



# Duke Microbiome Center

## February 2024 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**

Please take a few moments to look through the newsletter below. I anticipate that you'll find items that will be of interest and benefit to you. In particular, I want to bring your attention to a few important items:

Dear DMC Community:



Dr. Matthew Kelly begins his service as the new DMC Co-Director.

Read more below about two exciting DMC funding mechanisms now requesting applications - the DMC Development Grants and the DMC-TriCEM Graduate Student Awards.

The DMC and the Precision Genomics Collaboratory are co-hosting seminar speaker [Dr. Rick Bushman](#) from the University of Pennsylvania at 12:30PM on Thursday 25 April 2024. Mark your calendars!

Save the date for the next NC Microbiome Symposium at NCBC on May 22. Our keynote speakers will be [Dr. Maria](#)

[Gloria Dominguez-Bello](#) and [Dr. Marty Blaser](#) from Rutgers University.

The next DMC Faculty Meeting will be Monday, May 20 at 1:00 PM in-person in 4122 MSRB3 with a Zoom option. This is one week earlier than normal due to Memorial Day on May 27, so DMC faculty please adjust your calendars.

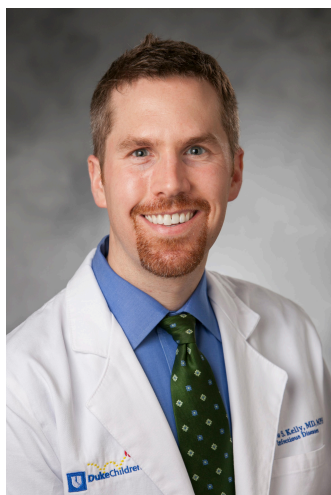
Please consider joining the [DMC Bioinformatics and Biostatistics Working Group](#) to find community and Q&A forums to help meet your microbiome analysis needs.

Please read below for more details on each of these and other topics. The DMC exists to support you, so as always, please let us know how we can better support your work. Sincerely on behalf of the DMC leadership team,

John Rawls  
Director, Duke Microbiome Center

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## [Dr. Matthew Kelly begins service as new DMC Co-Director](#)



Effective 1 January 2024, Dr. Matthew Kelly began serving as the new Co-Director of the DMC. The role of the DMC Co-Director is to work closely with the DMC Director on DMC administration, operations, and planning. Dr. Kelly is an Associate Professor of Pediatrics, Molecular Genetics and Microbiology, and Global Health, and he has been serving as one of the Associate Directors of the DMC since 2022. His research program focuses on the interactions between the upper respiratory microbiome and pathogens that cause infections in children. Dr. Kelly's research was recently highlighted in a Duke School of Medicine article [here](#). In his role as an Associate Director, Dr. Kelly has spearheaded expanding DMC's computational resources on the Duke Compute Cluster. In taking on this DMC Co-Director role, Dr. Kelly replaced Dr.

Lawrence David who will be on sabbatical from 2024-2025. Dr. David will continue serving on the DMC leadership team as an Associate Director. We welcome Dr. Kelly into this new role and Thank Dr. David for his service!

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## [Jessica Portillo and Sweta Patel receive the 2023 DMC Diversity Matters Award](#)



### Duke Microbiome Center

#### 2023 DMC Diversity Matters Award recipients Jessica Portillo and Sweta Patel



The Duke Microbiome Center leadership team is happy to announce that the recipients of the [2023 DMC Diversity Matters Award](#) are **Jessica Portillo** and **Dr. Sweta Patel**. The DMC is committed to advancing diversity, equity, and inclusion as fundamental to our center's success and excellence (read more [here](#)). Our ability to achieve these ends relies on the initiative, leadership, and engagement of our center members. Launched in 2020, the annual Diversity Matters Award is designed to recognize individuals within the DMC that have made significant advances towards these ends within Duke and our broader scientific and geographic communities. We are very happy to recognize

Jessica and Sweta as the two recipients of this year's DMC Diversity Matters Award for their contributions, which are described [here](#).

