



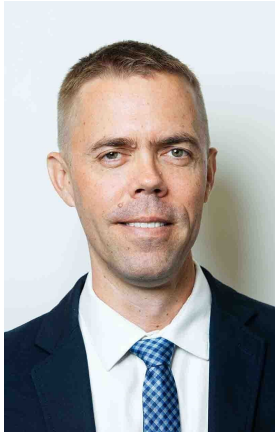
Duke Microbiome Center

August 2025 DMC Newsletter

This quarterly newsletter is provided by the Duke Microbiome Center (DMC) to inform the Duke University community about activities, resources, news, funding and educational opportunities, and recent highlights in the microbiome sciences at Duke and beyond. To suggest items for this newsletter or to add someone to our newsletter listserv, please email [Cindy Wicker](mailto:Cindy.Wicker@duke.edu). For further information on the DMC, please visit the DMC [website](https://www.duke.edu/microbiome).

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A Message from the Director:

Dear DMC Community,

Despite the unprecedented challenges we are facing this year, there is still much to celebrate and learn about in the DMC and broader Duke communities. Please take a couple of minutes to read through the newsletter below to celebrate the achievements of your DMC colleagues and learn about the resources that the DMC continues to bring to your important work.

As microbiome scientists, we know that adaptability and flexibility are important fitness determinants. With that in mind, many of you may find opportunities in the months ahead to respond to the emerging priorities of the [HHS' Make America Healthy Again \(MAHA\)](#) agenda. By building upon Duke's strong culture of creative and interdisciplinary collaboration across the schools of Medicine, Engineering, Environment, Arts & Sciences, and others, Duke's microbiome community is prepared to adapt and succeed in this changing landscape. Our community is also well positioned to respond to the increasing [NIH emphasis on human-based approaches](#). Across the Duke campus, there already exists several human sample and data biorepositories that are amenable to microbiome science. I and the rest of the DMC leadership team are available to help you connect to these existing biorepositories or provide guidance on how to design new ones to maximize their potential utility for our community. Some representative studies are listed below.

- [Project Hope 1000](#): A biorepository from pregnant people and their children to support the study of factors that influence life-long health and well-being.
- [Pediatric Obesity Metabolism and Microbiome Study \(POMMS\)](#): A biorepository containing microbiome and metabolism-relevant samples from well-characterized adolescents with obesity undergoing different types of weight loss therapies.
- [OneDukeGen](#): An ongoing genomic medicine study involving 150,000 Duke Health patients and research study participants, including analysis of biological samples related to different types of diseases.

As you will see in the articles and links below, our DMC community continues to make important impacts at the local, national, and international levels, and our destination and mission as a scientific community remain unchanged. For up-to-date information and guidance on navigating the continuing developments and directives from the federal government, please go to <https://myresearchpath.duke.edu/updates-navigating-recent-executive-orders>.

Sincerely,
John Rawls
Director, Duke Microbiome Center

Microbiome Core Facility service updates



Duke Microbiome Core has access to the Duke Human Vaccine Institute's Bruker MALDI Biotyper instrument for rapid strain identification from bacterial isolates. Please email microbiomesr@duke.edu for more information.



Duke Functional Genomics Core will be establishing services for digital PCR with the Thermo Fisher Absolute Q system. User training and consultation will be available. Please email rnai@duke.edu for more information.

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Updates to DMC Red Team Review

We invite you to take advantage of DMC Red Team Review service for faculty members of the DMC. Our goal is to provide a formal service for giving conceptual feedback (that is, not proofreading) to help hone your latest NIH, NSF, etc. grant. For additional information visit the [DMC Webpage](#).

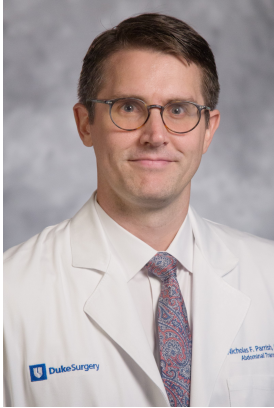
To allow investigators more time to prepare their proposals for review, we are exploring more flexible submission deadlines for grant review.

