Vol. 7 | SPRING 2024

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Department of Urology News is published annually by the University of Arizona College of Medicine Department of Urology.

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Design: UAHS BioCommunications
To read this and past issues of Department of Urology Newsletter online, visit: urology.arizona.edu/news-0

HIGHLIGHTS

Message From the Chair:
Humanitarian medical missions trip to Kenya

1 – Clinical Trial Opportunities

Distinguished Visiting Professor:
Li Ming Su, MD

Additions to our Faculty

Upcoming Fight Against Prostate Cancer Golf Benefit, May 11, 2024

Research Updates

FACULTY SPOTLIGHT

Steffan Nawrocki, PhD
Dr. Nawrocki, Director of Research Department of Urology
The Department of Urology at the University of Arizona College of Medicine has continued to grow this past year, with the addition of Steffan Nawrocki, PhD as our Director of Urology research. Dr. Nawrocki’s research focuses on Autophagy in Renal Cell Carcinoma as well as investigation into mechanism of action of experimental antineoplastic agents and approaches to enhance cancer cell death and overcome drug resistance. He is principal investigator of an R01 in Autophagy in Renal Cell Carcinoma. We have also added Anirban Kundu, PhD who brings two Department of Defense grants with him focused on Immunotherapy in Renal Cell Carcinoma. In partnership with the Arizona Cancer Center and our research foundation, we are advancing the field from a basic science perspective while balancing the strong clinical urologic oncology surgical services from a translational perspective.

We have also added four additional faculty and APPs to our clinical faculty. Dr. Priyanka Bearelly is Assistant Professor of Urology, and focuses on Andrology, Male Infertility as well as microsurgical varicocele and microsurgical spermatic cord denervation for chronic orchalgia. Dr. Timothy Roddy is Associate Professor of Urology and focuses on General Urology as well as Erectile Dysfunction and Benign Prostatic Hyperplasia. Two additional APPs, Amy Colvin, NP, as well as Stephanie Roberts, NP have expanded clinical services to the BUMC-South clinic focused on General Urology.

This past June 2023, for two and half weeks, I had the privilege of leading a humanitarian medical mission trip to Kenya, Africa. Being able to help deliver surgical care in a third world country was an amazing experience, and I will never forget my time at the Tenwek Hospital. Plans for this trip were two years in the making and began with seeking out hospitals worldwide with urologic needs and appropriate facilities where those needs could be addressed. We worked with Dr. Emmanuel Kiniga, a young urologist who returned to Tenwek hospital earlier this year after completing his surgical training in Rwanda.

After identifying our destination hospital, our next hurdle was acquiring the needed equipment. We were able to bring disposable flexible cystoscopes and a monitor; several companies donated laparoscopic equipment necessary to perform laparoscopic nephrectomy, percutaneous nephrolithotomy, as well as rigid and flexible ureteroscopy. Our days in the operating theatre were long but gratifying. There is a special group of nurses, residents, and staff at Tenwek. It was striking to witness this group of medical staff who truly wanted to be there, instead of having to be there. We witnessed multiple examples of this team working together; several surgical services had to give up their surgery time in order to hold the Urology camp, and equipment and surgical nurses were shared in order to allow Urology to perform these surgeries during the time we were there.

We were able to perform several urologic surgeries which had never been done at Tenwek Hospital before: the first Laparoscopic Nephrectomy, the first rigid and flexible ureteroscopy, the first transrectal ultrasound and prostate biopsy, and finally a Percutaneous Nephrolithotomy. We opened the doors and demonstrated what is possible, alleviated pain and suffering, and hopefully were a witness to those in Kenya. Dr. Emmanuel Kiniga and the other surgeons in Kenya have the energy, inquisitive mind, joy, and perseverance to continue the work we started.

Finally, our residency program has now been ACGME approved for expansion to 15 residents. We matched three residents last cycle and will continue to grow the program through the AUA Match. The state of the Urology Department is strong, and it is an exciting time to continue to serve the community of Arizona, the Southwest region, the national leadership, and international humanitarian efforts!
Steffan Nawrocki, PhD is a translational scientist with the major goal of developing innovative approaches to treat relapsed/refractory malignancies more effectively. He joined the University of Arizona in March of 2016 and serves as Research Director for the Department of Urology as well as Professor in the Department of Medicine. His laboratory globally focuses on the investigation of the mechanism(s) of action of novel experimental agents and approaches to enhance cancer cell death. Throughout his career, he has worked with a broad range of classes of cancer therapeutics in collaboration with industry partners and academic investigators. Dr. Nawrocki has specific expertise studying anticancer agents that target protein degradation pathways including proteasome and NEDDylation inhibitors, autophagy inhibitors, and therapies that induce endoplasmic reticular (ER) stress. Importantly, his research projects are designed with a “bench to bedside” strategy in mind and have provided the framework for multiple clinical studies exploring novel strategies that target autophagy and protein degradation for cancer therapy. Current research funded by an R01 grant focuses on the investigation of autophagy as a key process that promotes anticancer drug resistance in renal cell carcinoma (RCC). His team has shown that therapeutic autophagic inhibition significantly improves the efficacy of multiple standard of care regimens in a manner that is very well tolerated. Dr. Nawrocki’s group is actively engaged in drug discovery and with his colleagues have designed and patented novel autophagy inhibitors to better target this pathway clinically.

