

10th Young DZHK Retreat 2024

11-12 September 2024 in Frankfurt am Main

Lindner Congress Hotel Frankfurt, Bolongarostr. 100, 65929 Frankfurt

WEDNESDAY, 11 SEPTEMBER 2024

11:30 am *Registration & lite bites*

12:30 pm

12:30 pm **Welcome**

Sonia Singh, Simone-Franziska Glaser, Michael Molitor

12:40 pm-
1:10 pm

Postdoc start-up grant fellows

Chairs: Florian Constanty & Michael Molitor

1. Enhanced Krüppel-like factor 15 expression prevents cardiomyocyte remodeling in a stem cell based engineered human myocardium stress model | Eric Schoger (Lower Saxony)
2. Multi-omic factor analysis uncovers immunological signatures with pathophysiologic and clinical implications in coronary syndromes | Kami Pekayvaz (Munich)
3. Release and cardiac downstream effects of bone morphogenetic protein 10 (BMP10), a potential novel biomarker in atrial fibrillation | Laura Sommerfeld (Hamburg/Kiel/Lübeck)
4. Oxidative stress: The main driver for heart failure post CKD in diabetic swine model | Payel Sen (Munich)

10 min panel discussion

1:10 pm-
2:00 pm

1st Oral session – Vascular biology

Chairs: Tobias Reinberger & Simone-Franziska Glaser

1. Peripheral vessels tortuosity index and prognosis in patients undergoing transcatheter aortic valve replacement | Martin Jurisic (Munich)
2. Differential cardiovascular health effects of nano- and micro-particles in mice as a rationale for the disease burden of ultrafine and fine particles in humans | Marin Kuntic (Rhine-Main)
3. Pneumonia-associated atherosclerosis in ApoE-deficient mice | Lisa Peters (Berlin)
4. Long non-coding RNA LINC-PINT regulates smooth muscle cell plasticity in developing abdominal aortic aneurysms | Zhaolong Li (Munich)

10 min panel discussion

2:00 pm-
3:00 pm

Networking event

3:00 pm-
4:30 pm

1st Poster session (A-C) & coffee

Poster session A – Vascular biology

Chairs: Christina Mertens & Leo Nicolai

1. Monocyte function and polarization in patients with primary aldosteronism | Jonathan Gillan (Berlin)
2. Transcription regulation by TBX18 in smooth muscle cells is essential for normal aortic development and homeostasis | Debanjan Mukherjee (Rhine-Main)
3. Glutathione biosynthesis regulates ribosome function and enhances endothelial quiescence | Christina Karantanou (Heidelberg/ Mannheim)
4. Endothelial cysteinolysis protects against age-related cardiac hypertrophy | Maria-Kyriaki Drekolia (Heidelberg/ Mannheim)
5. CRIP1 interaction with SNX1 influences hypertension-related inflammatory signaling pathways | Teng Tong (Hamburg/Kiel/Lübeck)
6. Cyst(e)ine import and catabolism preserve endothelial chromatin accessibility and promote vessel growth | Janina Mettner (Heidelberg/Mannheim)
7. The interplay between platelets and neutrophils in (cardio)vascular disease and infection | Maité Mulkers (Munich)

Poster session B – Cellular biology of the heart

Chairs: Sonia Singh & Florian Constanty

1. Age-related obesity impairs cardiac function and induced mitochondrial proton leakage in mice | Patricia Owesny (Berlin)
2. Protein signatures associated with methylation patterns of heart failure phenotypes | Mykhailo Krolevets (Rhine-Main)
3. A new biosensor platform for high throughput signaling analysis in iPSC-derived cardiomyocytes and cardiac fibroblasts | Fabian Koitka (Lower Saxony)
4. Biochemical Profiling of Collagen and Elastin in Thoracic Aortic Aneurysms | Joscha Büch (Munich)
5. Phenotypic analysis of macrophage lncRNAs using pooled CRISPR screens | Niklas Petzold (Munich)
6. Elucidation of cardio- and renoprotective effects of mutant phosphodiesterase 3A | Anastasiia Sholokh (Berlin)
7. LZTR1-deficiency drives heart disease by modulating cellular communication | Jakob Fell (Lower Saxony)

Poster session C – Epidemiology and thrombosis

Chairs: Anna Feuerstein & Michael Molitor

1. Revealing cardiac aging effects on surface electrocardiograms that AI use for mortality prediction | Philip Hempel (Lower Saxony)
2. The interplay between tinnitus, cardiovascular risks, and risk of death – results from a large population-based cohort | Omar Hahad (Rhine-Main)
3. Removing array-specific batch effects in GWAS mega-analyses by applying a two-step imputation workflow | Mohamed Kamal Nasr (Greifswald)
4. DNA methylation patterns predict primary 3-point major adverse cardio- or cerebrovascular events | Markus Ingold (Rhine-Main)
5. Procoagulant platelet activation is essential for venous thrombosis | Rainer Kaiser (Munich)

