

Urinary Tract Infection

Global Alliance

information@utiga.org

<https://utiga.org>

5th Clinical and Scientific Advances in Urinary Tract Infections

July 19-21, 2024

**Hyatt Regency Columbus
Columbus, Ohio**



**NATIONWIDE
CHILDREN'S®**

When your child needs a hospital, everything matters.

Friday, July 19

All conference sessions will be held in the Hayes Room, Hyatt Regency Columbus, First Floor, unless otherwise noted.

**Indicates the speaker will be presenting virtually.*

- 3:00 – 7:00 p.m. **Registration**
Foyer of the Hayes/McKinley Conference Rooms - First Floor
- 4:00 – 5:45 p.m. **Opening Reception and Cash Bar**
Foyer of the Hayes/McKinley Conference Rooms - First Floor
- 5:45 – 6:00 p.m. **Welcome, Opening Remarks and Announcements**
Joanne Turner, PhD, Abigail Wexner Research Institute at Nationwide Children's
Molly Ingersoll, PhD, Institute Pasteur

Opening Keynotes:

- 6:00 – 6:35 p.m. **Antibiotic Resistant Uropathogenic E. coli – It's all About the Clones**
Mark Schembri, PhD, University of Queensland
- 6:35 – 7:10 p.m. **Recurrent UTI: Current Concepts and Future Directions**
Ann Stapleton, MD, University of Washington
- 7:10 – 7:45 p.m. **Two's a Party, Three's a Crowd? Implications of Polymicrobial Bacteriuria in Patients With Long-term Catheters**
Chelsie Armbruster, PhD, University of Buffalo

Lifetime Achievement Presentation

- 7:45 – 8:20 p.m. **UPEC: From MRHA to Gene Expression During UTI**
Harry Mobley, PhD, University of Michigan

..... **Day One Concludes**



Saturday, July 20

All conference sessions will be in the Hayes Room, Hyatt Regency Columbus, First Floor, unless otherwise noted.

**Indicates the speaker will be presenting virtually.*

7:00 a.m. – 5:00 p.m. **Registration**

Foyer of the Hayes/McKinley Conference Rooms - First Floor

Panel Discussion: Diagnosis of UTI

Moderator: Barbara Trautner, MD, PhD, Baylor College of Medicine

8:00 – 8:15 a.m. **What is Acute Cystitis (in women) and how do we Diagnose it?**

Nazema Siddiqui, MD, Duke University

8:15 – 8:30 a.m. **What is Asymptomatic Bacteriuria and how do we Diagnose it?**

Barbara Trautner, MD, PhD, Baylor College of Medicine

8:30 – 8:45 a.m. **What is a Contaminated Urine culture, and how do we Distinguish This From True Bacteriuria?**

Thomas Mac Hooton, MD, University of Miami

8:45 – 9:00 a.m. **What is Prostatitis, and How Often Does it Occur With Male Cystitis?**

Dimitri Drekonja, MD, University of Minnesota

9:00 – 9:10 a.m. **Discussion**

9:10 – 9:25 a.m. **Break**

Session I: Microbial Pathogenesis

Moderator: Sarguru Subash, DVM, PhD, Texas A & M University

9:25 – 9:45 a.m. **Niche-specific Requirements for UPEC During UTI**

Maria Hadjifrangiskou, PhD, Vanderbilt University Medical Center

9:45 – 10:05 a.m. **Gain of Function Enterococcal Cytolysin Targets Bladder Epithelial Cells and the Urinary Microbiota**

Nicole De Nisco, PhD, University of Texas - Dallas

10:05 – 10:25 a.m. **Unveiling CAUTIs' Achilles Heels to Develop Efficient Intervention Strategies**

Ana Flores-Mireles, PhD, Notre Dame University

10:25 – 10:32 a.m. **Delineating the Pathogenesis of *Pseudomonas aeruginosa* Urinary Tract Infections**

