

NOVEMBER 2021 Uromicrobiota Research Interest Group - 11/29/2021

QUICK REVIEW: The JULY 2021 “kickoff” discussion (a “CAIRIBU Connections” virtual forum) included investigators from various disciplines and fields including clinical urology, urogynecology, and nephrology; microbiology; bacteriology; virology; bioinformatics and computer/data science, and others. Seven discussants started discussion by describing themselves and their research. A total of 39 individuals participated. **Major points of discussion focused on what is known and what is unknown related to the urinary tract microbiota.** Key knowledge gaps were captured on a “mind map” (attached, p. 4). **JULY SUMMARY [HERE](#).** **After the July meeting, a bibliography of uromicrobiome-related publications was created,** drawing upon those authored by participants at the July and September 2021 meetings. This bibliography is available on the intranet page of the CAIRIBU website, “CAIRIBU Connect.” **[LINK HERE](#).**

QUICK REVIEW: At the SEPTEMBER 2021 discussion, we identified areas of immediate and potentially collaborative interest. There were 25 participants. **Specific actions/activities were suggested** to give “form” to this group. **“Actionable” items** with which the CAIRIBU Interactions Core could assist were identified and could provide support and coordination. **SEPTEMBER SUMMARY [HERE](#).**

CALENDAR OF MICROBIOME/UROBIOME AND OTHER (POTENTIALLY) RELATED EVENTS

START DT	END DT	NAME	WHERE	INFO
2/13/2022	2/17/2022	Keystone Symposia: The Human Microbiome – Ecology & Evolution	Banff, AB, Canada	Website
3/07/2022	3/09/2022	Center for Microbiome Innovation International Microbiome Meeting ¹	San Diego	Website
4/02/2022	4/05/2022	Experimental Biology Annual Meeting	Philadelphia	Website
5/13/2022	5/16/2022	American Urological Association Annual Meeting	New Orleans	Website
6/09/2022	6/13/2022	American Society for Microbiology Annual Meeting	Washington, DC	Website
8/01/2022	8/05/2022	2022 Molecular Genetics of Bacteria and Phages Meeting	Madison, WI	Website

¹ **Urobiome** is **Day 3** (Wed., 3/09/2022). This is from the CMI website: *On the third day of this event, researchers will address the emerging science of the Urobiome and recently discovered implications for human health, including UTI, urinary incontinence, and OAB*

NOVEMBER 2021. There were 20 participants. Major points from the September discussion were reviewed. We have a growing list of people to whom invitations are sent, now numbering about 100. We first went around and introduced ourselves to each other and noted a very **broad cross-section of disciplines**. These included:

- Pediatric hospitalist
- Transplant nephrologist
- Veterinarian
- Microbiologists
- Microbial ecologist
- NIDDK Program Officer
- Urologists
- Scientists
- Postdoctoral researchers and graduate students
- MD/PhD and other medical school students

Various **research interests, techniques, and tools** were reported and included:

- Gut microbiome
- Urinary tract microbiota
- Spatial and temporal dynamics
- Bioenergetics
- Imaging (PET, MRI)
- Microbial genomics
- Metabolomics
- Microbial physiology
- Artificial urine
- Fungi
- Phages, plasmids
- Microbe-microbe interactions
- Antimicrobial resistance
- Urinary tract infection

GETTING TO KNOW WHO’S WHO, WHAT’S WHAT, AND WHERE THINGS ARE AT. One of the “actionable” items from the September discussion was **to get to know each other better**. We discussed 2 ways to do this: (1) take 15 min or so at the beginning of each meeting to hear from a few individuals about

what they are currently doing; and (2) create a compendium of individuals and information about them. One purpose of this would be to identify individuals with specific expertise and knowledge for putting together research collaborations. Another purpose would be to ultimately assess where there might be gaps in knowledge, such as for certain microbial species. Yet another purpose could be to identify resources that could be shared across individuals and laboratories. **We decided that each person should answer the same set of questions.** Candidate questions include:

- What microbes do you study?
- What techniques do you use to study microbes?
- What media do you use?
- What models and model systems do you use (or are developing)?
- Do you culture and/or grow specific microbes?
- Do you study immune system interactions?
- Where do you primarily publish?