6. Impaired lung endothelial wound healing promotes the development of in situ thrombosis in chronic thromboembolic pulmonary hypertension | Jakob Michael König (Berlin)
 7. Explaining the Decision of Artificial Intelligence for Diagnosis of Left Bundle Branch Block in 12 Lead ECGs | Nicolai Spicher (Lower Saxony)
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4:30 pm-
5:20 pm

1st Rapid fire session

Chairs: Sonia Singh & Laura Parma

1. LMNA is a novel CAMK2 phosphorylation target and potentially contributes to the development of RBM20 cardiomyopathy | Zakiya Ghouse (Heidelberg/ Mannheim)
2. Single-cell analysis reveals molecular dynamics of lymphatic endothelial cells in mouse and human heart failure | Sandro A. Meunier (Munich)
3. Plasma proteomics for the prediction of primary myocardial infarction - results from the Gutenberg Health Study | Celine Müller (Rhine-Main)
4. Neutrophil dynamics in patients with MI-associated ventricular arrhythmia | Lukas Barth (Berlin)

8 min panel discussion

5. Pharmacological and genetic ablation of the mitochondrial pyruvate carrier 1 in hiPSC-cardiomyocytes: impact on proliferation and function | Greta Dockenfuss (Hamburg/Kiel/Lübeck)
6. Identification of high-risk atherosclerotic lesions via NIRF-IVUS imaging in diseased rabbit models | Alicia Beele (Munich)
7. Combinatorial inhibition of miR-1a and miR-15b drives adult heart regeneration | Ting Yuan (Rhine-Main)
8. Role of PTP1B/Ptpn1 and TCPTP/Ptpn2 in sepsis-induced cardiomyopathy | Flora Elisa Salzwedel I (Greifswald)

8 min Panel Discussion

5:20 pm-
5:45 pm

Coffee break

5:45 pm-
6:15 pm

Joint YDGK-YDZHK-session

Chairs: Simone-Franziska Glaser & Leo Nicolai

Social media in Cardiology | Philipp Breitbart, Speaker of the Young DGK, University Heart Center Freiburg

6:15 pm-
7:05 pm

2nd Oral session – Clinical epidemiology & Heart failure

Chairs: Christina Mertens & Anna Feuerstein

1. Deep phenotyping of peripheral blood mononuclear cells by single cell RNA sequencing in heart failure and metabolic dysregulation | Maximilian Dominik Nuber (Rhine-Main)
2. Perioperative platelet function assessment in minimally invasive mitral valve surgery: Comparative analysis of two cardio-pulmonary-bypass-systems and implications for postoperative bleeding-risk | Daniel Hake (Berlin)

3. Deciphering the molecular effects of physical activity by a targeted proteomics approach in individuals with established heart failure | Anna Kerber (Rhine-Main)
4. CFTR-modulators attenuate platelet activation and aggregation in blood of healthy donors and COVID-19 patients | Erik Asmus (Berlin)

10 min panel discussion

7:05 pm-
8:30 pm

Dinner

8:30 pm
9:30 pm

Keynote lecture

Chair: Christina Mertens

My journey through dimensions: from petri dishes to organoids in space | Francesco Pampaloni, Buchmann Institute for Molecular Life Sciences of the Goethe University Frankfurt

9:30 pm

End of day 1

THURSDAY, 12 SEPTEMBER 2024

8:30 am-
9:15 am

Keynote lecture

Chair: Sonia Singh

DFG support measures available for early and advanced (medical) scientists | Sigrid Hanke, Programme director at the German Research Foundation (DFG), Bonn

9:15 am-
10:05 am

2nd Rapid fire session

Chairs: Tobias Reinberger & Nadya Al-Wakeel-Marquard

1. Nuclear detention of ACADVL promotes heart failure with reduced ejection fraction | Victoria Mauz (Heidelberg/Mannheim)
2. Adventitial leptin receptor-expressing fibroblasts are preferential contributors to fibrotic remodeling of the heart post infarction | Veronica Larcher (Rhine-Main)
3. Functional and mitochondrial analysis of a human desmin-related cardiomyopathy model | Leonie Ewald (Hamburg/Kiel/Lübeck)
4. Extracellular RNA as a key inflammatory trigger in subarachnoid hemorrhage-induced cardiac dysfunction and systemic inflammation | Mikayel Poghosyan (Berlin)

