladder to enable catheterization and prevent incontinence), bilateral osteotomies (cutting through and realigning bones), and placement of an AlloDerm graft to support tissue regeneration.

“She was so reassuring,” Mr. Stump says. “He said Alex had done great, was out of the surgery and was being casted.” Nearly 24 hours after they had arrived, the Stumps were reunited with their son in the intensive care unit. Alex was in the ICU for three weeks and in the hospital for nearly two months, his parents constantly by his side. They left with a renewed respect for Dr. Churchill and the entire team of physician specialists, nurses, and staff. “UCLA demonstrated that they are about the patient and the patient’s family,” says Donna Stump.

“I’ve spent time in a lot of hospitals, and none of them compares.”

More than a year after he was discharged, Alex still requires considerable attention, but much less than before. Donna Stump used to have to keep a chart just to remember what IV and oral medications her son was to receive at what times; now, there are only two medications per day. Alex can now take a bath, go in a pool, play in the sand — things he could never do before the surgery. His gait has improved dramatically.

“Donna and Rusty Stump have been through it all with Alex, but they have no regrets. "We have sung ‘Amazing Grace,’” Mr. Stump says. “We have said ‘Amazing Grace’ every morning when he stands in front of us and says, ‘Gonna wake up now?’”

Alex Stump (opposite page, with parents Rusty and Donna) spent nearly 24 hours in the operating room for a highly complex surgery by UCLA Urology’s Dr. Bernard Churchill. Much improved, he has since returned to his happy life.
UCLA Urology’s Division of Pelvic Medicine and Reconstructive Surgery, which has helped to define the state of the art for simple and complicated treatments of all types of conditions related to pelvic disorder and voiding dysfunction, will soon have its own state-of-the-art space as well. A new suite in the Frank Clark Urology Center, Westwood, will provide a central location dedicated solely to the diagnosis, treatment and consultation services that the program offers.

“This will improve our ability to deliver coordinated, multifaceted care for the women and men who need our services,” says Larissa Rodriguez, MD, co-director of the division and director of female urology research.

The division is dedicated to the diagnosis and treatment of all aspects of pelvic disorders, from urinary incontinence to pelvic prolapse, obstruction and pain. A major referral center for complex cases, the division employs the latest diagnostic technologies along with a wide range of treatment approaches, many of them developed and advanced by the division’s urologists. Conditions treated include stress and urgency incontinence, pelvic organ and rectal prolapse, fistulas, and incontinence after prostatectomy.

In addition to being renowned for developing bladder and vaginal reconstructive surgery techniques, the division has more experience than any in treating voiding dysfunction through neuromodulation – theinsertion of a “bladder pacemaker” to improve function. More recently, the division has emerged as a leader in repairing complications associated with transvaginal placement of surgical mesh.

“For the most part, we are treating quality of life issues,” says Ja-Hong Kim, MD, assistant professor in the division. “We help to return patients’ function, in many cases by reconstructing the structures that have been damaged through prior surgery or the aging process.”

Often, patients wrongly assume that a condition such as incontinence is something that is inevitable with aging, so they don’t bring it up with their physician and accept a significantly compromised quality of life. “There are patients with incontinence who won’t go to a movie or engage in physical activity,” notes Dr. Rodriguez. “It can affect sexual function and relationships with their partner. Studies have also shown that patients with incontinence are more likely to suffer from depression or, among the elderly, to suffer from falls. Yet, most of these conditions are easily treatable with minimally invasive procedures, medications, and physical therapy.”

The division’s expertise and experience are unparalleled within the pelvic medicine/reconstructive surgery subspecialty, with more than 13,000 pelvic reconstructive procedures having been performed. Between 8,000 and 9,000 patients are seen each year, with 800-900 surgeries. Faculty members, led by Shlomo Raz, MD, professor of urology and chief of the division, have been pioneers in developing new treatment options, and an active basic research program keeps the division at the forefront. “We have patients who travel long distances to see us,” says Dr. Raz. “In many cases, they think there is nothing that can be done for them, but we are able to help.”

Urologic Diseases in America (UDA), a landmark project to quantify the demographic and economic burden of urologic diseases on the American public, has been renewed by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health for five more years of funding (2012-2017) in the amount of $6.5 million. The project is led by Dr. Mark S. Litwin, UCLA Urology chair, and Dr. Christopher Saigal, UCLA Urology vice chair.

UDA has now received nearly $23 million in funding since it was first awarded in 2001. *Urologic Diseases in America 2012*, a compendium released earlier this year, documents the prevalence, treatment patterns, and economic impact of nearly 40 urologic conditions afflicting children and adults. For more information, visit www.udaonline.net.
Jeffrey Bassett, MD, MPH, former UCLA Urology resident, had his article, “Impact of a Bladder Cancer Diagnosis on Smoking Behavior,” accepted for publication in the Journal of Clinical Oncology. Dr. Bassett was awarded the John Quale Travel Fellowship Award to present his research at the 2012 Annual Bladder Cancer Advocacy Network Think Tank Meeting.

Jonathan Bergman, MD, MPH, Robert Wood Johnson Foundation Clinical Scholar, received funding from the Research Scholars Program of the American Academy of Hospice and Palliative Medicine (AAHPM) to present at the National Palliative Care annual retreat, cosponsored by the American Cancer Society and AAHPM.

Alan L. Kaplan, MD, UCLA Urology resident, was published in the April 1 Chicago Tribune Sunday Op-Ed section discussing his experiences and lessons learned as a surgical intern at UCLA.

