



Life Sciences Seminar

Quantitative Biology of Developmental Defects

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Host: Ani Kicheva

Studies in *Drosophila* provided key insights into the general principles of pattern formation in developing embryos. For instance, the regulatory logic of the dorsoventral patterning in *Drosophila* is strikingly similar to the logic uncovered in patterning of the vertebrate neural tube. We are beginning to use *Drosophila* as a new model for the mechanistic studies of human developmental defects. I will present our recent work in this direction, focusing on a large class of developmental abnormalities that are caused by the germline mutations in the highly conserved RAS signaling pathway. Our approach relies on the quantitative analysis of the ways in which endogenous patterning processes in *Drosophila* are affected by introducing the mutations identified in humans. Surprisingly, we find that mutations that are strongly activating in the test tube can cause both gain- and loss-of-function phenotypes in vivo, underscoring the nontrivial connections between sequence changes in components of the regulatory networks and the emerging structural and functional defects.

Monday, May 29, 2017 11:30am - 12:45pm

Seminar Room, Lab Building East



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.