



# CVRC

CardioVascular Research Cluster

BERN

## Annual Meeting 2025

Tuesday, 21 January 2025

Online presentations + On-site posters & Apéro,  
Conference Rooms U1\_006–007 and Foyer, Anna-  
Seiler-Haus (ASH)

- Acquired Cardiac and Vascular Diseases
- Genetic Cardiovascular Diseases, Development & Regeneration
- Cardiovascular Technologies & Imaging
- Roundtable: Sex- and Gender-specific Cardiovascular Medicine

## Meeting Programme

## Organization Committee

Dr. Maria Arnold, Scientific and Administrative Manager of the Cardiovascular Research Cluster Bern, Inselspital, Bern University Hospital and University of Bern

Dr. med. Sarah Bernhard, Division of Angiology, Swiss Cardiovascular Centre, Inselspital, Bern University Hospital

Daniela Castillo Robles, Administrative Assistant Cardiovascular Research Cluster Bern, Inselspital, Bern University Hospital and University of Bern

Prof. Dr. Yvonne Döring, Division of Angiology, Swiss Cardiovascular Centre, Inselspital, Bern University Hospital and Department for BioMedical Research, University of Bern

Prof. Dr. Sarah Longnus, Department of Cardiac Surgery, Inselspital, Bern University Hospital and Department for BioMedical Research, University of Bern

Prof. Dr. med. Katja Odening, Translational Cardiology, Department of Cardiology, Inselspital, Bern University Hospital and Department of Physiology, University of Bern

Ass. Prof. Dr. Marco Osterwalder, Department for BioMedical Research, University of Bern and Department of Cardiology, Inselspital, Bern University Hospital

PD Dr. med. Emrush Rexhaj, Department of Cardiology, Inselspital, Bern University Hospital and Department for BioMedical Research, University of Bern

## Meeting Programme Overview

10:00-10:10	Opening / Welcome (online, Zoom)
10:10-11:40	<b>Session 1: Acquired Cardiac and Vascular Diseases</b>
11:40-12:25	Lunch break
12:25-13:40	<b>Session 2: Genetic Cardiovascular Diseases, Development &amp; Regeneration</b>
13:40-13:50	Break
13:50-15:10	<b>Session 3: Cardiovascular Technologies &amp; Imaging</b>
15:10-15:40	Break + Poster hanging (end online part, relocate to Anna-Seiler-Haus, Conference Rooms U1_006-007 and Foyer)
15:40-16:20	<b>Session 4: Roundtable “Sex- and Gender-specific Cardiovascular Medicine”</b>
16:20-16:30	Break
16:30-18:45	<b>Poster presentations and get-together Apéro</b>
18:45-19:00	Prize announcements and Closing

# Detailed Scientific Programme

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10:00-10:10      Opening / Welcome (online, Zoom)

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## Session 1: Acquired Cardiac and Vascular Diseases

Chairs:

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

Stephan Windecker, Department of Cardiology

10:10              Chemokine receptor mediated inflammatory responses in atherosclerosis  
Yvonne Döring, Department of Angiology and Department for BioMedical Research

10:30              Current limits of atrial fibrillation ablation  
Laurent Roten, Department of Cardiology

10:50-11:40      Flash presentations from abstracts

- Hyperoxia and myocardial ischaemia during non-cardiac surgery: A combined analysis of biomarkers and echocardiography in high-risk patients  
Manuel Carlomagno, Department of Anaesthesiology and Pain Medicine
- Sex-specific alterations in cardiac metabolic gene expression as a result of ischemia-induced cardiac injury in a rat model of donation after circulatory death (DCD)  
Anja Helmer, Department of Cardiac Surgery and Department for BioMedical Research

- Impact of early recurrences on long term outcomes in patients after cryoballoon ablation - insights from the COMPARE-CRYO study using continuous rhythm monitoring  
Jens Maurhofer, Department of Cardiology
- The role of endothelial cell-expressed IL-1Ra in fungal infection  
Celia Sánchez Fernández, Institute of Tissue Medicine and Pathology
- Oxygen transport during microstrokes - A mixed dimensional modeling approach for realistic microvascular networks  
Gaia Stievano, ARTORG Center for Biomedical Engineering Research
- DDR1 regulates femoral arterial calcification in lower extremity artery disease through NF-kappa B induced BMP2 upregulation  
Manovriti Thakur, Division of Angiology, Swiss Cardiovascular Center and Department for BioMedical Research
- The immunological effect of multigene modifications in transgenic porcine endothelial cells under inflammatory xenotransplantation conditions  
Cedric Zimmermann, Department for BioMedical Research

