Bar-Ilan University
Faculty of Medicine

אוניברסיטת בר-אילן
הפקולטה לרפואה

Faculty Seminar

Universal Dynamics of Human Microbial Ecosystems

By

Dr. Amir Bashan

Harvard University

Monday, January 11th, 2016
at 12:00 in the Seminar Room

Abstract:

Our body is colonized by trillions of microbes, known as the human microbiome, living with us in a complex ecological system. Those micro-organisms play a crucial role in determining our health and well-being, and there are ongoing efforts to develop tools and strategies to control these ecosystems.In this talk I address a simple but fundamental question: are the microbial ecosystems in different people governed by the same host-independent (i.e. “universal”) ecological principles? Answering this question determines the feasibility of general therapies and control strategies for the human microbiome. I will introduce our novel methodology that distinguishes between two scenarios: host-independent and host-specific underlying dynamics. This methodology has been applied to study different body sites across healthy subjects. We also analyzed the gut microbial dynamics of subjects with recurrent Clostridium difficile infection (rCDI) and the same set of subjects after fecal microbiota transplantation (FMT). The results canfundamentally improve our understanding of forces and processes shaping human microbial ecosystems, paving the way to design general microbiome-based therapies.