There may be other important questions to add to list. Kris P will circulate ideas prior to next scheduled discussion.

WHERE ARE THE RESOURCES? We talked about the enormous sets of appendices that some in the group are publishing with their manuscripts. Many of these appendices contain things that could be useful resources but which are buried. Do people know what's there? Do they know where things are archived? The field needs a list of the available resources, whether it is sequencing data, coding, validated protocols, bioinformatics workflows, or list of microbes. We talked about a "one stop shop" for such information; plans are underway for this – awaiting funding decision... But in the meantime, **could begin the process of identifying what investigators in this space need and where we want it to be available.**

SCIENCE COMMUNICATION. We discussed the needs of clinicians for readily-accessible information, scientific updates, and progress from the many different scientists engaged in urinary microbiota work. Too much information, too many journals to read – so could use a source of easily-digested information that clinicians could then draw from when talking with patients. We discussed how this could be a good project for trainees, helping them to develop their science communication skills, which are especially important these days. These papers could be stored in multiple places for easy access and could be a way to build cross-disciplinary collaborations. After all, we agreed, we need to know and understand, at least at some level, what others are doing before we can consider or contemplate collaboration. Ideas suggested to accomplish this included podcasts (could create and archive on the CAIRIBU YouTube channel). The AUA was suggested as a potential partner in this endeavor. Other ideas included the following:

- Brief history of the urinary microbiome and related research
- Description of the evidence that support the existence of a urinary microbiome
- Technical aspects of how the urobiome is studied (e.g., define tools, techniques, and approaches in layperson language)
- Microbial terminology – who, what, where
- Listing of current clinical trials related to urinary microbiota
- Controversies related to antibiotics for urinary tract infections
- Probiotics – what are they, what do we know?

TO BE DONE:

1. KP will send out list of potential questions each of us could answer to be put into a "who's who" compendium of sorts
2. KP will inquire for volunteers to work on various things, including science communication, identifying the availability of resources
3. CAIRIBU Interactions Core staff will send out poll to set up next group-wide discussion, aiming for late January 2022
4. CAIRIBU Interactions Core staff will post discussion summary and other materials (e.g., review papers and consensus papers) on the CAIRIBU website in the "CAIRIBU Connect" portion of the site. This is the CAIRIBU intranet so requires username and log int. Request this at CAIRIBU@urology.wisc.edu.

PARTICIPATION. **Table 1** shows list of participants at the July, September, and November meetings – some participated in all 3, others participated in 1 or 2. **Table 2** shows those added to the list after the July meeting but who have yet been unable to participate. mind map from July 2021 discussion.

TABLE 1. Individuals who participated in the July, September, and/or November 2021 Uromicrobiota Research Interest Group meetings.

