

# Strategies and Design Principles in **Complex Cellular Systems**

Jerusalem, March 23-26, 2014

## DIRECTORS

**Michal Linial** (The Hebrew University)

**Chao Tang** (Peking University)

## SCIENTIFIC COMMITTEE

**Hanah Margalit** (The Hebrew University)

**Eran Meshorer** (The Hebrew University)

**Alon Zaslaver** (The Hebrew University)

All lectures will take place at the Israel Institute for Advanced Studies,  
Feldman Building, Lecture Hall 130, The Hebrew University, Edmond J.  
Safra Campus, Givat Ram, Jerusalem, Israel

[www.as.huji.ac.il/content/iias-pku](http://www.as.huji.ac.il/content/iias-pku)

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**SUNDAY, March 23, 2014**

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09:30-10:00	<b>Registration</b>
10:00-10:30	<b>Greetings:</b> <b>Oron Shagrir</b> , Vice Provost (The Hebrew University) <b>Michal Linial</b> , IIAS Director (The Hebrew University)
10:30-11:30	<b>Chao Tang</b> (Peking University) Cell Fate Determination and Transformation
11:30-13:00	Participants' Self-Introduction Session
13:00-14:00	<b>Lunch</b>
14:00-15:45	<b>Guided Visit to the National Library of Israel and the Campus</b>
15:45-16:45	<b>Sigal Ben-Yehuda</b> (The Hebrew University) Exploring the Mysterious Nature of Bacterial Spores
16:45-17:25	Special Guest: <b>Maya Bar-Hillel</b> (The Hebrew University) Thinking with Two Systems
17:30-18:45	<b>P.I. Special Session : My View on Complex Systems</b> <b>Liran Carmel</b> (The Hebrew University) What Can We Learn about Ourselves from Ancient DNA ? <b>Oded Rechavi</b> (Tel Aviv University) Transgenerational RNA Memory <b>Amir Aharoni</b> (Ben-Gurion University) The Roles of Coevolution in Reshaping Specificity and Species Formation <b>Eshel Ben-Jacob</b> (Tel Aviv University) Decision Making: from Bacteria to Metastasis
19:00	<b>Reception at IIAS lobby</b>

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**MONDAY, March 24, 2014**

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- 09:00-10:00      **Sigal Ben-Yehuda** (The Hebrew University)  
Intercellular Nanotubes as a Model for Bacterial  
Communication (Part I)
- 10:00-11:00      **Uri Alon** (Weizmann Institute)  
Evolutionary Tradeoffs and the Geometry of  
Gene Expression Space (Part I)
- 11:00-11:30      **Coffee break**
- 11:30-12:30      Project Groups – **Brainstorming I**
- 12:30-13:30      **Lunch**
- 13:30-15:00      **Uri Alon** (Weizmann Institute)  
Evolutionary Tradeoffs and the Geometry of  
Gene Expression Space (Part II)
- 15:00-18:00      **Tour of the Old City of Jerusalem**
- 18:00-20:00      **Dinner**

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**TUESDAY, March 25, 2014**

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- 9:00-10:00      **Nir Friedman** (The Hebrew University)  
Systems Biology of Chromatin and Transcription (Part I)
- 10:00-11:00      **Naama Barkai** (Weizmann Institute)  
Scaling of Morphogen Gradients (Part I)
- 11:00-11:30      **Coffee break**

- 11:30-13:00      **Project Groups – Brainstorming II**
- 13:00-14:00      **Lunch**
- 14:00-15:00      **Yuhai Tu** (IBM, New York and Peking University)  
The Energy Cost of Adaptation for Accurate  
Memory and Decision Making
- 15:00-16:00      **Naama Barkai** (Weizmann Institute)  
Scaling of Morphogen Gradients (Part II)
- 16:00-16:30      **Coffee break**
- 16:30-16:45      Film Introduction: **Vered Vinitzky-Seroussi**  
(The Hebrew University)
- 16:45-18:15      Film Screening: **Footnote**, directed by Joseph Cedar (2011)
- 18:15              Finalizing the Projects with pizza and beer

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**WEDNESDAY, March 26, 2014**

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- 09:00-10:00      **Nir Friedman** (The Hebrew University)  
Systems Biology of Chromatin and Transcription (Part II)
- 10:00-11:00      **Yanyi Huang** (Peking University)  
Microfluidic Single-Cell Whole Transcriptome Analysis
- 11:00-11:30      **Coffee break**
- 11:30-12:00      **Robert Aumann** (Nobel laureate, The Hebrew University)  
Knots
- 12:00-13:00      Short Talks by each project group and concluding remarks
- 13:00              **Light Lunch**