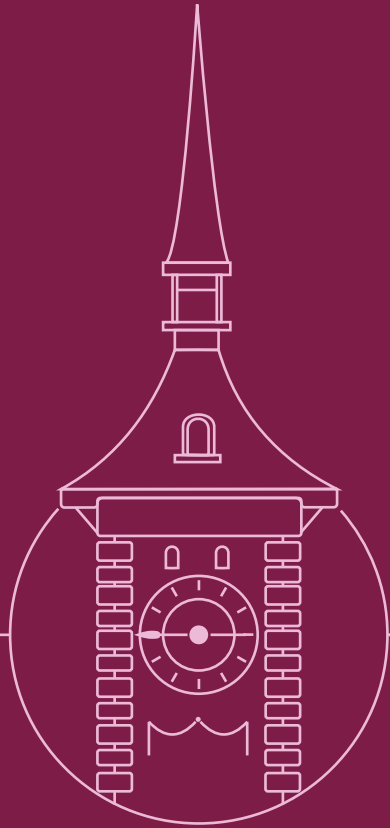


# Cluster for Cardiovascular Research Annual Meeting 2021

25 January 2021  
Online only



Bern



# Meeting programme

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## Foreword

Dear Meeting Participants,

It is our great pleasure to welcome you to the 2021 Annual Meeting of the Cluster for Cardiovascular Research!

This Annual Meeting aims to stimulate interactions and promote collaboration among cardiovascular research teams in Berne, to support and encourage young and promising researchers, and to raise awareness of ongoing cardiovascular research and research interests among scientists and clinicians. As such, we have put together a stimulating programme of local speakers showcasing the multiple cardiovascular topics under investigation in fundamental, translational and clinical research, as well as offering the opportunity for many early career investigators to present their work.

Unfortunately, due to the difficult circumstances caused by the pandemic situation, it is not possible to hold an on-site meeting this year. We would therefore like to express our gratitude to the Speakers for their willingness to present their work online and to the Chairs for their contributions under these conditions.

We are also grateful for the careful evaluation of the many abstracts and presentations by Dr. Emrush Rexhaj and the prize jury, as listed on the following page. We would also like to thank PD Dr. Ange Maguy for his contributions to the meeting organization during the initial stages. Finally, we wish to thank Dr. Daniel Rodriguez for the graphic design of the meeting booklet.

We are looking forward to a stimulating and motivating meeting.

Sincerely,

Organization Committee of the CCVR Annual Meeting 2021

Maria Arnold, Administrative and Scientific Manager of the Cluster for Cardiovascular Research

Sarah Longnus, Department of Cardiovascular Surgery and Department for BioMedical Research

Nadia Mercader, Institute of Anatomy

Katja Odening, Translational Cardiology, Department of Cardiology and Institute of Physiology

André Frenk, Department of Cardiology

## Prize Jury

Chair: Emrush Rexhaj, Department of Cardiology, Swiss Cardiovascular Center

Hildegard Tanner, Department of Cardiology

Fabien Praz, Department of Cardiology

Monika Fürholz, Department of Cardiology

Marco Osterwalder, Department for BioMedical Research

Christian Zuppinger, Department of Cardiology, Department for BioMedical Research

## Acknowledgements

We would like to express our appreciation to the **Department for BioMedical Research** for their financial support of the Cluster for Cardiovascular Research and our Annual Meeting.



## Meeting Programme Overview

08:30-08:40	Opening / Welcome
<b>08:40-09:50</b>	<b>Session 1: Heart Failure &amp; Fibrosis</b>
09:50-10:00	Break
<b>10:00-10:50</b>	<b>Session 2: Congenital Heart Disease</b>
10:50-11:00	Break
<b>11:00-12:00</b>	<b>Session 3: Valvular Heart Disease</b>
12:00-12:10	Break
<b>12:10-12:55</b>	<b>Session 4: SARS-CoV-2 Roundtable</b>
12:55-13:40	Lunch break
<b>13:40-14:40</b>	<b>Session 5: Arrhythmias</b>
14:40-14:50	Break
<b>14:50-16:50</b>	<b>Session 6: Vascular Disorders</b>
16:50-17:00	Break
<b>17:00-17:45</b>	<b>Session 7: Sex Differences in Cardiovascular Disease</b>
17:45-17:55	Prize announcements and Closing

