Seminars by Chicago KUH FORWARD

Monday, November 22, 2021
11:00 AM – 12:00 PM Central Time

Host institution: Northwestern University

Join Zoom Meeting: https://northwestern.zoom.us/j/98284850748
Meeting ID: 982 8485 0748

AGENDA

11:00 – 11:05 AM  Welcome and logistics  David Klumpp, PhD
11:05 – 11:55 AM  Presentations
Microglial Activation in Pelvic Pain  Afrida Rahman-Enyart, PhD
Mast cells and its multifunctional role in the prostate  Praveen Thumbikat, PhD
Psychosocial Assessment and Intervention within Urology and Urogynecology  Bayley Taple, PhD
11:55 AM – 12:00 PM  Closing remarks  David Klumpp, PhD

SPEAKERS

The faculty host for this seminar is Dr. David Klumpp, Professor of Urology and Microbiology-Immunology in the Feinberg School of Medicine and the Anthony J. Schaeffer MD Professor of Urology at Northwestern University.

Afrida Rahman-Enyart, PhD
Postdoctoral Fellow, Dr. David Klumpp Laboratory
Department of Urology, Northwestern University

Bio: Dr. Rahman-Enyart received a dual PhD in Neuroscience and Psychology (Molecular/Systems Neuroscience) from Indiana University-Bloomington. Her background is in the cellular/molecular mechanisms of neuronal development, with a focus on signaling of the ErbB4 receptor tyrosine kinase in interneuronal differentiation. Her current research interests focus on the role of the gut-brain axis in pelvic pain and cognition, specifically the role of microglial activation in response to gut dysbiosis in mouse models of pelvic pain.

Title: Microglial Activation in Pelvic Pain

Abstract: Interstitial cystitis/bladder pain syndrome (IC/BPS) is a devastating condition of chronic pelvic pain and urinary dysfunction. We have previously shown that mice deficient for the lipase acyloxyacyl hydrolase (AOAH) develop pelvic allodynia and exhibit symptoms and comorbidities consistent with IC/BPS, as well as gut dysbiosis. Microglia, resident immune cells of the central nervous system (CNS), respond to changes in the gut microbiome and can regulate neuropathic pain. Additionally, microglia express toll-like receptors (TLRs), including TLR4, which are activated by microbial components. We have previously shown that AOAH-deficient mice exhibit increased gut
Title: Mast cells and its multifunctional role in the prostate

Abstract: The pathogenesis of LUTS associated with BPH can be broken down into three facets: the epithelial compartment where hyperplasia of epithelial cells occurs, the stromal compartment where immune cell infiltration and inflammation causes fibrosis, and the smooth muscle compartment where smooth muscle cell contraction occurs. Using an apathogenic E. coli (CP1) instillation based mouse model which results in prostate inflammation, fibrosis, and urinary dysfunction, we recapitulate some, but not all, of the pathognomonic clinical features associated with benign prostatic hyperplasia (BPH) and lower urinary tract symptoms (LUTS). Using this mouse model, we describe the importance of mast cells in regulating these multiple facets involved in the pathophysiology of LUTS. Therapeutic targeting of mast cells resulted in reduced prostate fibrosis, less infiltration of immune cells and decreased inflammation, and reduced signs of prostate smooth muscle contraction. All these effects culminate in a significant alleviation of urinary dysfunction in these mice. This study suggests the potential for mast cell inhibition as a therapeutic that prevents and reverses pathology and associated symptomology.

Bayley Taple, PhD
Postdoctoral Fellow, Center for Behavioral Intervention Technologies
Department of Preventive Medicine, Northwestern University

Bio: Dr. Taple earned her PhD in Clinical Psychology from Northwestern University Feinberg School of Medicine. Her research interests comprise multidisciplinary psychosocial assessment and intervention within obstetrics and gynecology, the influence of trauma on health, and patient-reported outcomes. Her work as a NIMH-funded T32 postdoctoral fellow in digital mental health focuses on technology-supported perinatal mental health care. During her graduate studies, she completed a NIDDK-funded T32 predoctoral fellowship in Urology. Her dissertation examined the impact of trauma history and depression on chronic pelvic pain severity. Dr. Taple has a background in health psychology and women's behavioral health; she completed her residency at Rush University Medical Center. In addition to her research, she currently provides clinical services at Northwestern Medicine through the Obstetrics Infectious Disease Clinic as well as the COMPASS Perinatal Collaborative Care Clinic.
Title: Psychosocial Assessment and Intervention within Urology and Urogynecology

Abstract: Physical symptoms (e.g., pain) and associated distress are often un- or undertreated for patients presenting in the context of urology and urogynecology. Previous research has demonstrated high rates of psychopathology, including anxiety, depression, and trauma-related symptoms, among patients with chronic pelvic pain as well as pelvic floor disorders. This talk encompasses three projects focused on understanding and treating the psychosocial factors associated with urologic and gynecologic conditions. 1) Investigating the relationships between depression, trauma, and pain severity in urologic chronic pelvic pain syndromes (UCPPS). 2) Beta testing of a mobile app for the assessment of psychosocial factors and pain symptomatology in patients with chronic pelvic pain via ecological momentary assessment. 3) A pilot randomized controlled trial for women with pelvic floor disorders and anxiety, comparing cognitive behavioral therapy to supportive therapy, to examine anxiety as a potential mechanism of increased urinary symptoms. Altogether findings inform future research of psychosocial mechanisms of pelvic health conditions and provide a strong foundation for studies in the domain of tailored patient care.

Chicago KUH FORWARD is a NIDDK-funded interdisciplinary training program for pre- and postdoctoral trainees in basic, translational, or clinical research in the fields of kidney, benign urologic, and benign hematologic diseases across Chicago. Partnering institutions include Northwestern University, Loyola University, Lurie Children’s Hospital, Rush University, University of Chicago, and University of Illinois at Chicago. NIH U2CDK129917 and TL1DK132769

Seminars by Chicago KUH FORWARD is a forum that brings together our city-wide KUH research community to learn about new and existing cross-cutting tools and promote cross talk among scientists at Chicago KUH FORWARD institutions. Seminars are virtual and open to all levels of researchers interested in advancing KUH training and research. Seminar recordings may be made available upon request.

Your participation in Chicago KUH FORWARD seminars and events helps us maximize integration and promote a true trainee community that engages, recruits, prepares, and sustains the next generation of kidney, urology, and hematology researchers. Any predoctoral or postdoctoral fellow or early career investigator interested in presenting at a future KUH Seminar can let us know by sending a message to chicago.kuhforward@northwestern.edu.

Please take the time to provide your feedback on Chicago KUH FORWARD programs. Seminar attendees will be given the opportunity to complete a brief survey at the end of the seminar.

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