I. Introduction to the Duke Microbiome Center
II. Transcriptional Regulatory Pathways Mediating Host-Microbiome Interaction

ABOUT THE LECTURE

Microbial communities (microbiomes) are known to contribute significantly to human health, regulate global biogeochemistry, and harbor much of our planet's genetic diversity. A wide range of human diseases have been associated with microbiome alterations and a growing number of microbial mechanisms have been identified that impact diseases and their therapies. This seminar will begin with an overview of the Duke Microbiome Center including resources for research, collaboration, and community building across the microbiome sciences. The seminar will conclude with a presentation of recent research from Dr. Rawls' lab using zebrafish and mice to uncover transcriptional regulatory pathways mediating host-microbiome interactions in the intestine with particular relevance for the inflammatory bowel diseases.

Rawls Lab Website: https://sites.duke.edu/rawlslab/

Duke Microbiome Center Website: https://sites.duke.edu/microbiome/

Speaker: **Prof John F. Rawls, Ph.D.**
Departments of Molecular Genetics and Microbiology, and Medicine
Director, Duke Microbiome Center
Duke University School of Medicine



Host: **Prof Patrick Casey**
Senior Vice Dean, Research
Duke-NUS Medical School

Date: **Monday, 6 February 2023**

Time: **12.00 PM - 1.00 PM**

Venue: **For in-person attendance:**
Duke-NUS Medical School
Amphitheatre, Level 2

For virtual seminar (via Zoom), please register *HERE*.
(Please rename your login name to include your institution to facilitate admission)

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Duke-NUS Research Affairs Department

ABOUT THE SPEAKER

Dr. Rawls has focused his scientific career on understanding how host-microbe interactions in the intestine contribute to health and disease. His lab uses gnotobiotic, in vivo imaging, genetic, and functional genomic approaches to determine how microbiota interact with vertebrate hosts to regulate physiologic processes. He pioneered the use of germ-free and gnotobiotic zebrafish to investigate the roles of microbiomes in vertebrate biology, and now uses complementary zebrafish and mice to investigate conserved bacterial signals and responsive host pathways that regulate host nutrition, immunity, and gene expression. He also established methods for in vivo imaging of zebrafish adipose tissues, and used those techniques to explore the developmental and environmental factors regulating their growth and physiology. Finally, he recently expanded his lab's studies to humans to define microbial species and metabolites that are associated with and potentially contribute to pediatric obesity and associated comorbidities. Beyond his research program, Dr. Rawls has served as Director for the Duke Microbiome Center since 2014, which provides resources and training in the microbiome sciences to the Duke University community.

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