Another research focus is elucidating the proteotoxic and immunomodulatory mechanisms of action of oncolytic reovirus to design rational approaches to enhance conventional anticancer agents and immunotherapy. His group was the first to describe that the clinical formulation of reovirus (Pelareorep) induces ER stress which led to a recently completed clinical trial. They subsequently demonstrated that Pelareorep has potent immunomodulatory effects most prevalently affecting the PD-1/PD-L1 axis. Dr. Nawrocki’s team showed that immune priming with Pelareorep sensitized “immune cold” cancer cells to immune checkpoint inhibitor therapy by making them “immune hot.” This therapeutic approach is currently advancing forward into clinical trials.

In collaboration with the Urology Department Chair Dr. Benjamin Lee, Dr. Nawrocki is establishing novel RCC models derived from Hispanic American and Native American patients. In Arizona, Native Americans and Hispanic Americans experience a 1.9-fold higher incidence of RCC and are 6 times more likely to be diagnosed at a younger age. There is an urgent need for RCC models that accurately represent this patient population to address this health disparity. These unique models will help identify the factors contributing to the high RCC incidence in these communities and facilitate the development of precision therapies tailored to these groups. Recent advancements in immune checkpoint inhibitor therapies have shown promising results in treating RCC. However, the persistence of relapsed and refractory patients underscores the urgent need for innovative treatment strategies. The situation is particularly critical in Arizona, where RCC incidence is on the rise and disproportionately affects the Native American and Hispanic American communities. The lack of laboratory tumor models that were developed from these cancer patients has created a significant gap in our understanding of how RCC impacts these communities who face higher kidney cancer incidence and mortality rates compared to non-Hispanic Whites. The mechanisms behind this disparity remain largely unknown, representing a critical unmet medical need. Dr. Nawrocki’s team aims to bridge this gap by developing novel patient-derived cancer models from patients in our catchment area, who frequently present with aggressive and advanced RCC.

Dr. Nawrocki grew up in Mississippi and has been passionate about science since childhood. He considered a career in environmental toxicology, but after taking a pharmacology class while pursuing his master’s degree, he changed course for a career in medical research. Dr. Nawrocki completed his Ph.D. training at MD Anderson Cancer Center in Houston, Texas, where he met his wife Dr. Jennifer Carew. At the time, Dr. Carew was researching the therapeutic implications of mitochondrial defects in chronic lymphocytic leukemia. Together, they have formed an amazing team to tackle the challenges of developing novel therapeutic approaches to treat cancer and other diseases. Dr. Carew is also a Professor at the University of Arizona and serves as the Director of Translational Research for the Cancer Center, where she and Dr. Nawrocki share a lab. In their free time, Steffan and Jennifer enjoy hanging out with their Norwegian Forest Cats, gem hunting, and watching historical documentaries.

US News & World Report recognition

One of the primary focuses of our department has been urologic oncology and robotic surgery for prostate cancer and kidney cancer. We are pleased to report that Banner University Medical Center – Tucson is currently listed in US News and World Report in the category of “Best Hospitals for Prostate Cancer Care.” Within the state of Arizona, BUMC-Tucson now has a ranking of “High Performing” in Prostate Cancer Surgery; there are only four hospitals who received that recognition. BUMC-Tucson is the only Banner hospital in US News and World Report that achieved the “High Performing” ranking in the category of Prostate Cancer.
Dr. Priyanka Bearelly joined our team as Clinical Assistant Professor of Urology on September 1, 2023. She sees patients at the Urology clinics both at Banner University Medicine North and Banner University Medicine South. Dr. Bearelly has a clinical focus on andrology, as well as general urology. Dr. Bearelly grew up in the Bay Area in California. She then moved to the Northeast and attended Boston University for both undergraduate studies and medical school, graduating from a 7-year combined BA-MD program. She remained in the area and completed her residency at Boston University Medical Center followed by an Andrology Fellowship at Brown University. She comes to us from the University of Utah, Salt Lake City.

