Colloquium

The Institute Colloquium: Stochasticity and cell fate

Richard Losick
Harvard University

Host:

Cell fate in biological systems is often governed deterministically by external cues or inherited polarity. Sometimes, however, cell fate decisions are made stochastically. I will present two examples of noise-driven processes that govern cell fate choices in the bacterium Bacillus subtilis. In one cells switch stochastically between motility and chaining in a process that is controlled by stochastic competition between just two proteins. As evidence that stochastic competition is sufficient I will show that the switch can be reconstructed in the heterologous host of E. coli. The second example comes from the process of spore formation in B. subtilis which commences with a switch from binary to asymmetric division. The cell pole at which the asymmetrically positioned septum is formed is chosen randomly. I will report how the stochastically generated cue of the polar septum is read out to activate a cell-specific transcription factor by a protein associated with the cytokinetic machinery.

Monday, May 9, 2016 12:45pm - 01:45pm
Raiffeisen Lecture Hall, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
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https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.