# Detailed Scientific Programme

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08:30-08:40      Opening / Welcome (Sarah Longnus, Nadia Mercader)

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## Session 1: Heart Failure & Fibrosis

Chair: Nadia Mercader, Institute of Anatomy

08:40              Cardiovascular basic research and daily clinical practice - Gaps and perspectives

**Lukas Hunziker, Department of Cardiology**

09:00              Cardiac fibroblastic cells and arrhythmogenesis: A view beyond fibrosis

**Stephan Rohr, Institute of Physiology**

09:20-09:50      Flash presentations from abstracts

- The role of autophagy in zebrafish cardiovascular regeneration  
**Myra Chavez, Institute of Anatomy**
- Intracoronary delivery of mitochondrial DNA aggravates cardiac post-ischemic functional and metabolic dysfunction in a preclinical model of donation after circulatory death  
**Maria-Nieves Sanz, Department of Cardiovascular Surgery and Department for BioMedical Research**
- Assisted reproductive technologies induce heart failure by apoptosis in mice  
**Rodrigo Soria, Department of Cardiology and Department for BioMedical Research**
- Effect of doxorubicin or the proteasome inhibitors bortezomib and carfilzomib on beating activity, p62 accumulation and cell death in human iPSC-derived cardiomyocytes  
**Christian Zuppinger, Department of Cardiology**
- Diabetes and myocardial fibrosis: a systematic review and meta-analysis  
**Dante Salvador, Institute of Social and Preventive Medicine**

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09:50-10:00 Break

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## Session 2: Congenital Heart Disease

Chair: Fabienne Schwitz, Center for Congenital Heart Disease

10:00            **Pediatric heart valve surgery - an ongoing challenge**  
**Alexander Kadner, Department of Cardiovascular Surgery, Center for Congenital Heart Disease**

10:20            **Discovery of heart enhancers underlying cardiac development and congenital heart defects**  
**Marco Osterwalder, Department for BioMedical Research**

10:40-10:50    **Flash presentations from abstracts**

- **In vivo screening for the identification of compounds enhancing epicardium formation**  
**Eleonora Lupi, Institute of Anatomy**
  
- **Repression of Wilm's tumor protein 1 is required to promote myocardial fate**  
**Ines Marques, Institute of Anatomy**

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10:50-11:00 Break

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## Session 3: Valvular Heart Disease

Chair: Thomas Pilgrim, Department of Cardiology

- 11:00      **Mitral valve regurgitation - Prevalence, etiology, prognosis and therapy**  
**David Reineke, Department of Cardiovascular Surgery**
- 11:20      **A new tri-leaflet valve design for durable, non-thrombogenic aortic valve replacement**  
**Dominik Obrist, ARTORG Center for Biomedical Engineering Research**
- 11:40-12:00      **Flash presentations from abstracts**
- **Turbulence Characterization of a Transcatheter Aortic Valve**  
**Leonardo Pietrasanta, ARTORG Center**
  - **Surgical mitral valve repair versus transcatheter edge-to-edge repair for treatment of secondary mitral regurgitation: a propensity score matched comparison of 2-year outcomes**  
**Maks Mihalj, Department of Cardiovascular Surgery**
  - **Building an aortic stenosis stiffness diagram with an in-vitro model of stiffened aortic valve**  
**Eric Buffle, Department of Cardiology and ARTORG Center**
  - **In-vitro evaluation of aortic leaflet stiffness using a novel non-destructive testing method**  
**Michael Stucki, ARTORG Center and Department of Cardiology**

12:00-12:10      **Break**



## Session 4: SARS-CoV-2 Roundtable

Chair: Christoph Gräni, Department of Cardiology

12:10-12:55 **Hot topics in CV research related to COVID-19**

**Panelists:**

- Anne Angelillo-Scherrer, Department of Haematology
- Yvonne Döring, Division of Angiology, Swiss Cardiovascular Center
- Taulant Muka, Institute of Social and Preventive Medicine
- Stephan Windecker, Department of Cardiology