During her fellowship, Dr. Bearelly gained extensive training in male infertility and men’s health. Her surgical experience includes use of microsurgical techniques for vasectomy reversals, varicocele repairs, and testicular sperm extractions. She also performs microsurgical spermatic cord denervations for chronic orchialgia. She is also well-versed in penile prosthesis surgery as well as medical and surgical treatments for Peyronie’s disease. Her other clinical interests include endourological treatments for benign prostatic hyperplasia, specifically transurethral resection of prostate (TURP) and Urolift, as well as kidney stones. Dr. Bearelly is board-certified by the American Board of Urology.

In her free time, Dr. Bearelly enjoys spending time with her family and dog, preferably outdoors whenever possible.

Anirban Kundu, PhD earned his Masters of Technology in biotechnology and his PhD in molecular biology, biochemistry, and virology from the Indian Institute of Technology Kharagpur (IIT-Kgp), India. He also served for a year in the Division of Bioengineering at the National University of Singapore. Dr. Kundu’s work at NUS focused on the mathematical modeling of the active transport process through kidney epithelial cells. After his PhD, Dr. Kundu joined the University of Alabama at Birmingham Department of Urology as a postdoctoral trainee in 2016. He has been studying kidney cancer, renal cell carcinoma (RCC) pathobiology for the last seven years. Dr. Kundu studies epigenetic, epitranscriptomic, and metabolic alterations in RCC. He has been using various bioinformatics tools, in vitro and in vivo model systems to identify and intervene in druggable axes in kidney cancer. His research goal is to find metabolic and signaling liabilities in kidney cancer that can be targeted with utmost potency using mono-or-combination therapies.

Dr. Kundu’s research in kidney cancer has yielded multiple original manuscripts published in prestigious, high impact journals such as the Journal of Experimental Medicine, Journal of Biological Chemistry, Matrix Biology, and Journal of Clinical Investigation. He has also earned numerous national and international accolades. Based on his research on kidney cancer, he has been awarded multiple grants from the American Urological Association and the Department of Defense.

In collaboration with the UArizona Department of Urology and Arizona Cancer Center, his independent research lab will work at the interphase of basic and translational cancer biology to answer critical questions regarding kidney cancer progression and novel therapeutic approaches. Dr. Kundu aims to collaborate with investigators from across the institution and the Cancer Center at UArizona to explore expanding research directions in other GU malignancies (e.g., prostate cancer) as well. Dr. Kundu is also committed to training undergraduate, graduate, medical students, residents, and postdoctoral fellows at the forefront of cancer molecular biology.

Sagnik Giri, PhD graduated from the National Institute of Immunology in India where he investigated the role of autophagic protein Atg8 in regulating differentiation and infectivity of Leishmania donovani. He joined the Dudeja lab at UAB Medicine as a post-doctoral fellow in February of 2021 and deciphered the role of repair pathways like Hedgehog and Notch during the progression of chronic pancreatitis, emphasizing their crosstalk with macrophages. As part of Dr. Kundu’s lab at UArizona, Dr. Giri will be working towards understanding the cellular networks affected in renal cell carcinoma to identify different therapeutic targets.
The George W. Drach, MD Distinguished Visiting Professorship in Urology

March 5 & 6, 2024

We are excited to announce Li-Ming Su, MD, FRCS as our Distinguished Visiting Professor for 2024. Dr. Su is the David A. Cofrin Professor of Urologic Oncology and Chair of the Department of Urology at the University of Florida College of Medicine. He completed his urology residency at the New York Presbyterian Hospital-Weil Cornell Medical College in 2000 and a fellowship in robotics and laparoscopic surgery in 2001 at Johns Hopkins Hospital. He served eight years on faculty at the James Buchanan Brady Urological Institute at Johns Hopkins before coming to the University of Florida in 2008 as the Chief of the Division of Robotic and Minimally Invasive Urologic Surgery. In 2016 he assumed the role as chair of the department. His clinical interests are in minimally invasive surgical therapies including robotic surgery for prostate and kidney cancer. Dr. Su’s research focuses on exploring advanced imaging as applied to urologic surgery.

Li-Ming Su, MD, FRCS
David A. Cofrin Professor of Urologic Oncology and Chair of the Department of Urology at the University of Florida College of Medicine

SAVE THE DATE
MAY 11, 2024
FIGHT AGAINST PROSTATE CANCER
GOLF BENEFIT
OMNI TUCSON NATIONAL
2727 W. Club Drive

The University of Arizona, Department of Urology is hosting our 4th annual golf benefit in the Fight Against Prostate Cancer at the highly acclaimed Omni Tucson National Golf Course, on May 11, 2024. Registration begins at 7:00 AM, with a shot gun start at 8:00 AM. Along with an 18-hole round of golf, this event will include a lunchtime symposium during which we will honor cancer survivors, raise awareness about prostate cancer research, and focus efforts to be on the cutting edge of research, education, and state-of-the-art treatments for our patients. Our goal is to provide a beautiful venue for all cancer survivors and those who support them.

