Cluster for Cardiovascular Research
Annual Meeting 2021

25 January 2021
Online only

Bern

Meeting programme

https://www.cvrc.unibe.ch
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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

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Detailed Scientific Programme

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

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
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

10:50-11:00 Break
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

12:55-13:40  Lunch break

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⁺ 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
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

17:45-17:55 Prize announcements (Emrush Rexhaj)  
Closing (Katja Odening, André Frenk)