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## [2024 Duke Microbiome Center Development Grants – Now Accepting](#)

### [Applications](#)

Development Grant applications are currently being accepted!

These \$50,000 research awards are available to support [faculty](#) within the Duke Microbiome Center for the acquisition of data essential to the growth of interdisciplinary and collaborative research programs!

Application deadline for these awards is May 6th, 2024 at 11:59 p.m. ET.

For full eligibility criteria and additional details about how to submit, please review the [program guidelines](#).

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## [DMC-TriCEM Graduate Student Awards – Now Accepting Applications](#)



The DMC leadership team is happy to announce a new partnership with the [Triangle Center for Evolutionary Medicine \(TriCEM\)](#) to support research conducted by graduate students at Duke University. We are currently inviting applications for DMC-TriCEM Graduate Student Awards that will provide one year of funding for Ph.D. students at Duke to pursue research in evolutionary medicine. We are especially interested in proposals that connect microbiome research to any of the four Research Tracks in TriCEM – pathogenic organisms, cancer, brain sciences, and social & biological determinants of health – or that engage with One Health research at the intersection of humans, animals, and the environment.

For more information including application instructions, see [the program announcement](#) or download a PDF of the announcement [here](#). The deadline for proposals is **22 March 2024**.

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## The Breakfast Club Continues!

We are excited to continue “The Breakfast Club” through 2024 - a weekly community building forum every Wednesday morning with free 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 Host-Microbial Interactions (CHoMI) and Duke Microbiome Center (DMC). Students, postdocs, staff, and faculty in any laboratory affiliated with DMC, CHoMI, MGM, or IIB are invited.

**WHEN:** Every Wednesday from 8:00-10:00AM

**WHERE:** OBGE Lounge in MSRB3 room 1260

**WHAT:** Free coffee and breakfast catered by NOSH (while supplies last!) in a flexible and informal space for community building.

**WHY:** We seek to build community across IIB, MGM, CHoMI, 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, networking, etc.). Be creative – it’s your forum!

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**The Breakfast Club**

8-10 AM each Wednesday in  
OBGE Lounge (MBRB3 1260)

Free coffee  
& breakfast  
from NOSH

Open to all labs in IIB, MGM, CHOMI, & DMC  
A weekly forum providing free breakfast &  
flexible space for community building

Learn more here: 

The poster features a central illustration of a white coffee cup on a saucer next to a golden croissant. The background is a light blue with radiating lines. The text is in various fonts and colors, including black, white, and orange.

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## Sweta Patel Receives K23 Career Development Award



DMC faculty member [Sweta Patel, MD](#) recently received a [K23 Clinician-Scientist Career Development Award](#) from the National Institutes of Health/National Heart Lung and Blood Institute for the project "The impact of the oral microbiome on pulmonary function among people with HIV in Botswana."

People with HIV are at increased risk of developing chronic obstructive pulmonary disease (COPD), which is the third leading cause of death worldwide, but we do not fully understand why. To address this knowledge gap, Dr. Patel and colleagues will study associations between the oral microbiome, systemic inflammation, and COPD among people with HIV in Botswana. This information will improve our understanding of how COPD develops in people with HIV and may lead to the development of new ways to treat COPD using the microbiome.

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## [Food DNA barcoding technique from David lab reveals patterns of human diet](#)

### [consumption](#)

A new technique using DNA barcoding to identify the plant matter in human feces may get at the truth, improving clinical trials, nutrition studies, and more.

Building on earlier studies that attempted to compare DNA found in feces with reported diets, graduate student Briana Petrone and other researchers in the lab of DMC's [Lawrence David](#) have developed a genetic marker for plant-based foods that can be retrieved from poop. The marker is a region of DNA plants use to power chloroplasts, the organelle that converts sunlight into sugars. Every plant has this genomic region, called trnL-P6, but it varies slightly from species to species. In a series of experiments, they tested the marker on more than 1,000 fecal samples from 324 study participants across five different studies, about twenty of whom had high-quality records of their diet.

