

SY Stem

PROGRAMME

3–5 March 2021
Vienna, Austria

Symposium
for the next
generation
of stem cell
researchers





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Welcome to the Vienna BioCenter!

Dear SY-Stem attendees!

We are very happy to welcome you to the third SY-Stem Symposium!

It was almost exactly a year ago when the coronavirus situation forced us to cancel the 2020 Symposium. Since then, we all had to reshape much of our personal and professional lives and make many changes to the ways we spend our days. At the same time, we have learned so much about how virtual meetings and videoconferences can replace travel. In our 2021 SY-Stem virtual meeting, we are now **exploring new ways to connect** with participants from Europe and around the world to make this an exciting event for all of you.

We hope you like what we prepared for you and look forward to **welcoming you in the virtual space while hosting the conference in Vienna, Austria.**

For the 2021 sessions we selected a diverse area of stem cell-related research fields, ranging from topics like pluripotency, early development and gastrulation to organogenesis, disease and clinics.

On our first day keynote speaker **Amy Wagers** will share insights on advanced genome editing methods of therapeutically relevant stem cell populations, their in vivo applications in mouse disease models and the wealth of gene repair mechanisms thus made possible. The work presented by Wagers paves the way for genetic functional recovery and system-wide endogenous repair mechanisms through new gene edited stem cell therapeutics.

In addition to the talks by our invited speakers, we **opened the stage** for further talks by participants - from master student to PI - to present their work to the stem cell community.

During the **networking session** you will be able to catch up with old friends and colleagues and make new connections as well. A virtual networking space will allow all attendees to become part of the conversation. You will be able to **meet**

the speakers, view and **discuss posters** as well as **connect with our exhibitors** and talk about latest technological solutions live with their delegates. Furthermore, there will be networking possibilities to discuss topics of common interest through chat channels as well as via social media. Make sure to follow the event hashtag on Twitter:

#SYStem_2021 !

Finally, we will conclude the symposium with a keynote lecture by **Lorenz Studer**. He will present strategies on the use of human pluripotent stem cells to model and treat neural diseases including neuroinflammation in neurodegenerative disease, Parkinson's disease (PD), as well as central and peripheral nervous system conditions. The translational aspect of Studer's work is emphasized by a recent FDA clearance for a clinical trial in PD patients.

Although we cannot bring to you the warm spring-like weather we currently have in Vienna, we will make every effort to give you a visual and acoustic taste of Vienna!

We are very happy to welcome researchers from around Europe and the world to this year's symposium, who join us online from **28 different countries**. You make this symposium a truly international event and we are confident you will **carry our message over to your home institutions.**

We would particularly like to thank our speakers who are contributing their knowledge and ideas to this symposium. We would also like to extend special thanks to the industrial sponsors of this year's symposium.

We hope you enjoy the conference and look forward to an exciting symposium!

Elly Tanaka, Juergen Knoblich, Uli Elling, Bon-Kyoung Koo & Sasha Mendjan

Programme

Wednesday, 3rd March 2021

13:00 **WELCOME AND INTRODUCTION**

Session 1 - Pluripotency, Early Development & Gastrulation

- 13:15 **CANTAS ALEV** (Kyoto University)
Towards reconstituting human somitogenesis in vitro
- 13:45 **GRAZIANO MARTELLO** (University of Padua)
Identification of novel regulators of pluripotency in human cells
- 14:15 **RUTH HORNBACHNER** (Medical University Vienna)
MSX2 cooperates with SWI/SNF complex to safeguard syncytiotrophoblast fate of human trophoblast stem cells
- 14:35 **ALEJANDRO AGUILERA CASTREJON** (Weizmann Institute of Science)
Ex utero Development of Mouse Embryos from Pre-Gastrulation to Advanced Organogenesis

14:55 *Networking break*

- 16:05 **SILVIA SANTOS** (The Francis Crick Institute)
Decoding cellular signals during cellular transitions
- 16:25 **EMIEL VAN GENDEREN** (Erasmus MC Rotterdam)
Linking morphogenesis and differentiation: a novel embryonic pluripotent state in between naïve and primed pluripotency
- 16:45 **CHRISTA BUECKER** (Max Perutz Labs)
Reshaping of the transcriptional and regulatory landscape during the exit from naïve pluripotency

Session 2 - Organogenesis

- 17:15 **SASHA MENDJAN** (IMBA)
Cardioids reveal self-organizing principles of human cardiogenesis

17:45 *break*

Keynote lecture

- 18:00 **AMY WAGERS** (Harvard Stem Cell Institute)
In vivo gene editing in tissues and tissue stem cells

19:00 *Networking*

Thursday, 4th March 2021

- 13:00 **MIKI EBISUYA** (EMBL Barcelona)
Human Time vs. Mouse Time with Recapitulated in vitro Systems
- 13:30 **GRAYSON CAMP** (Institute of Molecular and Clinical Ophthalmology Basel)
Human cerebral organoid development through the lens of single-cell genomics
- 14:00 **YEKATERINA MIROSHNIKOVA** (Helsinki Institute of Life Science)
Heterochromatin-driven nuclear softening protects the genome against mechanical stress-induced damage
- 14:20 **DENISE SERRA** (BRIC / University of Copenhagen)
Self-organization and symmetry breaking in intestinal organoid development

14:40 *Networking break*

- 15:50 **JENS PUSCHHOF** (Hubrecht Institute)
Organoids & Toxins - from snakebite to DNA-damaging bacteria
- 16:10 **GEORG BUSSLINGER** (Research Center for Molecular Medicine)
Human gastrointestinal epithelia of the esophagus, stomach and duodenum resolved at single-cell resolution

Session 3 - Disease

- 16:30 **MERITXELL HUCH** (MPI of Molecular Cell Biology and Genetics)
Unveiling liver regeneration and disease mechanisms using organoid cultures
- 17:00 **ÁBEL VÉRTESY** (IMBA)
Improved cell type resolution in cortical organoids by identification and removal of in-vitro stress

17:20 *break*

- 17:40 **JINWOOK CHOI** (Wellcome-MRC Cambridge Stem Cell Institute)
Inflammation shapes the lung regeneration
- 18:00 **KIM JENSEN** (BRIC / University of Copenhagen)
At the origin of intestinal epithelial stem cells

18:30 *Networking*





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