To give reviewers and you enough time to capitalize on the process, we require an SPS record and internal grant deadline from your department - and the recommended deadline for documents to be reviewed is 6-weeks prior to this date, with an expected turnaround within 2 weeks. For shorter review timelines, review is possible but may result in a less detailed review process. Suggested reviewers (we will aim for 2 reviewers per grant) are also requested. Submissions are through [Google Forms](#).

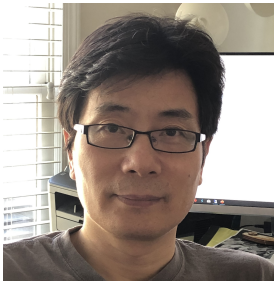
If you are interested in being a reviewer (small stipend provided), or have additional questions, please contact Julia.Oh@duke.edu and cc Cynthia.Wicker@duke.edu

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New Member Spotlights!



Dr Nicholas Parrish, M.D., Ph.D.
Medical Instructor of Surgery
Surgery, Abdominal Transplant Surgery



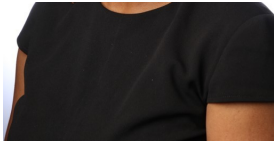
Guofang Zhang, Ph.D.
Associate Professor of Medicine
Medicine, Endocrinology, Metabolism, and Nutrition



Nicole C Rockey, Ph.D.
Assistant Professor of Civil and Environmental Engineering
Civil and Environmental Engineering



Oyomoare Osazuwa-Peters, Ph.D., M.S.
Assistant Professor of Population Health Science
Duke University School of Medicine



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Upcoming Microbiome Conferences

Microbes in Microbiomes Conference: Kovens Conference Center, Florida International University, Miami, Florida, U.S. 18 – 20 February 2026

Keystone Joint Conference on Human Microbiome: From Models and Mechanism to Medicine and Human Microbiome: From Models and Mechanism to Medicine: Fairmont Banff Springs, Banff, AB, Canada, Jan 19–22, 2026

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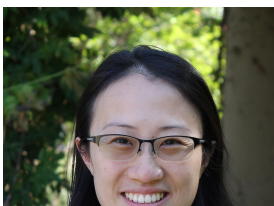
News & Awards



Joseph Heitman, MD, PhD, has been named the recipient of a [2025 Distinguished Faculty Award](#) by the Duke Medical Alumni Association in recognition of his significant contributions to biomedical science, education, clinical impact, and leadership

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Aging and the Gut: The Microbiome's Second Act -



Getting old is many things: a gift, a bummer, a weird metamorphosis. It's also mysterious. The mechanistic nitty gritty of aging—and why some people [age more healthily](#) than others—are ripe areas of investigation. As researchers identify strategies to minimize aging's negative outcomes, they're finding that the



answers may come, in part, from our guts and the massive community of microbes living in them. A recent article from the American Society for Microbiology explored this topic highlighting the research of DMC faculty member Shuo Han, Ph.D. Read more [here](#).

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The AI That's Finally Making Sense of Chronic Fatigue Syndrome



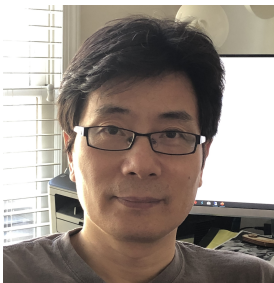
DMC faculty Julia Oh, PhD, and colleagues have developed a new artificial intelligence tool that maps the hidden biology behind chronic fatigue syndrome.

A new artificial intelligence tool, BioMapAI, is giving researchers a clearer picture of [myalgic encephalomyelitis/chronic fatigue syndrome](#), or ME/CFS, by mapping the hidden biology behind the pain, dizziness, and exhaustion of the condition.

The tool could lead to better diagnosis and treatment of a disease that has long been misunderstood, misdiagnosed, and, for many, dismissed. Read more [here](#).

