We have much to celebrate this quarter with many notable achievements for our faculty and department. In July the department was ranked 9th in the country, according to U.S. News and World Report, for the second consecutive year. This honor makes the department the highest ranked urology program in Illinois and Chicago, and demonstrates the outstanding contributions of our faculty, residents, students, and alumni.

Our faculty continue to publish revolutionary research. Dr. Edward Gong, Assistant Professor in our department, was recently awarded a prestigious Hartwell Individual Biomedical Research Award for his research on treatment for obstructed bladder issues in boys. Dr. Gong’s team is the first group to study progenitor muscle stem cells in the bladder for a benign disease.

Dr. Gong is not the only faculty member to be honored with distinction over the past months. Dr. Elizabeth Yerkes was honored by the residents for her outstanding contributions to resident education, and Dr. Robert Brannigan and Dr. Joceline Liu were honored by medical students for their dedication to mentorship and teaching. Additionally, Dr. Brannigan was named the Urology Director of the Oncofertilty Consortium at Northwestern for his expertise in the male oncofertility movement.

As I reflect on my 24 years as chairman, accomplishments like these have played a major role in the reputation and excellence of our department. Together we have achieved the highest levels in education, research, and patient care. It has been an honor to lead the department and watch it grow and develop into one of the top programs in the country. We are well suited to continue to play a prominent role in urologic health, research, and education. Thank you all for your contributions and commitment to the department.

Regards,

Anthony Schaeffer, MD
Northwestern’s urology program has been ranked 9th in the country on the U.S. News & World Report 2014-15 Best Hospitals specialty ranking released in July 2014. This is the second year in a row that the department has been recognized as a top 10 program in the nation and the highest ranked urology program in Illinois and Chicago.

“Being ranked as one of the ten best urology programs in the nation is a great honor and one that reflects the quality care we strive to provide,” said Dr. Anthony Schaeffer, MD, Chair of the Department of Urology at Northwestern Memorial and Professor of Urology at Northwestern University. “Our urologists and nurses work closely with patients to develop individualized care plans to provide them with the most effective treatment and compassionate care possible.”

The U.S. News’ specialty rankings were driven by objective data such as procedure volume, death rates, and ratios of nurses and patients at nearly 5,000 hospitals across the nation. A reputation score is also factored into the rankings. This is found by surveying physicians, who are asked to name hospitals they consider tops in their specialty. In order to be considered in the ranked specialties, a hospital had to first meet at least one of four criteria: It had to be a teaching hospital, or be affiliated with a medical school, or have at least 200 beds, or have 100 or more beds and the availability of four or more types of important medical technology. Next, hospitals had to meet a volume requirement, individually calculated for each specialty. Only 147 hospitals, just 3% of those in the United States, earned a national ranking in one or more specialties.

As a whole, Northwestern placed 10th in the nation on the publisher’s most exclusive ranking: the Best Hospitals 2014-2015 Honor Roll. This is the second consecutive year in the top 10 and the third consecutive year on the Honor Roll. Northwestern Memorial Hospital is the only hospital in Illinois to make this prestigious ranking, and continues its place as No. 1 in Illinois and the Chicago metro area. Northwestern Memorial Hospital has held this distinction since the U.S. News first introduced its state and local rankings three years ago.
We are pleased to welcome Dr. Emilie Johnson, MD, MPH to the Urology Department. Dr. Johnson is an attending urologist at Ann & Robert H. Lurie Children’s Hospital of Chicago and an Assistant Professor in Urology at the Northwestern University Feinberg School of Medicine. She joined the faculty in 2014 from Boston Children’s Hospital/Harvard Medical School where she completed a joint fellowship in pediatric urology and pediatric health services research. Dr. Johnson aims to care for each child and family as if they were her own. She views caring for children and families as a privilege, and is eager to welcome new patients to her practice at Lurie.

Dr. Johnson is originally from Ann Arbor, Michigan. She completed her undergraduate work in Neuroscience and Behavioral Biology at Emory University in Atlanta and then returned to Ann Arbor for Medical School and Urology Residency at the University of Michigan. During her three-year fellowship in Boston, Dr. Johnson concurrently completed a Master of Public Health Degree at Harvard.

Dr. Johnson is the author of multiple peer-reviewed publications, and serves as a reviewer for the Journal of Urology, the Journal of Pediatric Urology, and Pediatrics. She is a member numerous professional societies, including the Urological Association, the American Academy of Pediatrics, the Society of Women in Urology, and the National Medical Association.