8 min panel discussion

5. The relevance of the condition of myocardium reserves score from a cloud-based analytics platform of Holter ECG data in heart failure | Noémie Bélanger (Rhine-Main)
6. Phenotyping the circulating immune response in patients with infective endocarditis | Robin Dewender (Munich)

7. Cardiac effects of histone 3 modifications by CaMKII-EZH2 crosstalk | Farhad Bazgir (Heidelberg/Mannheim)
8. TREM-1 inhibition reduces ventricular arrhythmia burden in STORM mice by modulating neutrophil-mediated immune responses | Mike Morneweg (Berlin)

8 min panel discussion

10:05 am-
10:30 am

Coffee break

10:30 am-
11:20 am

3rd Oral session – Cellular biology of the heart

Chairs: Gesine Dittrich & Marcus Vollmer

1. SHISA3 regulates human epicardial EMT through inhibition of the TGF-beta signaling pathway in transient vascular progenitor states | Laura Priesmeier (Lower Saxony)
2. Inhibiting CX3CR1+ proinflammatory macrophages ameliorates heart failure with preserved ejection fraction in-vivo and in a novel cardiac organoid model | Julian Leberzammer (Rhine-Main)
3. Development of a heart-specific AAV vector with cross-species selection for cardiac-directed gene therapy | Anna Katharina Schrattel (Heidelberg/ Mannheim)
4. Hematopoietic loss of KDM6A impairs cardiac recovery post myocardial infarction via pro-inflammatory myeloid cells | Emmanouil Solomonidis (Rhine-Main)

10 min panel discussion

11:20 am
12:30 pm

2nd Poster session (D-F)

Poster session D – Myocardial function

Chairs: Gesine Dittrich & Tobias Reinberger

1. Adrenergic signaling regulates post-infarct immune cell response in the pericardial adipose tissue | Anna Kaltenbach (Munich)
2. Epigenetic Profiling of Non-Dilated Left Ventricular Cardiomyopathy (NDLVC): Distinct Methylome Signatures Compared to Dilated and Ischemic Cardiomyopathies | Luka Nicin (Berlin)
3. BDNF & heart failure - contractility, secretome and cell type specific gene expression of isolated perfused hearts | Caterina Redwanz (Greifswald)
4. Preclinical evaluation of CRISPR-based therapies for Noonan Syndrome caused by deep-intronic LZTR1 variants | Carolin Knauer (Lower Saxony)
5. Transcription factor Inducible cAMP Early Repressor (ICER) modulates cardiac monocyte/macrophage response in acute myocardial infarction due to metabolic acidic stress | Moritz Aßmann (Rhine-Main)
6. Investigating the role of PITX2 in atrial metabolic function | Ellen Thiemann (Hamburg/Kiel/Lübeck)
7. Transcription factor Zeb1 is a key regulator of cardiomyocyte structure and function | Parul Gupta (Heidelberg/Mannheim)
8. Vision transformer-based automated assessment of echocardiogram image quality improves heart failure specific outcome prediction | Aída Romano Martínez (Rhine-Main)

Poster session E – Cardiovascular regeneration

Chairs: Simone-Franziska Glaser & Marcus Vollmer)

1. The incubated chicken egg as a 3R model in basic electrophysiological research | Judith Rees (Berlin)
2. Proliferative strategies to increase the success of hiPSC CM transplantation | Marie Nehring (Hamburg/Kiel/Lübeck)
3. Importance of erythrocyte arginase-1 for smooth muscle foam cell formation and atherosclerosis progression | Beichen Sun (Rhine-Main)
4. NNT protects against HFpEF-associated cardiac remodeling by modulating sterile inflammation in the heart | David Faidel (Berlin)
5. Investigating the role of the AP-1 transcriptional complex during cardiac remodeling | Srishti Shekhar (Heidelberg/ Mannheim)
6. Investigating the Interplay between Deformability and Extracellular Matrix Composition in differentiated human induced pluripotent stem cells | Moyra Schweizer (Hamburg/Kiel/Lübeck)
7. Plasma levels of B cell activating factor (BAFF) positively correlate with interferon-gamma-induced protein 10 (IP-10) in HFpEF patients | Esther Klein (Greifswald)

Poster session F – Cellular biology & Anatomy of the heart

Chairs: Laura Parma & Nadya Al-Wakeel-Marquard

1. Slc45a4 regulates endothelial cell biology and autophagy | Vincent Elvin Leonard (Rhine-Main)
2. Establishment of an in vitro model of human cardiac aging to study the circadian clock | Margaux Lecacheur (Rhine-Main)
3. