

Duke KURe Former Scholars



Hae Woong Choi, PhD
Research Scientist
Department of Pathology
Duke University Medical Center

Dr. Choi earned a BS in Life Sciences and a MS in Biochemistry from Korea University. He then completed his PhD in Pathology at Duke University where he investigated how a virulence factor of Salmonella interferes with the function of innate immune cells. As a postdoctoral fellow, Dr. Choi pivoted his focus from gut infection to bladder infection, seeking to understand how host innate immunity protects a host from lower urinary tract infections (UTIs). He is also participating in contract work with the NIAID to discover novel and highly efficacious vaccine adjuvant candidates.

Dr. Choi's K12 research focuses on providing critical information on the underlying basis for why older women are susceptible to chronic UTIs. Additionally, he plans to develop a UTI vaccine formulated with a novel adjuvant combination to provide boost protective immunity against UTIs for this specific population.



Eric J. Gonzalez, PhD
Postdoctoral Associate
Department of Biomedical Engineering
Duke University Pratt School of Engineering

Dr. Gonzalez earned his BS in Neuroscience from Muhlenberg College. He subsequently completed his PhD in Neuroscience at the University of Vermont where he investigated the mechanisms underlying the development of lower urinary tract symptoms following urinary bladder inflammation. In 2016, Dr. Gonzalez joined the laboratory of Dr. Warren Grill, PhD at Duke University as a postdoctoral associate.

Dr. Gonzalez's current research explores novel methods of neuromodulation to improve bladder function. His studies include evaluating a device-based solution to stimulate peripheral nerve discharge and restore efficient bladder emptying. He is also determining the role of urethral sensory feedback in maintaining voiding efficiency in humans.



Tatyana (Tanya) Sysoeva, PhD
Research Scientist
Department of Biomedical Engineering
Duke University Pratt School of Engineering

Tanya completed her undergraduate studies at the Moscow State University and got her PhD degree at the Pennsylvania State University in 2011 working on structural and biophysical characterization of bacterial protein complexes. She proceeded with the postdoctoral training in the Department of Molecular and Cellular Biology at Harvard University. As the postdoc with Dr. Briana Burton Tanya investigated how bacteria secrete toxins and acquire novel traits via exchange of genetic material. In 2015, Tanya joined the group of Dr. Lingchong You at Duke University to continue her studies of bacterial genetic exchange that is critical to spread of antibiotic resistance gene plaguing modern medicine.

As part of the Duke KURe program, Tanya focuses on the problem of antibiotic resistant uropathogens. She applies her basic research background to analyze ability of the clinical pathogens to contribute to the spreading of drug resistance traits. Her KURe project aims to understand the mechanisms and regulation of gene exchange by uropathogens in context of human lower urinary tract environment and its commensal microbiome. This project sets a stage for future studies with the far-reaching goal of developing strategies to curb the spread of multidrug resistant urinary tract infections.



James (Jim) A. Hokanson, PhD
Postdoctoral Associate
Department of Biomedical Engineering Duke
University Pratt School of Engineering

Dr. Hokanson earned B.S. degrees in Biomedical Engineering and Electrical Engineering from Washington University in St. Louis. He completed his Ph.D. in Bioengineering at the University of Pittsburgh where he focused on the design of stimulation paradigms to provide artificial somatosensory feedback to amputees via electrical stimulation of the peripheral nervous system. Dr. Hokanson arrived at Duke University as a postdoctoral associate in the spring of 2014 to work with Dr. Warren

Grill on developing neuroprosthetics to treat lower urinary tract dysfunction.

Dr. Hokanson's K12 research focused on the treatment of Overactive Bladder symptoms via electrical stimulation of the pelvic and pudendal nerves. To this end, he examined changes in lower urinary tract function in different rodent models of overactive bladder as well as the response of these models to nerve stimulation. Results from this work are being used to help guide the design of new therapies to treat Overactive Bladder symptoms.

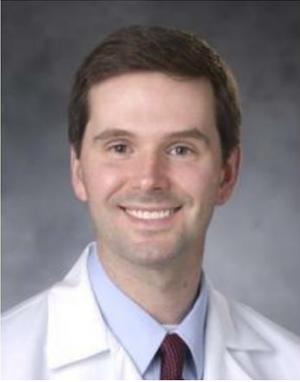
Dr. Hokanson was awarded an AUA Research Scholar grant that started July 2017. This new work focuses on electrical stimulation of the urethra to prevent urgency incontinence episodes. The study will consist of both animal and human testing.



Nazema Y. Siddiqui, MD, MHSc
Assistant Professor
Department of Obstetrics and Gynecology
Director of Research
Urogynecology & Reconstructive Pelvic Surgery
Duke University School of Medicine

Dr. Siddiqui completed her undergraduate studies, which included an Honors thesis in Cell Biology, at the University of Michigan in Ann Arbor. She then obtained her medical degree (MD) at the University of Michigan, followed by residency training in Obstetrics & Gynecology at Metro Health/Cleveland Clinic in Cleveland, Ohio. She completed her medical training with a fellowship in Female Pelvic Medicine & Reconstructive Surgery at Duke University, where she simultaneously obtained a Master's Degree in Clinical Research (MHSc). She joined the Duke faculty in 2010, where she remains in the Division of Urogynecology & Reconstructive Pelvic Surgery.

Dr. Siddiqui's research focuses on pelvic floor disorders, with a primary interest in phenotyping overactive bladder (OAB). As such, her KURe research involved studying animal models of OAB and insulin resistance. She also performed a pilot study in humans assessing the epigenomics of OAB and insulin resistance. She is continuing this work on an independent K23 where she is using systems biology to study insulin resistance associated OAB.



Jonathan C. Routh, MD, MPH
Associate Professor of Surgery (Urology) & Pediatrics
Division of Urology
Duke University School of Medicine

Dr. Routh completed his undergraduate studies at North Carolina State University with degrees in Biochemistry (B.S.), Chemistry (B.A.), and French Language and Literature (B.A.). He subsequently obtained his M.D. from University of North Carolina at Chapel Hill School of Medicine. He then completed his urology residency at the Mayo Clinic. He finished his training at Boston Children's Hospital and Harvard Medical School, where he completed simultaneous fellowships in Pediatric Urology and Pediatric Health Services Research while also obtaining a Master's of Public Health degree from the Harvard School of Public Health. Following completion of his training, Dr. Routh joined the Duke Urology faculty in 2011 and became a KURe Scholar in 2013.

Dr. Routh's KURe research focused primarily on clinical care variation, surgical outcomes, and health state utility estimation for children with vesicoureteral reflux. His current research focuses primarily on health care delivery issues and utility estimation among children being treated for vesicoureteral reflux, urolithiasis, genitourinary malignancies, and neurogenic bladder. His research is currently funded by a K08 career development award from NIDDK in addition to institutional, industry, and foundation awards.