Seth Reasoner, Vanderbilt University Medical Center

- 10:32 – 10:39 a.m. **The Effects of Diabetes Mellitus and sex on the Susceptibility to Urinary Tract Infection Susceptibility**
Bidhan Gautam, University of Louisiana
- 10:39 – 10:46 a.m. **Dysregulated Host Fibrinolysis Exacerbates Catheter Associated Urinary Tract Infection Severity and Predisposes Hosts to septicemia From Mono- and Polymicrobial Infections**
Jonathan Molina, MS, University of Notre Dame

Session II: Treatment of UTI

Moderator: Christina Ching, MD, The Abigail Wexner Research Institute

- 10:50 – 11:10 a.m. **Avoiding the Blame Game: UTI Management in Individuals With Neurogenic Bladder**
Hillary Copp, MD, University of California San Francisco
- 11:10 – 11:30 a.m. **Pediatric UTI - How Long to Treat?**
Joshua Watson, MD, Nationwide Children's Hospital
- 11:30 – 11:50 a.m. **Morphological Plasticity as a Therapeutic Target**
Sheryl Justice, PhD, The Ohio State University
- 11:50 – 11:57 a.m. **Vaginal Lactobacillus Directly Inhibits and Modulates Host Immune Response to Uropathogenic E. coli in a Human Vaginal Epithelial Organoid Model**
Samantha Ottinger, MS, Baylor College of Medicine
- 11:57 – 12:04 p.m. **Dual function of N-acetyl cysteine in Eradicating P. aeruginosa Catheter-associated UTIs**
Arthika Manoharan, PhD, The University of Sydney
- 12:04 – 12:11 p.m. **Identification of A Copper-responsive Small Molecule Inhibitor of Uropathogenic E. coli**
Braden Hanson, Texas A & M University
- 12:11 – 1:00 p.m. **Lunch Provided in Foyer of the Hayes/McKinley Conference Rooms - First Floor**
- “Lunch and Learn” Alliance for Patient-centered UTI Research UTI Health Alliance, Live UTI Free, Chronic UTI AUSTRALIA, CUTIC**
Melissa Kramer, BA
Laura Helgeson, BA

Session III: Comorbidities With UTI

Moderator: Iryna Crescenze, MD, The Ohio State University Wexner Medical Center

- 1:00 – 1:20 p.m. **Asymptomatic Bacteriuria and Urinary Tract Infection in Pregnant Women***
Suzanne Geerlings, MD, Amsterdam UMC, the Netherlands
- 1:20 – 1:40 p.m. **Urinary Tract Infections in Renal Transplantation***
Frederike Bemelman, MD, Amsterdam UMC, the Netherlands
- 1:40 – 2:00 p.m. **Urinary Tract Infections in Pediatrics**
Emily Stonebrook, MD, Nationwide Children's Hospital

SUPER Summer Students

Moderator: Brian Becknell, MD, PhD, Nationwide Children's Hospital

- 2:00 – 2:05 p.m. **PTPN1 Deletion Maintains Insulin Receptor Signaling and Enhances UTI Immunity**
Drew Kauffman, Tulane University
- 2:05 – 2:10 p.m. **Characterizing the Phagocyte Response During Experimental Pyelonephritis**
Rishil Patel, The Ohio State University
- 2:10 – 2:15 p.m. **Roles for RNase3 and RNase6 in the Phagocyte Antimicrobial Response to UTI**
Macie Kercsmar, University of Tennessee
- 2:15 – 2:20 p.m. **Insulin Resistance Suppress Urinary Innate Immune Defenses**
Natalie Holdsworth, Ohio University College of Medicine

Poster Session

- 2:20 – 4:15 p.m. **Please Visit Posters in the McKinley Room - First Floor**

Session IV: Immunological Responses to UTI

Moderator: Molly Ingersoll, PhD, Institut Pasteur

- 4:15 – 4:35 p.m. **Tissue-resident Memory T cells Mediate Mucosal Immunity to Recurrent Urinary Tract Infection**
Matthieu Rousseau, PhD, Institut Cochin
- 4:35 – 4:55 p.m. **The Pros and Cons of Neutrophils in UTI**
Katy Patras, PhD, Baylor College of Medicine