In findings in the [Proceedings of the National Academy of Sciences](#), the researchers show that these DNA markers can indicate not only what was consumed, but the relative amounts of certain food species, and that the diversity of plant DNA found in feces varies according to a person's diet, age, and household income.

Click [here](#) to read more.

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## [CIMM 2024 Agenda-Official Primer for CIMM 2024](#)



The CMI International Microbiome Meeting (CIMM) brings together some of the world's top microbiome researchers to share their cutting-edge work. Throughout the conference's three-day agenda, you'll hear about current state-of-the-art microbiome research advancements into human health and the environment. Attendees can mingle with renowned academics, network with industry leaders, and exchange ideas to build collaborations with peers.

Please note: The agenda is subject to change and the most up-to-date information will be available on [the CIMM website](#).

[Click Here to Buy CIMM 2024 Tickets](#)

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## **Other 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 Conferences and Workshops

For a full list of upcoming microbiome conferences, click [here](#).

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## Upcoming DMC Meetings

**DMC Faculty Meetings:** The next Faculty meeting will be Monday, May 20, 2024 at 1:00 PM in-person in 4122 MSRB3 with a Zoom option. We moved this meeting 1 week earlier due to Memorial Day. Typically faculty meetings are quarterly (every 3 months) on 4th Mondays, at 1:00 PM.

**DMC Seminars:** The DMC and the Precision Genomics Collaboratory are co-hosting seminar speaker [Dr. Rick Bushman](#) from the University of Pennsylvania at 12:30PM on Thursday 25 April 2024.

Please mark your calendars!

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## Highlighted Microbiome Funding Opportunities

- [Dannon Yogurt, Probiotics and the Gut Microbiome Fellowship Grant](#)
- [Center for Gastrointestinal Biology and Disease \(CGIBD\) -- Pilot Grants for Gastrointestinal Biology Research](#)
- [Implementation Research on Noncommunicable Disease Risk Factors among Low- and Middle-Income Country and Tribal Populations Living in City Environments \(R01 Clinical Trial Optional\)](#)
- [Emerging Mathematics in Biology \(eMB\)](#)

See more microbiome funding opportunities [here](#)

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## Highlights of Recent DMC Publications

Names of primary DMC authors are bolded.

- **Amy K. Schmid** "A conserved transcription factor controls gluconeogenesis via distinct targets in hypersaline-adapted archaea with diverse metabolic capabilities" (<https://scholars.duke.edu/publication/1616272>)
- **Noelle Elizabeth Younge** "A pilot study of fecal pH and redox as functional markers in the premature infant gut microbiome" <https://scholars.duke.edu/publication/1616057>
- **Joseph Heitman** "Calcineurin contributes to RNAi-mediated transgene silencing and small interfering RNA production in the human fungal pathogen *Cryptococcus neoformans*. <https://scholars.duke.edu/publication/1615999>
- **Jillian Hurst** "Dolosigranulum pigrum: A promising nasal probiotic candidate" <https://scholars.duke.edu/publication/1617428>
- **Anthony D. Sung** "Efficacy of probiotic treatment as post-exposure prophylaxis for COVID-19: A double-blind, Placebo-Controlled Randomized trial" <https://scholars.duke.edu/publication/1612491>
- **Christine M. Drea** "Integrating microbiome science and evolutionary medicine into animal health and conservation" <https://scholars.duke.edu/publication/1610145>
- **Matthew Kelly** "Strain-resolved metagenomic analysis of the gut as a reservoir for bloodstream infection pathogens among premature infants in Singapore" <https://scholars.duke.edu/publication/1609607>
- **Raphael H. Valdivia** "The acetylase activity of Cdu1 regulates bacterial exit from infected cells by protecting Chlamydia effectors from degradation" <https://scholars.duke.edu/publication/1618569>

See additional DMC publications [here](#).

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## Jobs Listing

[Duke Microbiome Center Job Board](#) is Live!

If you have open positions in your labs, please feel free to send those postings to [jason.arnold@duke.edu](mailto:jason.arnold@duke.edu) to have them listed on the DMC website!

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