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Congratulations to the 2025 DMC Development Grant recipients



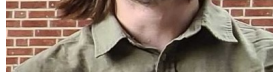
Guofang Zhang, Ph.D

"Modulating the gut microbiome through diet to improve outcomes in propionic acidemia"



Rytas Vilgalys and Keaton Tremble

"Resolving tri-Kingdom interactions within the symbiotic plant root microbiome using fine-scale



spatial transcriptomics"

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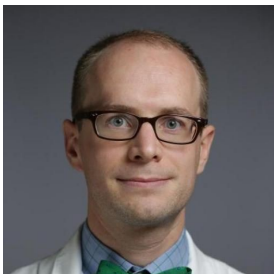
Congratulations to the DMC's recent NIH K23 Awardees



**Sarah Heston - Assistant Professor
Department of Pediatrics**

"The Gut Microbiome and Development of Acute Graft-Versus-Host Disease After Allogeneic Hematopoietic Cell Transplantation in Children"

Dr. Heston's K23 award will support her work investigating the role of the gut microbiome in the development of acute gastrointestinal graft-versus-host disease after allogeneic hematopoietic cell transplantation in children. This includes the interactions between the gut microbiome and host immune system that precede GVHD and the identification of potential therapeutic targets for the prevention of GVHD.



**Nicholas Turner - Assistant Professor
Department of Medicine - Infectious Diseases**

K23: *C. difficile* Interactions with the Microbiome and Metabolome in Colonization and Disease

***C. difficile* colonization is much more common than disease, yet the factors leading some colonized individuals to progress to disease while others remain healthy are poorly understood. Dr. Turner's K23 award will support his efforts to compare the microbiome, metabolome, and *C. difficile* strain attributes between colonized individuals who do or do not progress to disease in order to identify risk factors (or protective factors) related to disease progression - some of which may be useful as targets for preventative interventions.**

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Newly Discovered "Sixth Sense" Links Gut Microbes to the Brain in Real Time



In a breakthrough that redefines our understanding of gut-brain communication,



DMC researchers have uncovered a “neurobiotic sense,” a newly identified system that lets the brain respond in real time to signals from microbes living in our gut. The new research, led by DMC faculty member [Diego Bohórquez, PhD](#), and published in [Nature](#), centers on neuropods, tiny sensory cells in the lining of the intestine. This study reports that neuropod cells detect a common microbial protein and send rapid messages to the brain that can help curb appetite and guide decision-making. Read more [here](#).

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[Joseph Heitman Honored with Prestigious Lucille Georg Award in Basic Science](#)



[Joseph Heitman, MD, PhD](#), has received the Lucille Georg Award in the basic scientist category from the International Society of Human and Animal Mycoses ([ISHAM](#)). This distinguished award, presented every three years at the ISHAM Congress, recognizes lifetime achievements and outstanding contributions to the field of medical mycology. Heitman, James B. Duke Distinguished Professor and Chair of the Department of [Molecular Genetics](#)

[and Microbiology](#), delivered a lecture during the award ceremony on May 21 at the ISHAM 2025 Congress in Iguazu Falls, Brazil. He spoke about his lab’s discovery of unstable, transient antimicrobial resistance invoked by RNAi-dependent epimutation in the human fungal pathogen *Mucor*. The Lucille Georg Award, established in 1982, is ISHAM’s highest honor and is awarded to two individuals — one in basic science and one in clinical science.

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DMC Microbiome Office Hours Continue through 2025

Open to anyone within the DMC community – at any background level.

Given the popularity and success of office hours, we have decided to keep the office open through the remainder of 2025. No need to schedule ahead of time - everyone is welcome to just stop in!

This recurring event is designed to provide real-time assistance with any aspect of ongoing or upcoming microbiome research projects.

Topic experts in bioinformatics, biostatistics, microbiology, and general microbiome-science will be in attendance each week, so feel free to bring any questions/problems that you have.

Event Location: MSRB3 Conference Room 4122

Event Time: First and Third Friday of each month - 1:30pm – 2:30pm

For more info, or any questions regarding office hours, please contact jason.arnold@duke.edu.

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Insights from the national Microbiome Center Consortium Meeting



Jason attended the 2025 [Microbiome Centers Consortium](#) meeting as a delegate for the DMC - Below is a brief opinion piece built off the insights discussed in the meeting.

