



181 Longwood Avenue
Boston, Massachusetts 02115-5804

Department of Medicine
Channing Division of Network Medicine

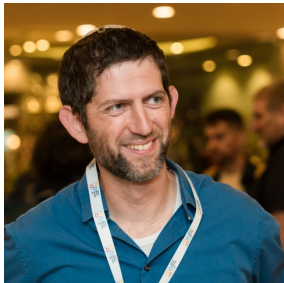
Special Channing Microbiome Seminar

September 6 (Friday), 2024, 9AM (ET)

MCP 5th-floor large conference room & Zoom:

<https://us02web.zoom.us/j/81070959105?pwd=RFJNd3dSZmR6dXJZNjJiYVVzQ3NEQT09>

Meeting ID: 810 7095 9105; Passcode: 984617



Amir Bashan

Department of Physics
Bar-Ilan University, Israel

Top-down approach for biological networks

Abstract: Complex biological systems, from microbial communities to gene regulatory networks, can be represented as tangled networks of many interacting elements. Understanding these networks is key to understanding their dynamics and developing control strategies. However, reliable reconstruction of such large networks is a very challenging task, especially where the available data is limited. In my talk, I will review recent studies where we developed and applied a top-down approach to studying microbial networks, such as the 'universality' of their dynamics, their 'effective connectivity' and its relation to May's stability criterion, detection of keystones, analysis of single-time-point microbial samples and a method for predicting abundance profiles of single samples based on presence/absence information.

Short bio: Amir Bashan is a principal investigator and an associate professor in the department of physics in Bar-Ilan university (BIU), Israel, since 2016. He completed his PhD studies in physics and network science in BIU, under the guidance of Prof. Shlomo Havlin in 2013. He then did postdoctoral research in the Channing Division of Network Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, USA, in the group of Prof. Yang-Yu Liu. He focuses on utilizing mathematical modeling and network theory and developing new computational methods to analyze heterogeneous high-throughput biological data, aiming to uncover general underlying principles that govern the functioning of large, complex systems.

Hosted by Yang-Yu Liu