Dr. Johnson has experience in all aspects of pediatric urology. In particular, she has expertise in minimally invasive surgery including robotic and endoscopic techniques. She also has an interest in and commitment to clinical and health services research. These types of research aim to understand the patient experience, with a major goal of helping doctors provide the best treatments for each individual patient.
Northwestern University researcher, Dr. Sarki Abdulkadir, MD, PhD, professor in Urology, has identified through his research a specific target to stop cancer cells that express PIM1, a protein that contributes to the growth of a variety of cancers including leukemias, lymphomas, and prostate cancers.

The study discovered a relationship between the production of PIM1 and a protein called polo-like kinase (PLK1). Prostate cancer cells that produce too much PIM1 are extremely sensitive to the inhibition of PLK1. PIM1 increases cell survival, cell proliferation, and the formation of tumors.

“When we inhibit PLK1, the PIM1 cells die preferentially,” said Dr. Abdulkadir. “We wanted to inhibit the machinery that allows the cancer cells to divide.”

In order to find the exact proteins that would be detrimental to tumors expressing PIM1, study corresponding author Meejon Roh, PhD, research assistant professor in Radiation Oncology, systematically searched more than 600 proteins that currently serve as potential drug targets. In order to pinpoint specific proteins, she used a cellular process called RNA interference screening. This screening silences specific gene expression in order to evaluate which genes need to be expressed to make PIM1 prostate cells viable. The discovery was a surprise.

“We didn’t expect to find PLK1,” said Dr. Roh. “It is already known as a drug target for cancer therapy.”

PLK1 plays a very important role in regulating mitosis in the normal cell cycle. However, it can be over-expressed in many types of tumors. Already existing drugs aimed at PLK1 can have toxic side effects, one of the largest effects being that they can damage normal cells in cancer patients.

Finding a balance is important. Dr. Abdulkadir says, “What our study suggests is that if we can identify cancer patients who have a high PIM1, we can give them lower levels of this drug. The lower levels would be enough to kill the cancer cells, but not the patients’ normal cells. That’s really the bottom line.”

The same results were found when the scientists tested the discovery in vitro and in vivo. They inhibited PLK1 using both genetic means and the drug.

Dr. Roh has been studying PIM1 since 2001, under the mentorship of Dr. Abdulkadir and Dr. David Gius, MD, PhD and she is far from done. Dr. Roh says, “In the future, we would like to pursue PLK1 and PIM1 on a more molecular level to understand more detail.”

The study was supported by Department of Defense grant w81xwh-10-1-0246 and National Cancer Institute Grant CA123484.
On November 12, the International Institute for Nanotechnology, the Robert H. Lurie Comprehensive Cancer Center of Northwestern University and the Northwestern University Center of Cancer Nanotechnology Excellence teamed up to host the fourth annual Nano Boot Camp. The Camp showcased current advances in nanotechnology and how to best translate these innovations into the clinic.

Director of the Lurie Cancer Center, Leonidas C. Platanias, MD, PhD opened the event by welcoming all guests, including clinicians, medical students and scientists.

“Nanotechnology is something we are fortunate to be a leader in here at Northwestern,” he said. “Nanotechnology is an important and exciting area for the cancer center and for our programs.”

C. Shad Thaxton, MD, PhD, assistant professor in Urology, followed Dr. Platanias by giving an overview of nanotechnology and the history of the field. Thaxton provided an understanding of how nanotechnology has been applied to medicine by way of diagnostics, delivery agents, and therapeutics.

Amy Paller, MD, Chair of Dermatology, discussed the use of spherical nucleic acids, an arrangement of densely packed genetic material, to deliver gene therapy for skin disorders. Professor at UCLA School of Dentistry, Dean Ho, PhD, spoke about using nanodiamonds as a way of treating cancer.

The event came to an end with words from, Mary Hendrix, PhD, president and director of the Stanley Manne Children’s Research Institute. She discussed her work using nanoflares to study nodal, an embryonic growth factor that underlies unregulated tumor growth, metastasis, and resistance to conventional drugs. Nanoflares allow for the detection of intracellular RUNA and could potentially be used for finding and selecting stem cell markers.

Hendrix said, “Nanotechnology gives us the opportunity to use nanoflares for targeting cancer stem cells and drug resistant subpopulations, therefore providing new prognostic biomarkers, and targets for therapeutic intervention.”

