



הרצאה

הנכם מוזמנים להרצאה של הפקולטה להנדסת ביוטכנולוגיה ומזון.

Dr. Gur Pines

University of Colorado, Boulder

בנושא

Approaches for Studying Mutational Landscapes

Abstract:

The seminar will be held in English

The mutational landscape of a gene or a genome is an abstractive multidimensional space in which mutations are measured according to their contribution to fitness. Such landscapes are case-specific and are commonly portrayed as three dimensional for convenience purposes. Synthetic biologists and biomolecular engineers aim to find the global maximum, i.e., the highest peak within the landscape while avoiding local maxima "traps."

Since it is impossible to evaluate complete landscapes experimentally, methods are being developed to increase the chances of finding the best performing mutants .

I will discuss three approaches for studying mutational

landscapes: The first is computational, which reduces library size without affecting its diversity in saturation mutagenesis experiments. The second approach is experimental, where I will describe a CRISPR-based genome editing method that is highly efficient, trackable and can be done in multiplex. Finally, I will discuss how the structure of the genetic code denies access to large portions of the mutational landscape in directed evolution experiments, and how alternative theoretical codes may increase evolvability.

יום ב' 11.6.18, כיתה 300, 15:00 – 16:00