To register, please visit: https://bit.ly/FightProstateCancerUA
Hope to see you May 11th!

We’ve moved!

On December 11, 2023, our academic office moved from the fifth floor of the College of Medicine to our new office space on the ground floor. We’re in Suite 2438 just down the hall from the Dean’s Office. Our mailing address remains PO Box 245077, Tucson, AZ 85724.
Research Updates

It has been a successful year for research, publications, and presentations for the Urology Department. Juan Chipollini, MD, has just completed his term as Oncology Section Editor for the American Urological Association core curriculum on penile neoplasms. In addition, he has completed the first cohort of his Phase II Prostate Cancer Trial. This trial assessed the effect of low dose apalutamide to decrease prostate specific antigen (PSA) levels. There was a significant drop in patients’ PSA and due to these results, cohort 2 will be opening to investigate lower doses. He also co-authored a paper focusing on disparities for Hispanic men with prostate cancer. This publication was picked up by UroToday.com, successfully increasing awareness on this topic. Dr. Chipollini was a panel moderator for the global webinar, “Advancements in Bladder cancer” that was sponsored by the American Urological Association and broadcasted live. He also co-authored “Concomitant vs Staged Therapeutic Inguinal Lymphadenectomy in Clinically Node Positive Penile Squamous Cell Carcinoma: Does it Make a Difference?”

Department of Urology Publications:

Opportunities for Clinical Trials and Reconstructive Surgeries

The University of Arizona, Department of Urology continues to enroll patients in an ongoing phase-2a clinical trial of LP-10 for hemorrhagic cystitis. LP-10 is a proprietary liposomal formulation of tacrolimus that is currently being evaluated as a treatment for moderate to severe hemorrhagic cystitis. This agent received FDA Orphan Designation for the use of tacrolimus for the treatment of hemorrhagic cystitis. This multi-site, prospective, open-label, dose escalation clinical trial is now assessing the safety and efficacy of LP-10 at several sites throughout the United States. Dr. Matthew Gretzer is the Principal Investigator and welcomes calls to discuss eligible patients.

In addition to offering opportunities to participate in clinical trials, we are excited and grateful to have surpassed 1000 complex urethral reconstruction cases since 2005. As a subspecialty within Urology, the Reconstruction Division of the Department of Urology depends on referrals from our colleagues within our community for the opportunity to provide this care. Among the different types of complex cases we are routinely performing are membranous urethral strictures following transurethral resection and radiation therapy for prostate cancer. These have been successfully managed both with and without buccal grafting. The real challenge comes at the time of artificial sphincter for these patients. In addition to transcorporal cuff placement techniques, we are investigating the use of an autologous rectus urethral wrap to assist in minimizing the subsequent risk of urethral erosion in these men.

Banner University Medical Center – South Designated Training Center of Excellence for Laser Enucleation of the Prostate

The Department of Urology is proud of our long history of being a high-volume center in the performance of laser prostate enucleation. Dr. Joel Funk started our program in 2009 and in the nearly 15 intervening years our residency program graduates have taken this technique to their various community practices and academic centers. Notably, over 3000 patients have undergone the holmium laser enucleation of the prostate (HoLEP) procedure with our surgeons since 2009. We are fortunate enough to have two other urologists who trained here at Banner-UA as part of our faculty who are also performing HoLEP: David Tzou, MD and Sunchin Kim, MD.

The past year has been an exciting time for our program; nearly 300 patients received this life changing procedure in 2022 and as a result Banner University Medical Center – South ranks in the top five hospitals in the country in terms of case volume. Additionally, BUMC-S has received recognition as a Training Center of Excellence in HoLEP from our industry partner, Boston Scientific Corporation. This designation was limited to only four institutions nationally and recognizes the superior training our residents and guest surgeons receive.

The future is bright for prostate enucleation and translational research into the physiology and pathophysiology of benign prostate obstruction at Banner-UA!
OPPORTUNITY TO GIVE: A new ROBOTIC ENDOUROLOGY FELLOWSHIP and/or FEMALE PELVIC MEDICINE & RECONSTRUCTIVE SURGERY (FPMRS) FELLOWSHIP donation can help support fellowship training. Please make a meaningful contribution today at GIVE.UAFoundation.ORG/UROLOGY FOR QUESTIONS CALL: (520)626-2016

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