

Solvay Workshop on 'Physics of living systems: from molecules to cells to whole organisms'

Brussels, 2 - 4 December 2020 - ONLINE

WEDNESDAY, DECEMBER 2

12:50-13:00 Welcome address by Marc Henneaux

Session 1 - Chair: Sophie de Buyl

13:00 - 13:40 **Katharina Sonnen**

Signalling dynamics controlling mouse embryo development

13:40 – 14:20 **Silvia Santos**

Our first choices: decoding cellular signals during developmental transitions

14:20 – 15:00 **Anna Kicheva**

Coordination of patterning and growth in spinal cord development

15:00 – 15:30 **Break-out sessions: Meet the speakers + Break room**

Session 2 - Chair: Lendert Gelens

15:30 – 16:10 **Simone Reber**

How complexity arises from molecular interactions

16:10 – 16:50 **Kristina Ganzinger**

Reconstituting signalling processes - Exploring information transfer in the immune system

16:50 – 17:30 **James Ferrell**

Self-organization of the cytoplasm

17:30 – 18:00 **Break-out sessions: Meet the speakers + Break room**

THURSDAY, DECEMBER 3

Session 3 - Chair: Didier Gonze

13:00 – 13:40 **Thierry Mora**

Precision, adaptation and prediction in biological systems

13:40 – 14:20 **Jens Timmer**

A multi-scale model to improve anemia treatment in cancer patients

14:20 – 15:00 **Nadine Vastenhouw**

Transcription organizes euchromatin via microphase separation

15:00 – 15:30 **Break-out sessions: Meet the speakers + Break room**

Session 4 - Chair: Geneviève Dupont

- 15:30 – 16:10 **Jordi Garcia-Ojalvo**
Robust cell-fate decision in the early embryo via intercellular mutual inhibition
- 16:10 – 16:50 **Stephan Grill**
Guided mechanochemical self-organization
- 16:50 – 17:30 **Stefano Di Talia**
Waves and flows in embryogenesis and regeneration
- 17:30 – 19:00 **Virtual reception + 1min science videos**

FRIDAY, DECEMBER 4

Session 5 - Chair: Dider Gonze

- 13:00 – 13:40 **Erik Van Nimwegen**
Stochastic gene regulation in bacteria
- 13:40 – 14:20 **Pieter Rein ten Wolde**
Optimal cellular sensing
- 14:20 – 15:00 **Aneta Koseska**
Principles of biochemical computations at criticality
- 15:00 – 15:30 **Break-out sessions: Meet the speakers + Break room**

Session 6 - Chair: Lendert Gelens

- 15:30 – 16:10 **Aleksandra Walczak**
Decision making in early fly development
- 16:10 – 16:50 **James Locke**
Coordination of the plant circadian clock at the single cell level
- 16:50 – 17:30 **Hernan Garcia**
Dissecting transcriptional dynamics in development one burst at a time
- 17:30 – 18:00 **Young researcher award**