

Session Program

23-25 Sept 2020

**Dynamics of biological systems: from viruses
to populations**

Morning Session

Wednesday 23 September

10:10

Morning Session: Viruses

Session | Location: Jagiellonian University

10:10–10:50 **Emergence of COVID-19 - ground for its evolutionary success**

Speaker

Prof. Janusz Kocik

10:50–11:20

SARS-CoV-2 Vaccine Development: Incorporating AI into epitope-based vaccine design

Speaker

Piotr Skoczylas

11:20–11:40

Coffee Break

11:40–12:10

Modelling disease ecology

Speaker

Prof. Fakhteh Ghanbarnejad

12:10–12:40

Super-spreading events initiated the exponential growth phase of COVID-19 with R_0 higher than initially estimated

Speaker

Marek Kocharczyk

12:40–13:00

Social distancing in pedestrian dynamics and its effect on disease spreading

Speakers

Sina Sajjadi, Mr Alireza Hashemi, Dr Fakhteh Ghanbarnejad

13:00

Thursday 24 September

10:00

Morning Session: Cells I

Session | **Location:** Jagiellonian University

10:00–10:40 **Modelling planar polarised cell behaviours in epithelial tissues**

Speaker

Alexander Fletcher

10:40–11:00 **Epithelial dynamics during mouse neural tube development**

Speaker

Mrs Laura Bocanegra-Moreno

11:00–11:20

Active organelle dynamics facilitates precise sensing of fluctuating signals

Speaker

Mr Felix Jonathan Meigel

11:20–11:40 **Coffee Break**

11:40–12:00

Cell Fate Clusters in ICM Organoids Arise from Cell Fate Heredity & Division - a Modelling Approach

Speaker

Tim Liebisch

12:00–12:30 **Setting up the epigenome: a collective phenomenon**

Speaker

Steffen Rulands

12:30–13:00 **Stochasticity and mechanics of stem cell fate in intestinal crypts**

Speaker

Edouard Hannezo

13:00

Friday 25 September

10:00

Morning Session: Populations

Session | Location: Jagiellonian University

10:00–10:40

Intermediate social bonds and the evolution of reproductive cooperation

Speaker

Szymon Drobnik

10:40–11:00

Specialization and plasticity in a primitively social insect

Speaker

Adolfo Alsina

11:00–11:20

A part-dependent account of biological individuality: why holobionts are individuals and ecosystems simultaneously

Speakers

Dr Javier Suárez, Adrian Stencel

11:20–11:40

Coffee Break

11:40–12:00

Pattern formation in a predator-prey model with defense in fearful prey

Speaker

Purnendu Mishra

12:00–12:30

Uncertainties and epidemics spread

Speaker

Bartłomiej Dybiec

12:30–13:00

How unicellular yeast form a community for the benefit of long-term survival.

Speaker

Dominika Wloch-Salamon

13:00