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12:55-13:40 **Lunch break**

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## Session 5: Arrhythmias

Chair: Jean-Sébastien Rougier, Institute of Biochemistry and Molecular Medicine

13:40 **Pre-procedural imaging for ventricular tachycardia ablation**  
**Tobias Reichlin, Department of Cardiology**

14:00 **Electro-mechanical and mechano-electrical interactions in 'electrical' arrhythmia disorders**  
**Katja Odening, Translational Cardiology, Department of Cardiology and Institute of Physiology**

14:20-14:40 **Flash presentations from abstracts**

- **Advancing mechanobiology by performing whole-cell patch clamp recording on mechanosensitive cells subjected simultaneously to in-vivo like dynamic stretch events**  
**Etienne de Coulon, Institute of Physiology**

- Beneficial electrical APD/QT prolonging effects of the metabolite L-carnitine in transgenic SQT1 rabbit model  
Tibor Hornyik, Translational Cardiology, Department of Cardiology and Department of Physiology
- Modeling interacting channels to explain the negative dominance of cardiac Na<sup>+</sup> channel mutations  
Zoja Selimi, Department of Physiology
- Electro-mechanical and mechano-electrical interactions in healthy and drug-induced LQTS rabbit hearts  
Raphaela Lewetag, Translational Cardiology, Department of Cardiology and Institute of Physiology

14:40-14:50 Break

## Session 6: Vascular Disorders

Chair: Florian Schönhoff, Department of Cardiovascular Surgery

- 14:50 Mosaic mutations in congenital vascular malformation  
Iris Baumgartner, Division of Angiology, Swiss Cardiovascular Center
- 15:10 Impact of the first wave of COVID 19 pandemic on the care of patients with acute and chronic aortic conditions  
Jürg Schmidli, Department of Cardiovascular Surgery
- 15:30 Endothelial cell activation and -protection in ischemia/reperfusion injury  
Robert Rieben, Department for BioMedical Research
- 15:50 Top dogs and newcomers - inflammatory mediators in atherosclerosis  
Yvonne Döring, Division of Angiology, Swiss Cardiovascular Centre

16:10-16:50 Flash presentations from abstracts

- Effects of graft preservation conditions on coronary endothelium and cardiac functional recovery in a rat model of donation after circulatory death  
**Natalia Méndez Carmona, Department of Cardiovascular Surgery**
- Non-HDL and cardiovascular risk in patients with symptomatic peripheral arterial disease and established lipid lowering therapy - longitudinal data from a consecutive registry  
**Luise Adam, Division of Angiology, Swiss Cardiovascular Center**
- Exploring the porcine endothelial cell glycocalyx heterogeneity  
**Anastasia Milusev, Department for Biomedical Research**
- Endovascular Targeted Drug Delivery in Myocardial Microvascular Obstruction  
**Yannick Rösch, ARTORG Center for Biomedical Engineering Research**
- Effects of HOPE (Hypothermic Oxygenated Perfusion) on preservation of vascular and contractile function in cardiac grafts in a rat model of donation after circulatory death (DCD)  
**Manuel Egle, Department of Cardiovascular Surgery**
- Role of neutrophil extracellular traps and microvesicles in lower extremity artery disease  
**Manovriti Thakur, Department of Angiology, Swiss Cardiovascular Center**
- Catheter directed thrombolysis in pulmonary embolism  
**Meisam Khorrami Borozadi, Department of Angiology**
- Development of a Large Animal Model to Study Ischemia Reperfusion Injury  
**Bilal Ben Brahim, Department for BioMedical Research**

16:50-17:00 Break

## Session 7: Sex Differences in Cardiovascular Disease

Chair: Taulant Muka, Institute of Social and Preventive Medicine

- 17:00      **Women's health: is there such thing?**  
**Oscar Franco, Institute of Social and Preventive Medicine**
- 17:20      **Gender and sex specific aspects of catheter ablation of atrial fibrillation**  
**Hildegard Tanner, Department of Cardiology**
- 17:40-17:45      **Flash presentation from abstracts**
- **Transition through menopause does not affect cardiovascular disease risk factors**  
**Peter Francis Raguindin, Institute of Social and Preventive Medicine**
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- 17:45-17:55      **Prize announcements (Emrush Rexhaj)**  
**Closing (Katja Odening, André Frenk)**
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