

Workshop on
“Extremal Statistics in Biology”

June 10 - 13, 2025

organized by

Ariel Amir (Weizmann Institute, Rehovot), Christoph Dellago (U of Vienna) and
Ethan Levien (Dartmouth College)

- **Tuesday, June 10th, 2025**

09:00 – 09:30 **Registration & Welcome**

09:30 – 10:30 **Ethan Levien (Dartmouth College)**

Intro Lecture

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Jane Kondev (Brandeis U)**

Extreme value statistics and length control of filaments in cells

11:30 – 12:00 **Dan Needleman (Harvard U)**

(TBD)

12:00 – 13:30 **Lunch Break**

13:30 – 14:00 **Gasper Tkacik (ISTA, Vienna)**

(TBD)

14:00 – 14:30 **Ulrich Gerland (TU Munich)**

Rare event statistics and molecular bet-hedging in enzyme systems

14:30 – 15:00 **Coffee Break**

15:00 – 15:30 **Ariel Amir (Weizmann Institute, Rehovot)**

Extremal events dictate population growth rate inference

15:30 – 16:00 **Oded Agam (HU of Jerusalem)**

Field-Theoretical Perspectives on Morphogenesis in Hydra Regeneration

- **Wednesday, June 11th, 2025**

09:30 – 10:00 **Tamar Friedlander (HU of Jerusalem)**

Reconciling conflicting selection pressures in the plant self-incompatibility system

10:00 – 10:30 **Ethan Levien (Dartmouth College)**

Learning extremal statistics

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Simone Pigolotti (Okinawa IST)**

Statistical physics of growing systems

11:30 – 12:00 **Andela Saric (ISTA, Klosterneuburg)**

One becomes two & two become one: cell reshaping across evolution

12:00 – 13:30 **Lunch Break**

13:30 – 14:00 **Spencer Hobson-Gutierrez (NYU, New York)**

Evolutionary Advantage of Cell Size Control

14:00 – 14:30 **Calin Guet (ISTA, Klosterneuburg)**

Biology, Context, Statistics

14:30 – 15:00 **Coffee Break**

15:00 – 15:30 **James MacLaurin (NJIT, Newark)**

Extreme first passage times for populations of identical rare events

15:30 – 16:00 **Tibor Antal (U of Edinburgh)**

Metastasis formation models

18:30 – 20:30 **Workshop Dinner**

- **Thursday, June 12th, 2025**

09:30 – 10:00 **Kavita Jain (JNCASR, Jakkur)**

Effective parameters in population biology

10:00 – 10:30 **Naama Brenner (Technion Haifa)**

Analyzing Bacterial Growth with Extreme Value Statistics

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Oskar Hallatschek (UC, Berkeley)**

(TBD)

11:30 – 12:00 **David Lacoste (ESPCI, Paris)**

Inhibition of bacterial growth by antibiotics: a minimal model

12:00 – 13:30 **Lunch Break**

13:30 – 14:00 **Simon Rella (ISTA, Klosterneuburg)**

The novel and the extreme: Connections between record statistics and models of innovation

14:00 – 14:30 **Julie Tourniaire (MLPU, Besancon)**

A branching particle system as a model of FKPP fronts

14:30 – 15:00 **Coffee Break**

15:00 – 15:30 **Herbert Levine (Northeastern U, Boston)**

Fluctuation-dominated Fronts; A Failure of the Small Noise Approximation

15:30 – 16:00 **Emmanuel Schertzer (U of Vienna)**

(TBD)

- **Friday, June 13th, 2025**

09:30 – 10:00 **David Kessler (Bar Ilan U)**

Thymic Selection of T Cells - A Problem in Extreme Value Statistics

10:00 – 10:30 **David Holcman (ENS Paris)**

Extreme statistics in molecular and cellular biology

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Sebastian Fürthauer (TU Vienna)**

The physics of highly crosslinked cytoskeletal networks

11:30 – 12:00 **G. Cigdem Yalcin (Istanbul U)**

How can superstatistics approach be applied to investigate complex biological systems?

12:00 – 13:30 **Lunch Break**

13:30 – 14:00 **Eric Vanden-Eijnden (NYU, New York)**

(TBD)

All talks take place at ESI Boltzmann Lecture Hall!