

Distinguished Lecture Series

The Human Microbiome: A New Frontier That Might Just Affect Everything



1 June 2021 (Tuesday)
9:30-10:30 a.m. GMT+8 (Hong Kong Time)



Online via Zoom
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ABSTRACT

The constellation of microbes that colonize our body, the human microbiome, produces a cornucopia of metabolites (e.g. butyrate) that reach all tissues via the circulation. In addition, there are direct microbe-host interactions (e.g. immune system cells) and microbes can also degrade or modify host molecules (e.g. bile acids). Given the massive number of diverse types of microbes present, the microbiome has a plethora of effects on many aspects of the host. These range from gastrointestinal disturbances, since most microbes are in the gut, to remote sites such as the brain and behavior. This talk will present some specific examples of microbiome effects on humans, the types of data that supports this, the methods of analysis used, and the challenges in finding effects in such a complex system.

Professor George M. Weinstock

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Professor George Weinstock is the Evnin Family Chair, Professor and Director of Microbial Genomics at the Jackson Laboratory for Genomic Medicine where he established a group devoted to genomic studies of infectious diseases and the human microbiome. The group collaborates extensively with clinicians to apply genomic analyses to a wide range of medical problems. The goal of the metagenomics projects is to determine the role of the microbiome in health and disease with the aim of providing new diagnostic and therapeutic approaches. His group played a leading role in the NIH Human Microbiome Project including both basic science and clinical studies and his current research follows on those projects. Professor Weinstock was previously the co-director of the Human Genome Sequencing Center at Baylor College of Medicine in Houston, Texas where he was one of the leaders of the Human Genome Project. He also directed a number of human and mammalian genetics projects aimed at determining genetic causes of conditions such as Retinitis Pigmentosa, Cleft Lip, susceptibility to infection, and the role of host genetics in control of the microbiome. He has also been an innovator in methods for microbial genetics, application of DNA sequencing in genomics, and software for genome analysis, as well as medical and agricultural applications of genomics. His research continues evolving with new issues in DNA sequencing technology.