Ackerman	Lenore	MD, PhD	Cedars Sinai
Al	Kait		Western University Canada/Lawson
Allmaras	Jennifer	MPH	CAIRIBU Interactions Core
Ambrogio	Marcela		U54 - UW-Madison (Vezina lab)
Barasch	Jonathan	MD, PhD	U54 - Columbia Univ
Barthold	Julie	MD	NIDDK
Binoy Joseph	Diya	PhD	U54 - UW-Madison (Strand lab)
Bjorling	Dale	DVM	KURe - UW-Madison
Burton	Jeremy	PhD	Lawson Research
Choi	Brian	MS	Loyola University Chicago
Coffey	Emily		University of Minnesota
Davis	Catherine		CAIRIBU Interactions Core
De Nisco	Nicole	PhD	University of Texas (Dallas and SW)
Desai	Shalin	MD	Loyola University Chicago
Forster	Catherine (Katie)	MD, MS, FAAP	UPMC Children's Hospital of Pittsburgh
Flynn	Kathryn	PhD	P20 - MCW
Goldberg	Tony	DVM	Opp Pool - U54 UW-Madison
Hadjifrangiskou	Maria	PhD	P20 - Vanderbilt Univ
Hale	Vanessa	DVM, PhD	Ohio State University
Karstens	Lisa	PhD	Oregon Health & Science University
Kelly	Maryellen	DNP, MHSc	KURe - Duke Univ
Klaiber	Douglas		Urobiome Therapeutics
Lane	Gullia	MD	KUroEpi - Univ Michigan
Lee	John Richard	MD	Weill Cornell Medicine
MacIver	Bryce	PhD	P20 - Harvard Univ/BIDMC
Maldonado	Maria		
Miller	Aaron	PhD	Cleveland Clinic
Monga	Manoj	MD	UC San Diego
Morales	Grace		P20 - Vanderbilt Univ
Mrofchak	Ryan	MS	Ohio State University (Hale Lab)
Mullins	Chris	PhD	NIDDK
Mysorekar	Indira	PhD	P20 - Washington Univ
Neugent	Michael	PhD	University of Texas at Dallas
Nihalani	Deepak	PhD	NIDDK
Odom	Michael	PhD	KURe - Duke Univ
Penniston	Kristina	PhD, RDN	CAIRIBU Interactions Core
Peterson	Nelson Thomas		U54 - UW-Madison (Ricke lab)
Popvics	Petra	PhD	KURe - UW-Madison
Putonti	Catherine	PhD	U54 - Columbia Univ
Sandhu	Jaskiran		U54 - UW-Madison (Vezina lab)
Sheikh	Naveen		
Siddiqui	Nazeema	MD, MHS	KURe - Duke Univ
Spruance	Victoria	PhD	NIDDK
Stern	Joshua	MD	Intermountain Healthcare (Utah)
Strand	Doug	PhD	U54 - UW-Madison
Suadicani	Sylva	PhD	P20 - Albert Einstein
Sysoeva	Tatyana	PhD	KURe - Duke Univ
Tasian	Gregory	MD	P20 - CHOP
Wang	Zunyi	PhD	U54 - UW-Madison (Ricke collaborator)
Whittemore	Greg		P20 - Columbia Univ
Wolfe	Alan	PhD	Loyola University Chicago

TABLE 2. Individuals specifically invited to participate after the July 2021 Uromicrobiota Interest Group meeting but who have not yet participated.

Amato	Katherine	PhD	Northwestern University
Brubaker	Linda	MD	UCSD
Chughtai	Bilal	MD	Weill Cornell Medicine
Dong	Qunfeng	PhD	Loyola University Chicago
Hatch	Marguerite	PhD	University of Florida
Hochstedler	Baylie	MS	Loyola University Chicago
Horsley	Harry	PhD	University College London
Hultgren	Scott	PhD	Washington University
Kachroo	Naveen	MD	Henry Ford Health System, Detroit
Khasriya	Rajvinder	PhD	LUTS Clinic, Whittington Hospital, UK
Neugent	Michael	PhD	University of Texas at Dallas
Subashchandrabose	Sargurunathan	PhD	TAMU
Sze	Christina		NY Presbyterian/Weill Cornell Medicine
Ulvi	Darcie		Duke University
Underhill	David	PhD	Cedars Sinai
Vanek	Michael		Loyola University Chicago
Whittamore	Jonathan	PhD	University of Florida

The mind map below, emanating from the July 2021 discussion, is available [HERE](#)

This is a product of the Uromicrobiota Research Interest Group organized by the Interactions Core of CAIRIBU (U24-DK-127726) - Collaborating for the Advancement of Interdisciplinary Research in Benign Urology. For permission to use this mind map, contact Kristina Penniston, PhD, RDN, PI of the CAIRIBU U24 Interactions Core (cairibu@urology.wisc.edu).