Many found Hendrix’s presentation useful, including Xiao-Qi Wang, MD, PhD, and research associate professor in Dermatology. Dr. Wang said, “Dr. Hendrix’s research demonstrated that dissecting heterogeneous and developing specific targeting strategies to treat tumors may overcome the drug resistance and lead the cure for cancers.”

After attending the Nano Boot Camp, research assistant professor in Medicine-Pulmonary, Seok-Jo Kim, PhD, said that he now has a better understanding of nanotechnology and that he can now adapt it to his current research.

“Our group’s focus is on finding a treatment for pulmonary fibrosis using drug or other therapies,” he said. “We have molecules to inhibit pulmonary fibrosis, and nanotechnology will be needed to deliver them into the lungs in the future.”
Joceline Liu

In October, Joceline Liu spent two weeks in Kigali, Rwanda to work with the fistula program at King Faisal Hospital. This non-profit, volunteer-based medical mission educates local urologists and provides surgery and care for women with genitourinary fistulas—a condition that occurs as a result of prolonged and obstructed labor. Fistulization between the bladder, urethra, vagina, and rectum occur from extended pressure from the baby’s head. Consequently, the woman is constantly leaking urine, and if the rectal wall is also affected, she may be incontinent of feces. Many of the women seen during this biannual, month-long program have been ostracized from society and their families as a result of their condition.

The fistula project serves a population of women with a great medical need in a specialized surgical field that is largely unavailable in Rwanda. The patients seen in the fistula clinic are often unable to obtain employment due to their urinary and/or fecal incontinence and are relegated to living in small groups of women with fistulas. These patients do not have access to consistent urologic care, nor are they able to afford to pay for the necessary medical care. Advertisements for the biannual fistula program are broadcasted nationally over the radio, with hundreds of women traveling from throughout Rwanda and surrounding countries to be seen. While urinary fistulas are infrequently seen and treated at Northwestern Memorial Hospital, fistulas of the bladder, vagina, and rectum are significantly more common in underdeveloped nations, where prolonged and obstructed labor are widespread. As a result, the frequency, severity, and breadth of complex female urogenital reconstruction in Kigali, Rwanda far exceeds that of the United States.

Over the duration of the fistula program, Dr. Liu and her peers had the opportunity to evaluate over 100 patients and performed over 30 surgeries. The majority of these surgeries were for fistula repairs, with approximately half managed from an abdominal approach and the remainder via vaginal approach. Over the last decade during which the fistula program has become established in Kigali, a distinct shift in types of fistulas encountered has occurred. Previously, most fistulas resulted from prolonged labor and distal vesicovaginal fistula, which are best treated vaginally. In more recent years, with improved access to medical care and more common cesarean section with failure to progress during delivery at local health centers, many fistulas are now more proximal. Involving the ureters, uterus and cervix, these fistulas are repaired from an abdominal approach.

Looking back on her trip, Dr. Liu said, “The experience I had in Kigali was unforgettable and invaluable, and I truly appreciate the effort and support of the Urology Department in making international rotations an important part of our training.”
Amanda Chi traveled to Vienna, Austria this past April with the generous support of IVUmed’s Traveling Resident Scholar Program and the Andlinger Residency Exchange Fellowship. The Andlinger Residency Exchange is organized by the American Austrian Foundation and encourages training of American residents in Austria or Austrian residents in the U.S. to supplement the residents’ education and broaden their experience through exposure to a foreign healthcare system. Since 1992, this fellowship has supported the exchange of more than 130 residents.

Dr. Chi spent her rotation at Vienna General Hospital (Allgemeines Krankenhaus a/k/a AKH), which is affiliated with the Medical University of Vienna. During her rotation in the urology department, she primarily worked with Dr. Harun Fajkovic and Dr. Shahrokh Shariat, in addition to the urology residents. She was able to observe and participate in daily conferences, operating room activities, clinics, and on the wards. Through her experience, she gained an appreciation of how the cultural mentality can drive patient expectations, from patient-physician interactions to how medical resources are shared. According to Dr. Chi, “Our medical education systems differ greatly in that surgical training in the U.S. tends to be distributed more evenly throughout our education while the system I observed focused on surgical training in latter parts of residency and beyond. I also noticed the frequent use of ultrasound by the physicians in clinic and in the operating room – a practice we are trying to incorporate into our current practice.”