- 4:55 – 5:15 p.m. **Innate Immune Modulation to Treat Bacterial Infections, Including Antibiotic-resistant Strains**
Inès Ambite, PhD, Lund University
- 5:15 – 5:22 p.m. **Neutrophil NADPH Oxidase (NOX2) Orchestrates Immunity Against Urinary Tract Infections While Fine-tuning Inflammation via the Nrf2-Keap1 System**
Israel Cotzomi-Ortega, PhD, Nationwide Children's Hospital
- 5:22 – 5:29 p.m. **Investigating the Role of Irg1/itaconate Axis in the Epithelial and Immune Compartments of the Aging Bladder in Response to a UTI**
Adwaita Parab, MS, Baylor College of Medicine
- 5:29 – 5:36 p.m. **Obesity Induced Uroepithelial Immune Regulation: A Catalyst for Urinary Tract Infection**
Laura Schwartz, PhD, Nationwide Children's Hospital
- 5:40 – 6:30 p.m. **Adjourn With Cash Bar and Appetizers**
Foyer of the Hayes/McKinley Conference Rooms, First Floor

..... **Day Two Concludes**

Sunday, July 21

All conference sessions will be held in the Hayes Room Hyatt Regency Columbus, First Floor, unless otherwise noted.

**Indicates the speaker will be presenting virtually.*

7 a.m. – 12:00 p.m. **Registration**

Foyer of the Hayes/McKinley Conference Rooms - First Floor

Session V: Selected From Abstracts

Moderator: Laura Schwartz, PhD, The Abigail Wexner Research Institute

- 8:00 – 8:15 a.m. **Characterize Interactions Between Enterococcus faecalis and Klebsiella pneumoniae in Polymicrobial Catheter-Associated Urinary Tract Infections**
Zongsen Zou, PhD, Washington University in St. Louis
- 8:15 – 8:30 a.m. **The Microbial and Biochemical Ecology of the Urogenital Microbiome is Associated With Recurrent UTI in Postmenopausal Women**
Michael Neugent, PhD, The University of Texas at Dallas
- 8:30 – 8:45 a.m. **The Ins and Outs of Proteus mirabilis Sugar Transport During Urinary Tract Infection**
Allyson Shea, PhD, University of South Alabama
- 8:45 – 9 a.m. **Exploring the Impact of Polymicrobial Biofilm Communities in Urinary Tract Infections (UTIs) Using a Urine-tolerant Human Urothelial Organoid Model (3D-UHU)**
Ramon Garcia Maset, PhD, University College of London
- 9:00 – 9:15 a.m. **Sex Effects on Human Urine Regulate Klebsiella pneumoniae Capsular Polysaccharide Properties**
Brooke Ring, MPH, University of Toledo

Poster Session

9:15 – 10:30 p.m. **Please Visit Posters in the McKinley Room - First Floor**

Session VI: New Frontiers in UTI

Moderator: Sheryl Justice, PhD, The Ohio State University

10:30 – 10:50 a.m. **Why are UTIs so Hard to Diagnose and Treat? Hints From a Human Urothelial Microtissue Model**
Jennifer Rohn, PhD, University College London

10:50 – 11:10 a.m. **Pain in Autistic People: When Pain Communication Could Impede Diagnosis**
Michelle Failla, PhD, The Ohio State University

11:10 – 11:30 a.m. **Neuro-immune Interactions Underlying Bladder Hypersensitivity During UTI***
Luke Grundy, PhD, Flinders University

11:30 – 11:50 a.m. **Psychological Perspectives on Recurrent UTI**
Anne Dawson, PhD, Nationwide Children's Hospital