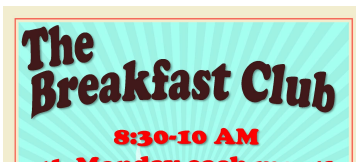
Given the rapidly changing federal funding climate, there is an expanding interest in microbiome partnerships between academic units and industry - specifically surrounding the expansion of translational research and improving workforce development for industry scientists. With growing interest in microbiome-science, it has become significantly more difficult to ensure visibility of high-quality microbiome science over lower-quality information - there are groups including the [Engineering Biology Research Consortium \(EBRC\)](#) and [National Microbiome Data Collaborative \(NMDC\)](#) working to make improvements in this space, as well as to improve education in the microbiome research space - launching multi-institutional undergraduate certificate programs and online modules for computational training. Discussion surrounding technology advancements suggested a renewed desire and need for standards to improve rigor and reproducibility of microbiome research, especially as we move into new longer-read sequencing technologies and multi-omic integration.

The MCC is working to secure funding to cover costs of consortium administrative support, and to allow for more regular larger group meetings to work. There are opportunities for investigators and trainees to engage with the MCC and with other national collaboratives like those mentioned above.

For more information, check out the linked websites above or reach out directly to jason.arnold@duke.edu.

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The Breakfast Club continues



We are excited to continue the “[The Breakfast Club](#)” 2025-2026 - a monthly community building forum every 4th Monday morning of the



month with light breakfast and coffee.

WHO: This forum is jointly sponsored by the Department of Integrative Immunobiology (IIB), Department of Molecular Genetics and

Microbiology (MGM), Center for Virology and Duke Microbiome Center

(DMC). Students, postdocs, staff, and faculty in any laboratory affiliated with DMC, Center for Virology, MGM, or IIB are invited.

WHEN: Every 4th Monday morning of the month from 8:30-10:00AM

WHERE: MSRB1 room 001

WHAT: Free coffee and light breakfast (while supplies last) in a flexible and informal space for community building.

WHY: We seek to build community across IIB, MGM, Center for Virology, and DMC. In addition to informal conversation, attendees are invited to use The Breakfast Club to hold any kind of small group activity (e.g., small group meetings, journal clubs, office hours, practice chalk talks).

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DMC 2025-2026 Research-In-Progress Series

The DMC Research-in-Progress Series highlights ongoing research in the Duke Microbiome Center.

These informal seminars take place on the Third Friday of each month
12:00pm and 1:00pm in MSRB3 – Room 1125.

Zoom link is available [here](#) for those who cannot attend in person.

See this month's event [here](#)

If you are interested in presenting, or want to see our tentative presenter list, please check the [scheduling calendar](#).

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Funding Opportunities through the DMC

[DMC Rolling Voucher Program:](#)

Duke University has established shared resources that avail diverse technologies to Duke investigators that can be used to advance microbiome science. To facilitate Duke Microbiome Center investigators' access to these shared resources, particularly for microbiome projects that are not yet externally funded, we are pleased to announce the Duke Microbiome Center Rolling Voucher Program. This rolling voucher program offers vouchers in amounts ranging up to \$10,000. Each DMC faculty member cannot receive more than \$10,000 of funds through this mechanism within any two year period. These vouchers are redeemable at any of the [Duke University School of Medicine's many core facilities](#), and applicants are required to contact the directors of these shared resources to develop project budgets. Learn more [here](#).

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Upcoming DMC Meetings

DMC Faculty Meetings: The next Faculty meeting will be Monday, November 17 2025 at 1:00 PM in-person in 4122 MSRB3 with a Zoom [option](#).

Please mark your calendars!

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Highlighted Microbiome Funding Opportunities

- Funding Opportunity Announcement for Impact of Environmental Exposures on Gut-Brain Signaling in Neurological Conditions (R01) <https://researchfunding.duke.edu/funding-opportunity-announcement-impact-environmental-exposures-gut-brain-signaling-neurological>
- Enhancing Mechanistic Research on Precision Probiotic Therapies (R61/R33 Clinical Trial Optional) <https://researchfunding.duke.edu/enhancing-mechanistic-research-precision-probiotic-therapies-r61r33-clinical-trial-optional>
- Advancing Bioinformatics, Translational Bioinformatics and Computational Biology Research (R01 Clinical Trial Optional) <https://researchfunding.duke.edu/advancing-bioinformatics-translational-bioinformatics-and-computational-biology-research-r01>
- Biomarkers of Cognitive Decline and Dementias of Aging in Individuals within the Autism Spectrum <https://researchfunding.duke.edu/biomarkers-cognitive-decline-and-dementias-aging-individuals-within-autism-spectrum>
- Advancing Nutrition-related Research Across the Lifespan <https://researchfunding.duke.edu/advancing-nutrition-related-research-across-lifespan>

See additional Microbiome Funding Opportunities [here](#).