11:40-12:25 Lunch Break

## Session 2: Genetic Cardiovascular Diseases, Development & Regeneration

Chairs:

Sarah Bernhard, Department of Angiology

Nina Ullrich, Department of Physiology

12:25 Modifying adhesion in the context of arrhythmogenic cardiomyopathy  
Camilla Schinner, Department of Cardiology

12:45 Emerging importance of genetic information in cardiovascular surgery  
Florian Schönhoff, Department of Cardiac Surgery

13:05-13:40 **Flash presentations from abstracts**

- **Stiffness-driven electrical remodeling: Exploring mechanosensitive dynamics in hiPSC-CM**  
**Masaba Sayor Baroi, Department of Physiology**
- **Deciphering role of Ehd2b in heart development, function and regeneration**  
**Ayisha Marwa Mangattu Parambil, Institute of Anatomy**
- **Pulmonary artery pressure in subjects having suffered from high altitude pulmonary edema and their offspring**  
**Nina Perren, Departments of Cardiology and BioMedical Research**
- **Evaluating the antiarrhythmic potential of Bekm-1, a peptide blocker of hERG in the context of short QT syndrome type 1**  
**Muhammad Naveed, Department of Physiology**
- **Functional architecture of cardiac TF regulatory landscapes in control of mammalian heart development**  
**Virginia Roland, Department for BioMedical Research**

13:40-13:50 **Break**

## Session 3: Cardiovascular Technologies & Imaging

Chair:

Jessica Bastiaansen, Department of Diagnostic, Interventional and Pediatric Radiology & Translational Imaging Center, sitem-insel

Christoph Gräni, Department of Cardiology

- 13:50            Perioperative echocardiographic imaging: Oxygen, myocardial function, strain -and what a team can learn from it  
**Jan Friess, Department of Anaesthesiology and Pain Medicine**
- 14:10            Use of cardiac organoids to study the gene regulatory mechanisms driving cardiogenesis  
**Marco Osterwalder, Department for BioMedical Research and Department of Cardiology**
- 14:30-15:10    Flash presentations from abstracts
- Artificial intelligence-based fully automated cardiac magnetic resonance image quantification  
**Pooya Mohammadi Kazaj, Department of Cardiology**
  - Flow culture: An in vitro model to investigate the role of endothelial cells under in vivo-like flow conditions  
**Neda Salimi, Department for BioMedical Research**
  - Quantifying the effects of general anaesthesia on intracardiac haemodynamics using 4D flow cardiovascular magnetic resonance  
**Jacopo Soldini, Department of Anaesthesiology and Pain Medicine**
  - Deep learning automated intraVascular ultraSound image processing and quantification in coronary artery anomalies: The AIVUS-CAA software  
**Anselm Stark, Department of Cardiology**
  - FDA-approved AI-enabled medical devices for clinical use in cardiology and neurology  
**Daniel Windecker, Department of Diagnostic and Interventional Neuroradiology**
  - In-vitro renal artery stenting using a steerable guide wire navigated by a mobile electromagnetic field  
**Christian Zielasek, Department of Vascular Surgery**

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15:10-15:40 Break + Poster hanging (end online part, go to ASH)

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## Session 4: Roundtable “Sex- and Gender-specific Cardiovascular Medicine”

Anna-Seiler-Haus, Conference Rooms U1\_006-007

Chairs:

Emrush Rexhaj, Department of Cardiology and Department for BioMedical Research

Katja Odening, Department of Physiology and Department of Cardiology

15:40-16:20 Sex- and Gender-specific Cardiovascular Medicine

Panelists:

- Marija Glisic, Institute of Social and Preventive Medicine
- Ivana Jaric, Institute of Laboratory Animal Science, University of Zurich
- Jeanne Moor, Department of General Internal Medicine and Institute of Primary Health Care
- Luigi Raio, Department of Obstetrics and Gynecology

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16:20-16:30 Break

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16:30-18:45 Poster presentations (Anna-Seiler-Haus, Foyer in front of Conference Rooms U1\_006- 007) and get-together Apéro

-16:45-17:30: Poster Session 1, even numbers

-17:30-18:15: Poster Session 2, odd numbers

18:45-19:00 Prize announcements

Closing

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## List of Abstracts / Posters (in alphabetical order)