11:50 a.m. **Closing Remarks and Adjournment**
Sheryl Justice, PhD, The Ohio State University
Maria Hadjifrangiskou, PhD, Vanderbilt University Medical Center

..... Day Three Concludes



Awards

2024 Urinary Tract Infection Global Alliance Travel Awards

International Awardees

Ramon Garcia-Maset, University College of London

Arthika Manoharan, The University of Sydney

Benjamin Sellner, University of Basel

Domestic Awardees

Surbhi Gupta, University of Michigan

Benjamin Hunt, University of Buffalo

Bishnu Joshi, Baylor College of Medicine

Michael Neugent, University of Texas - Dallas

Zongsen Zou, Washington University in St. Louis



Clinical Definitions

Asymptomatic bacteriuria (ABU): Bacteria in the urine in the absence of symptoms

Blood urea nitrogen (BUN): Blood test measuring nitrogen that comes as a result of urea; reflects kidney and liver function

CAUTI: “Catheter - associated urinary tract infection”

Creatinine: Produced as a result of muscle metabolism; reflects kidney function

Cystatin C: Protein used to measure glomerular filtration rate; reflects kidney function

Cystitis: Inflammation of the bladder; can be caused by infection

Cystoscopy: Minimally invasive direct visualization of the inside of the bladder with a small lens placed through the urethra

DMSA: An imaging study to evaluate for renal scarring

Hematuria: Blood in the urine

Hydronephrosis: Urine in the renal pelvis that is not normally seen; can be concerning for obstruction or urinary reflux

Myelomeningocele: Most serious form of spina bifida where both the spine and the spinal cord are abnormal. Specifically, the spine did not form or close normally exposing the spinal cord on the back.

Neurogenic bladder: Bladder dysfunction due to neurologic damage or abnormality

Obstructive uropathy: Urinary tract obstruction that can affect kidney function

Pyelonephritis: Inflammation of the kidney usually caused by infection

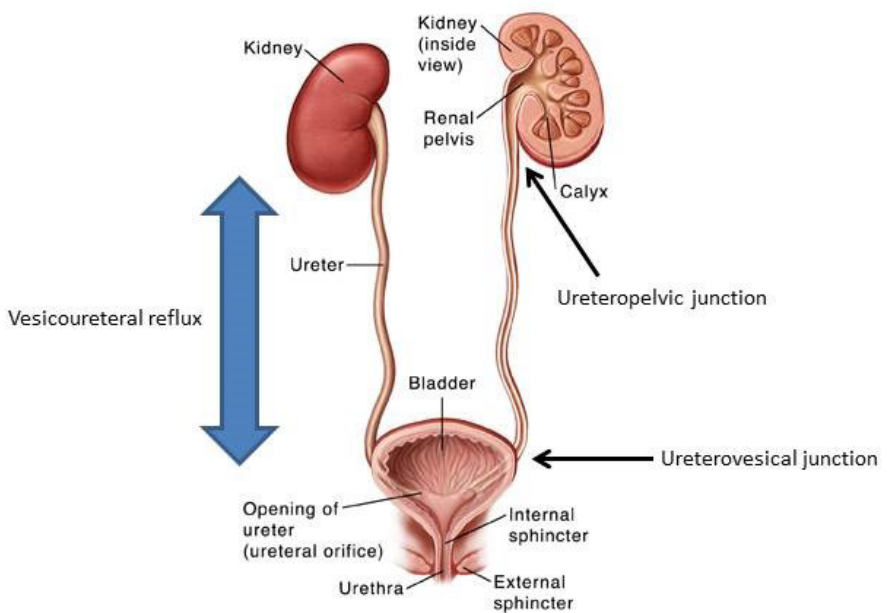
Spina bifida: Developmental defect of the neural tube

Ureteropelvic junction: The transition point of the renal pelvis to the ureter

Ureterovesical junction: The transition point of the ureter to the bladder

VCUG: “Voiding cystourethrogram” – a study to evaluate for vesicoureteral reflux

Vesicoureteral reflux (VUR): Urine traveling from the bladder back up to the kidney



<http://www.saintlukeshealthsystem.org/health-library/anatomy-pediatric-urinary-tract>

Basic Science Definitions

Adhesins/Fimbria/Pili: Proteins on the bacterial surface that mediate binding to host cells. Fimbria/pili are typically complex multimeric hair-like structures that extend far beyond the bacterial surface.