Sevan V. Stepanian, MD, UCLA Urology resident, was a third-place winner in the poster session for the Western Section American Urological Association meeting in 2011 for “Preoperative Fish Oil Supplementation Does Not Alter Operative Blood Loss or Transfusion.”

Ja-Hong Kim, MD, assistant professor in the Division of Pelvic Medicine and Reconstructive Surgery, participated in the 2012 American Urological Association/European Association of Urology Academic Fellowship Exchange, which provides young urology faculty with an international perspective on urologic medicine.

Gladys Ng, MD, UCLA Urology resident, received the 2011-12 Laurence R. Meyerson and Deborah L. Faiman Travel Award to attend the American Transplant Congress Conference in Boston and present her poster, “Correlation of Biopsy to Kidney Donor Profile Index (KDPI) in Donors Over Age 50,” which was given a ribbon for being a poster of distinction.

Shlomo Raz MD, professor of urology and chief of the Division of Pelvic Medicine and Reconstructive Surgery, gave the prestigious Ramon Guiteras Lecture, “Searching for the Cure of Stress Incontinence – A 30 Year Journey” at the 2012 American Urological Association annual meeting.

Robert Reiter, MD, professor of urology and molecular biology, director of the Prostate Cancer Program and director of urologic research, received a grant from Takeda to study “Downstream Targets of N-cadherin.” Dr. Reiter also gave a major educational plenary address at the 2012 American Society of Clinical Oncology conference on “Biological Basis of Emerging Therapies in Advanced Prostate Cancer.”

Christopher Saigal, MD, MPH, was named chair of the National Quality Forum Steering Committee on Urology Quality of Care Measures and member of the American Urological Association’s Data Strategy Committee.

Charles Scales Jr., MD, a Robert Wood Johnson Foundation Clinical Scholar, published “Prevalence of Kidney Stones in the United States” in the July 2012 issue of European Urology. Dr. Scales’s research, which received widespread news coverage, suggests that the incidence of kidney stones in the United States has risen sharply in correlation with increased rates of obesity and diabetes.

Geoffrey Sonn, MD, urologic oncology fellow, presented “Value of Targeted Biopsy in Detecting Prostate Cancer Using an Office-Based MR-US Fusion Device” at the 2012 American Urological Association annual meeting and at the Fifth International Symposium on Focal Therapy and Imaging in Prostate and Kidney Cancer. Dr. Sonn was also accepted into the UCLA Clinical and Translational Science Institute Training Program.

We are saddened to report the death of Ben Armentrout-Wiswall after a courageous struggle with cancer. His extraordinary family was featured in “No Place Like Home,” the cover story of our Winter 2012 issue. He is survived by his husband and three children.

In Memoriam

Richard M. Ehrlich, MD

Richard M. Ehrlich, MD, has returned to the UCLA Urology faculty as professor emeritus, after having served on the UCLA Urology faculty from 1971 to 1991. Dr. Ehrlich, who sees both pediatric and adult urology patients in Westwood, was a major figure in the early days of kidney transplantation, serving as co-director of the UCLA Kidney Transplant Program from 1973 to 1986. He has been president of the Society for Pediatric Urology, and of the American Academy of Pediatrics-Urology Division. Dr. Ehrlich has published nearly 200 peer-reviewed articles, books and book chapters, and has held 28 visiting professorships. He is an elected member of the American Association of Genitourinary Surgeons. In addition, Dr. Ehrlich is a professional photographer whose work is represented in 19 museums, including the Smithsonian Institution’s permanent collection. Examples of his work can be found at www.ehrlichphotography.com.

Gregory S. Jack, MD

Gregory S. Jack, MD, has been recruited from the University of Melbourne, Australia to serve as assistant professor of urology and director of the new UCLA Stone Center. In Australia, Dr. Jack established himself as an expert in minimally invasive technology, renal, and endoscopic surgery. He has longstanding clinical interests in kidney reconstruction, renal physiology, nephrolithiasis, biomedical engineering, and radiology. He earned his MD from Vanderbilt University and completed his residency training at UCLA Urology before doing an endourology fellowship at the University of Melbourne, Australia, where he then joined the faculty. In his spare time, Dr. Jack can be found sitting atop the peaks of many of the world’s highest summits, including Mt. Everest.
IN THE COMMUNITY

Special Spiderman Screening for Friends of UCLA Urology

Just days before the national release of The Amazing Spiderman, UCLA pediatric urology patients were treated June 29 to a special advance screening of the film at the state-of-the-art Real D Theater in Beverly Hills. The event was held courtesy of Sherry Lansing, founder and CEO of the Sherry Lansing Foundation and chair of the UC Board of Regents; Arie Belldegrun, MD, director of the UCLA Institute of Urologic Oncology and Roy and Carol Doumani Chair in Urologic Oncology; Mark S. Litwin, MD, MPH, professor and chair of UCLA Urology; and Avi Arad, producer of The Amazing Spiderman.

“This is the only private screening of the film anywhere in the world,” noted Arad, a longtime friend of Dr. Belldegrun, as he introduced the movie. “I felt it was important for the children. It’s a story about a boy who overcomes huge obstacles in life – the death of his parents and uncle, the taunting of his schoolmates – to do something important, and he gets the girl in the end.”

The children and a select group of adults dined before donning their 3-D glasses; the feel-good evening finished with dessert and coffee in the lobby.

Contributions to UCLA Urology support our research programs and help our faculty make the cutting-edge discoveries that can save lives. You can make a gift to UCLA Urology 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.