



Institute 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.