Biofilm: An organized community of bacteria with a distinct architecture with a matrix composed of proteins, DNA, lipids and complex sugars. An important bacterial lifestyle during infection.

Capsule: A polysaccharide layer on the external surface of the bacterium that aids in protection from environmental stressors.

Chimera: A genetic hybrid, typically refers to two or more genes (or parts of genes) fused together to make a single protein.

Clade: A group of organisms evolved from a common ancestor.

Cytokines: Small molecules produced by epithelial and immune cells that are a category of signaling molecules that mediate and regulate immunity, inflammation and hematopoiesis.

Genomics: The analysis of the entire genetic content, whether human or bacterial. Typically, the focus is on gene encoding sequences.

Macrophages: Specialized phagocytic cells of the innate immune response that are stationary (resident) in the tissues and can be recruited to the site of infection. Responsible for removal of bacteria and cellular debris.

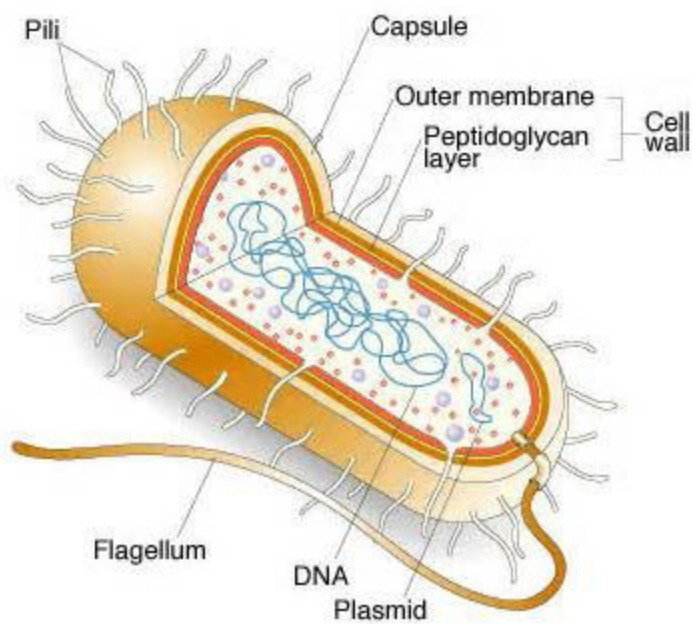
Neutrophils: Specialized phagocytic cells that are the first to be recruited to the site of infection to remove bacteria.

Operons: Two or more bacterial genes that are transcribed as a single unit and often encode for proteins that act in concert or in a complex.

OTU: “Operational taxonomic unit” – classifies groups of closely related individuals, particularly in microbiome studies.

SNP: “Single nucleotide polymorphism” – a form of genetic variation in which a single nucleotide in the DNA is changed.

Transposon: A mobile genetic element containing an antibiotic resistance gene. These elements randomly insert into the chromosome and are exploited by researchers to identify mutants that lose important phenotypes.



General Announcements

Continuing Education



In support of improving patient care, this activity has been planned and implemented by Nationwide Children's hospital and Urinary Tract Infection Global Alliance. Nationwide Children's Hospital is jointly accredited by the American Nurses Credentialing Center (ANCC), the Accreditation Council for Pharmacy Education (ACPE), and the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for the healthcare team.