When reflecting on her experience, Dr. Chi said, “This exchange opened my eyes to different ways of caring for patients, and at the same time reinforced how fortunate I am to be training at Northwestern. Of course, Vienna itself was more than icing on the cake. The awe-inspiring architecture, history, arts, and spring festivities of this city were worth a trip on their own.”
James Kashanian: Andrology
James Kashanian is the 2014-15 andrology fellow at Northwestern University Feinberg School of Medicine. He specializes in male infertility and sexual dysfunction. He is involved in both clinical practice and research, with a focus on urologic micro-surgery. He received his medical degree from Temple University School of Medicine in Philadelphia and completed his urology residency training at Maimonides Medical Center in Brooklyn, N.Y.

Yousef Al-Shraideh: Urologic Oncology
Yousef Al-Shraideh is the 2014-15 urology oncology fellow at Northwestern University Feinberg School of Medicine. He received his medical degree from Jordan University of Science and Technology in Jordan and completed his urology residency there. He is Jordanian, Arabian, and European boards certified in urology. Prior to joining Northwestern University, he finished an abdominal organ transplant fellowship at Wake Forest University in Winston Salem, N.C.

Jaclyn Milose: Genitourinary Reconstruction
Jaclyn Milose is a urology fellow specializing in genitourinary reconstruction and prosthetic urology with an emphasis on urethral reconstruction. She received her medical degree at Boston University and completed her urology residency at the University of Michigan in Ann Arbor.
DEPARTMENTAL ACHIEVEMENTS AND AWARDS

Dr. Edward Gong received a Hartwell Individual Biomedical Research Award for his proposal titled, “Harnessing the Regenerative Capability of Bladder Smooth Muscle Progenitor Stem Cells to Restore Function to the Obstructed Bladder.” Eleven individuals representing nine institutions were selected for the award.

Each year, the Hartwell Foundation invites a limited number of institutions in the U.S. to nominate faculty members who are involved in early-stage, innovative and cutting edge biomedical research that has not qualified for significant funding from outside sources. Dr. Gong’s research aims to develop a new treatment for posterior urethral valve in newborn boys that uses a patient’s own stem cells to regenerate bladder tissue and restore normal function.

“Despite learning how to manage these bladder symptoms, we’ve never really come up with anything that will fix the problem,” said Dr. Gong. “Most research is looking to replace the bladder, but those artificial bladders don’t really work well yet.”

Congratulations to Dr. Robert Brannigan and Dr. Joceline Liu for receiving the Vincent J. O’Conor, Jr. Excellence in Teaching Award. This award is given annually at resident graduation and selected by junior medi-

Dr. Elizabeth Yerkes was named Educator of the Year for her outstanding contributions to resident education, as selected by urology residents.

Kelly Ross was also recognized by the faculty and residents for her commitment and dedication to the residency program over the past decade.

Dr. Sabine Sobek also received the Vincent J. O’Conor, Jr. Excellence in Teaching Award, as selected by urology residents for faculty outside of the department.

Dr. Robert Brannigan has been promoted to Professor and Dr. Shilajit Kundu has been promoted to Associate Professor.

Dr. Robert Brannigan was named the Urology Director of the Oncofertility Consortium at Northwestern. “This role is based on Bob’s expertise and contributions to the oncofertility movement. He is well-deserving of this acknowledgement and I look forward to working with him as he builds programs that will support this growing need and discipline,” said Dr. Teresa Woodruff, Director of the Women’s Health Institute.
Each year, the upcoming Chief Residents select a professor from an outside institution to be invited to serve as the Vincent J. O’Conor, Jr. Visiting Professor. This year, the invitation was awarded to Dr. Mark Litwin of UCLA.

The event will take place on March 5 and 6, 2015. The two-day event includes a live surgery broadcast, case presentations, and an informal roundtable discussion. All faculty, residents, and the Visiting Professor attend the department’s annual dinner.

Mark Litwin, MD, MPH, is the Chair of the Department of Urology at UCLA Health. He trained at Harvard and specializes in testicular, bladder, prostate, and kidney cancer. Dr. Litwin’s research focuses on improving quality of care and quality of life in urologic oncology. He leads Urologic Diseases in America (www.udaonline.net), the NIH’s largest effort at documenting the burden of urologic diseases on the American people. He also created and directs IMPACT, a state-funded program that provides free medical care statewide for low-income, uninsured men with prostate cancer (www.california-impact.org).