Poster nb.	Name	Affiliation	Title
1	Adak Asli	Institute of Anatomy and Department for BioMedical Research, University of Bern	Development of a laser injury model to study potential cardiac regeneration in human microtissues
2	Baj Giovanni	Department of Cardiology, Bern University Hospital	Artificial intelligence-based major adverse cardiovascular events prediction using multimodal information: Time-to-event prognostic modeling in suspected myocarditis patients
3	Barbieri Miriam	Translational Cardiology, Department of Physiology and Department of Cardiology, Bern University Hospital, University of Bern	SGK1 inhibition normalizes action potential duration in transgenic LQT2 rabbits but not in LQT1 by targeting the late I <sub>Na</sub> secondarily enhanced in LQT2
4	Baroi Masaba Sayor	Department of Physiology, University of Bern	Stiffness-driven electrical remodeling: Exploring mechanosensitive dynamics in hiPSC-CM
5	Beer Georgia	Department of Cardiac Surgery, Bern University Hospital and Department for BioMedical Research, University of Bern	Extending cardiac graft preservation times using normothermic perfusion in a porcine model of donation after circulatory death (DCD)
6	Bigler Marius	Department of Cardiology, Bern University Hospital	Multimodality imaging in AAOCA
7	Carlomagno Manuel	Department of Anaesthesiology and Pain Medicine, Bern University Hospital	Hyperoxia and myocardial ischaemia during non-cardiac surgery: A combined analysis of biomarkers and echocardiography in high-risk patients
8	Chen Dominic	Institute of Tissue Medicine and Pathology, University of Bern	Cell type-specific regulation of IL-1-driven inflammation in cardiac arteritis
9	Clavier Alexia	Department of Cardiac Surgery, Bern University Hospital and Department for BioMedical Research, University of Bern	Sex-based differences in cardiac graft recovery following donation after circulatory death (DCD): Findings from phosphoproteomic analysis in a rat model
10	Colpaert Robin	Institute of Anatomy and Experimental Morphology, UKE Hamburg, DE; Institute of Functional and Applied Anatomy, Hannover Medical School, DE	Leveraging spatiotemporal transcriptomics to identify early drivers of arrhythmogenic cardiomyopathy

11	Conrad Lisa	Department for Biomedical Research, University of Bern	Utilizing cardioids for the identification of transcriptional enhancer landscapes underlying human cardiac morphogenesis
12	Dabravolskaite Vaiva	Department of Surgical Sciences, Section of Vascular Surgery, Uppsala University, Sweden and Department of Vascular Surgery, Bern University Hospital	Intentional temporary gutter leak to reduce renovisceral ischemia during urgent paravisceral aortic aneurysm treatment with in situ laser fenestration: Technical note
13	Dabravolskaite Vaiva	Department of Surgical Sciences, Section of Vascular Surgery, Uppsala University, Sweden and Department of Vascular Surgery, Bern University Hospital	Branched endovascular aortic repair after failed fenestrated endovascular aortic repair: Technical note
14	Harms Raul	Department of Anaesthesiology and Pain Medicine, Bern University Hospital	Swiss anaesthesiologists' perspectives on cardiovascular magnetic resonance imaging for peri-operative risk evaluations: A national survey
15	Helmer Anja	Department of Cardiac Surgery, Bern University Hospital and Department for BioMedical Research, University of Bern	Sex-specific alterations in cardiac metabolic gene expression as a result of ischemia-induced cardiac injury in a rat model of donation after circulatory death (DCD)
16	Ilic Marc	Department of Cardiology, Bern University Hospital	Novel method using $\mu$ CT to investigate the deformation of coronary arteries during balloon angioplasty
17	Khatami Farnaz	Institute of Social and Preventive Medicine, University of Bern	The role of iron biomarkers in predicting type 2 diabetes: An international, multi-cohort study
18	Küffer Thomas	Department of Cardiology and SITEM Center for Translational Medicine and Biomedical Entrepreneurship	First experience using a novel 3D enabled large-area focal pulsed field ablation catheter for ventricular ablation
19	Lambride Chryso	Department of Neurology, University Hospital and University of Zurich and ARTORG Center for Biomedical Engineering Research, University of Bern	Modeling cerebral autoregulation in semi-realistic microvascular networks
20	Lembke Carla	Institute of Anatomy, University of Bern	Cox7a1 mediated CIV dimerization impacts skeletal muscle physiology and cardiac injury response
21	Mangattu Parambil Ayisha Marwa	Institute of Anatomy, University of Bern	Deciphering role of Ehd2b in heart development, function and regeneration

