

Princeton Center for Theoretical Science

The Princeton Center for Theoretical Science is dedicated to exploring the frontiers of theory in the natural sciences. Its purpose is to promote interaction among theorists and seed new directions in research, especially in areas cutting across traditional disciplinary boundaries.

The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus "science neighborhood". The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

Faculty Fellows:

Paul Steinhardt, Director
Igor Klebanov, Associate Director
Ravindra Bhatt
William Bialek
Curtis Callan
Roberto Car
David Spergel
Salvatore Torquato

Center Postdoctoral Fellows:

Dmitry Abanin 2008-2011
Bogdan Andrei Bernevig 2006-2009
Thomas Klose 2007-2010
Jean-Luc Lehnars 2007-2010
M. Lisa Manning 2008-2011
Meera Parish 2006-2009
Matthew Reece 2008-2011
Branson Stephens 2007-2010
Aleksandra Walczak 2007-2010

To find out more about Center Postdoctoral Fellowships and Programs see:

<http://pcts.princeton.edu/pcts>



Physical Principles in Biological Networks Program

Early Events in the Drosophila Embryo

Thursday, 30 April 2009

PCTS Seminar Room 407, Jadwin Hall

Organizers

William Bialek
Curtis Callan
Aleksandra Walczak
Ned Wingreen

Physical Principles in Biological Networks Program

Thursday 30 April: Early events in the Drosophila embryo

The initial events of fruit fly development are controlled by several networks of genetic and biochemical interactions. Although the end result of these interactions is the formation of a spatial pattern that provides the blueprint for the body of the fully developed organism, many of the issues which arise are much more general. Indeed, almost all of the theoretical questions that will occupy us in the first four days have been touched upon in the context of this system. The goal for this day of discussion is to explore both the current state of experiments and new opportunities for theory/experiment interaction.

Speakers: Elizabeth Gavis (Princeton), Thomas Gregor (Princeton), Stanislav Shvartsman (Princeton), Eric F. Wieschaus (Princeton)

Theory days

Tuesday 24 March: Robustness vs fine tuning.

Provocateurs: Larry Abbott (Columbia), Chao Tang (UCSF)

Dinner Talk by John Hopfield, Princeton University

Tuesday 31 March: Modularity.

Provocateurs: Chris Wiggins (Columbia), Eduardo Sontag (Rutgers)

Thursday 9 April: Finding the right operating point.

Provocateurs: Daniel Fisher (Stanford), Paul Francois (Rockefeller), Eric Siggia (Rockefeller)

Thursday 16 April: Signals, noise and information.

Provocateurs: William Bialek (Princeton), Anirvan Sengupta (Rutgers)

Experiment days

Tuesday 21 April: Collective behavior in networks of real neurons.

Speakers: Michael J. Berry II (Princeton), Carlos Brody (Princeton), Gasper Tkacik (U.Penn), Samuel S-H Wang (Princeton)

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Early Events in the Drosophila Embryo

Thursday, 30 April 2009

PCTS Seminar Room 407, Jadwin Hall

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| 10:00 --11:00 | “Precision, reproducibility and information in the early embryo.”
Thomas Gregor , Princeton University |
| 11:00 – 11:15 | Coffee Break |
| 11:15 –12:15 | “Localized RNAs, localized translation, and developmental asymmetry.”
Elizabeth Gavis , Princeton University |
| 12:15 – 1:30 | Lunch |
| 1:30 – 2:30 | “Enzyme kinetics in the early Drosophila embryo”
Stanislav Shvartsman , Princeton University |
| 2:30– 2:45 | Coffee Break |
| 2:45 – 3:45 | “Measuring time: the cell cycle, transcription and changes in cell shape.”
Eric F. Wieschaus , Princeton University |

Check <http://pcts.princeton.edu/pcts/calendar.html>
for program updates and other Center activities