

LIFE SCIENCES

seminar series

Marc Bühler

Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland

ncRNA-directed epigenetic gene regulation

December 1, 2016

Thursday, 16:00

Seminar room 132, pavilion A11
University campus Bohunice

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Marc Bühler is a tenured Group Leader and Professor in Molecular Biology at the Friedrich Miescher Institute for Biomedical Research (FMI) in Basel, Switzerland. His research focuses on the convergence of two seemingly disparate fields of study: chromatin biology and RNA turnover. Dr. Bühler's research has provided fundamental mechanistic insights into how non-coding RNAs are used to control gene expression at the level of chromatin. In his presentation he will talk about recent work from his laboratory that uncovers a novel mechanism for small-RNA-mediated epigenome regulation. In brief, although endogenous small RNAs play critical roles in chromatin-mediated processes across kingdoms, efforts to initiate chromatin modifications in trans by using siRNAs have been inherently difficult to achieve in all eukaryotic cells. Using fission yeast, Dr. Bühler's group has discovered a counter-acting mechanism that impedes small RNA-directed formation of heterochromatin and epigenetic gene silencing. Their new work solves a long-standing problem in the field and highlights fundamental roles for the transcription and RNAi machineries in building epigenetic memory.