22	Murhofer Jens / Iqbal Salik ur Rehman	Department of Cardiology, Bern University Hospital	Impact of early recurrences on long term outcomes in patients after cryoballoon ablation - insights from the COMPARE-CRYO study using continuous rhythm monitoring
23	Mohammadi Kazaj Pooya	Departments of Cardiology, Bern University Hospital	Artificial intelligence-based fully automated cardiac magnetic resonance image quantification
24	Naveed Muhammad	Institute of Physiology, University of Bern	Evaluating the antiarrhythmic potential of Bekm-1, a peptide blocker of hERG in the context of short QT syndrome type 1
25	Ottersberg Rahel	Department of Cardiac Surgery, Bern University Hospital and Department for BioMedical Research, University of Bern	Ex-vivo heart perfusion protocol optimized to maintain circulatory death grafts beyond 16 hours
26	Perren Nina / Meister Theo	Departments of Cardiology and BioMedical Research, University Hospital of Bern, University of Bern	Pulmonary artery pressure in subjects having suffered from high altitude pulmonary edema and their offspring
27	Rapp Vincent	Department for BioMedical Research, University of Bern	Epigenomic profiling identifies a non- coding region that calibrates Tbx5 gene dosage in the developing heart and limb
28	Abstract withdrawn		
29	Roland Virginia	Department for BioMedical Research, University of Bern	Functional architecture of cardiac TF regulatory landscapes in control of mammalian heart development
30	Salimi Neda	Department for BioMedical Research, University of Bern	Flow culture: An in vitro model to investigate the role of endothelial cells under in vivo-like flow conditions
31	Abstract withdrawn		
32	Abstract withdrawn		
33	Sánchez Fernández Celtia	Institute of Tissue Medicine and Pathology, University of Bern	The role of endothelial cell-expressed IL-1Ra in fungal infection
34	Schulz Julia	Department of Vascular Surgery and Department for BioMedical Research, Bern University Hospital and University of Bern	ChemR23 receptor on macrophages modifies PVAT function and crosstalk within the arterial vasculature in atherosclerosis
35	Soldini Jacopo	Department of Anaesthesiology and Pain Medicine, Bern University Hospital	Quantifying the effects of general anaesthesia on intracardiac haemodynamics using 4D flow cardiovascular magnetic resonance

36	Stark Anselm	Department of Cardiology, Bern University Hospital	Deep learning automated intravascular ultrasound image processing and quantification in coronary artery anomalies: The AIVUS-CAA software
37	Stievano Gaia	ARTORG Center for Biomedical Engineering Research, University of Bern	Oxygen transport during microstrokes - a mixed dimensional modeling approach for realistic microvascular networks
38	Thakur Manovriti	Division of Angiology, Swiss Cardiovascular Center, Bern University Hospital and Department for BioMedical Research, University of Bern	DDR1 regulates femoral arterial calcification in lower extremity artery disease through NF-kappa B induced BMP2 upregulation
39	Töngi Nils	Department of Anaesthesiology and Pain Medicine, Bern University Hospital	Sedation failure and procedural satisfaction in transcatheter aortic valve implantations with the use of dexmedetomidine
40	Vashantakumar Varjany	Translational Cardiology, Department of Physiology and Department of Cardiology, Bern University Hospital, University of Bern	Cellular electrophysiological characterization of human cardioids
41	Windecker Daniel	Department of Diagnostic and Interventional Neuroradiology, Bern University Hospital	FDA-approved AI-enabled medical devices for clinical use in cardiology and neurology
42	Wisnumurti Ekapaksi	Department for BioMedical Research, University of Bern	Investigating coding and non-coding genomic mechanisms underlying cardiac ion channel expression and channelopathies in hiPSC-CMs and cardioids subjected to maturation protocols
43	Yerly Anais	Division of Angiology, Swiss Cardiovascular Center, Bern University Hospital and Department for BioMedical Research, University of Bern	Loss of B cell-ACKR3 reduces atherosclerosis by decreasing plasma cells and pro-inflammatory antibody production
44	Zielasek Christian	Department of Vascular Surgery, Bern University Hospital	In-vitro renal artery stenting using a steerable guide wire navigated by a mobile electromagnetic field
45	Zielasek Christian	Department of Vascular Surgery, Bern University Hospital	Feasibility of fEVAR deployment and cannulation using an electromagnetically steerable guide wire: An in-vitro study
46	Zimmermann Cedric	Department for BioMedical Research, University of Bern	The immunological effect of multigene modifications in transgenic porcine endothelial cells under inflammatory xenotransplantation conditions