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Highlights of Recent DMC Publications

Names of primary DMC faculty authors are bolded

- *Protein absorption in the zebrafish gut is regulated by interactions between lysosome rich enterocytes and the microbiome.* Childers, L., Park, J., Wang, S., Liu, R., Barry, R., Watts, S. A., **Rawls, J.F.** ...

- Bagnat, M. (2025). *Elife*, 13. <https://doi.org/10.7554/eLife.100611>
- *An Engineered Prodrug Selectively Suppresses β -Lactam-Resistant Bacteria in a Mixed Microbial Setting*. Duda, A. M., Ma, H. R., Villalobos, C. A., Kuhn, S. A., Angle, S. S., He, **You, L.**, K., ... **Franz, K. J.** (2025). *ACS Infect Dis*, 11(7), 1956–1967. <https://doi.org/10.1021/acsinfecdis.5c00179>
 - *From stool to sequence: decoding the human diet with FoodSeq*. Superdock, D. K., Petrone, B. L., Kirtley, M. C., & **David, L. A.** (2025). *MSystems*, e0015825. <https://doi.org/10.1128/msystems.00158-25>
 - *The Fungal Kingdom as a Rosetta Stone for biological discovery*. **Heitman, J.** (2025). *Curr Biol*, 35(11), R427–R433. <https://doi.org/10.1016/j.cub.2025.04.013>
 - *Branched chain amino acid metabolism and microbiome in adolescents with obesity during weight loss therapy*. McCann, J. R., Yang, C., Bihlmeyer, N. A., Tang, R., Truong, T., An, J., ... **Rawls, J. F.** (2025). *MedRxiv*. <https://doi.org/10.1101/2025.02.03.25321363>
 - *The tell-tale hearts: Donor-derived invasive fungal infections among orthotopic heart transplant recipients*. Krishnan, J., Carugati, M., Miller, R. A., Wolfe, C. R., Perfect, J. R., & **Messina, J. A.** (2025). *Med Mycol Case Rep*, 48, 100702. <https://doi.org/10.1016/j.mmcr.2025.100702>
 - *Population-level amplification of gene regulation by programmable gene transfer*. Son, H.-I., Hamrick, G. S., Shende, A. R., Kim, K., Yang, K., Huang, T. J., & **You, L.** (2025). *Nature Chemical Biology*, 21(6), 939–948. <https://doi.org/10.1038/s41589-024-01817-9>
 - *Dual-mycorrhizal colonization is determined by plant age and host identity in two species of Populus*. Nash, J., Looney, B., Cregger, M. A., Schadt, C., & **Vilgalys, R.** (2025). *Mycorrhiza*, 35(3), 42. <https://doi.org/10.1007/s00572-025-01215-6>

See additional DMC publications [here](#).

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Job Listings

- **Assistant Prof in Microbial Physiology, Baylor University.** For potentially interested postdocs or others in your department. We are a growing R1 department with significant resources, strong colleagues, and students. <https://apply.interfolio.com/170590>
- **Postdoctoral researcher: avian microbiomes and reproduction at Netherlands Institute of Ecology (NIOO-KNAW)** We are looking for a postdoctoral researcher to join our team working on avian reproductive microbiomes at the Netherlands Institute of Ecology (NIOO-KNAW) in the group of Dr. Melissah Rowe. The postdoc will work on an ERC-funded project where the overarching aim is to understand the significance of reproductive microbiomes for host biology and fitness. Starting date is flexible, preferably between November 2025 – January 2026. Apply [here](#)

If you have any job postings you'd like shared with the Duke Microbiome Center community, or see any relevant job opportunities available - please share with jason.arnold@duke.edu to have them listed on the DMC website!

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