Credits – *AMA PRA Category 1 Credits™* (11.75)

Medicine

Nationwide Children's Hospital designates this live activity for a maximum of 11.75 *AMA PRA Category 1 Credit(s)™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Hotel

The 5th Clinical and Scientific Advances in Urinary Tract Infections Conference sessions will be located at:

Hyatt Regency Columbus

350 North High Street
Columbus, Ohio 43215

(614)463-1234

A room block has been secured in the Hyatt Regency for conference attendees. An additional room block has been secured at the Hilton Columbus Downtown, 402 North High Street, (614)384-8600. The Hyatt can easily be accessed from the Hilton through the connected Columbus Convention Center.

Hotel- Conference Spaces

The conference will be held on the First Floor of the Hyatt Regency Columbus in the following spaces:

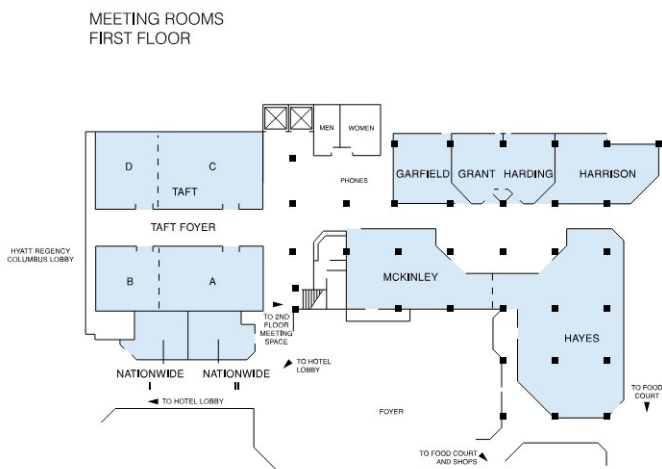
Hayes Room: plenary sessions, lunch and learn on Saturday

McKinley Room: poster sessions

Foyer of Hayes/McKinley rooms: conference registration, receptions Friday and Saturday evenings, exhibit hall

Restrooms: located across the hall from the McKinley room

Lactation Room: please see a representative at the registration desk for assistance



Meals and Beverages

Friday

Please join us for the opening reception (appetizers and a cash bar) from 4 – 5:45 p.m. in the foyer of the Hayes/McKinley conference rooms on the first floor of the Hyatt Regency.

Saturday

Beverages will be provided throughout the day,

Lunch and Learn will be in the Hayes Room, 12:11 – 1:00 p.m. (lunch will be provided for pick-up in the foyer of the Hayes/McKinley conference rooms)

Please join us for a reception (appetizers and a cash bar) in the foyer of the Hayes/McKinley conference rooms, directly following the day's sessions.

Sunday

Beverages will be provided throughout the day.
In-room delivery is available for guests staying at the hotel.

Additional food and beverage options

Perks Coffee & More: on the second floor of the Hyatt, serving snacks, beverages, and to-go meals

Market Stand Café: the Hyatt's breakfast and lunch restaurant located on the second floor

Big Bar on 2: open late afternoon through late evening, this bar and restaurant on the second floor of the Hyatt serves dinner and drinks

Convention Center: connected to the hotel and accessible just past the conference spaces on the first floor, the Columbus Convention Center hosts a Starbucks, food court and shops

Columbus is home to many excellent restaurants! Find more information about local restaurants in Downtown Columbus at Experience Columbus: www.experiencecolumbus.com/neighborhoods/downtown/restaurants/

Parking

Valet parking with in and out privileges is available (the garage height restriction is 6'8") for \$40 per day.

Off-site self-parking is available in the Chestnut Street Garage (44 East Chestnut Street). One block south of the hotel and accessible via an enclosed walkway. Follow signs to the Hyatt Regency located throughout the walkway. For overnight guests, parking can be charged to your room for \$22 per day. Payment is also available at pay stations in the garage; rates will vary.

Wi-Fi

Guests staying at the hotel will have access to free internet in sleeping rooms. Please see information provided by the hotel at check-in for more details.

Wi-Fi will also be provided for all conference attendees in conference spaces. Login information will be provided at the registration desk and throughout the event. Please see a representative at the registration desk if you have questions or need assistance.

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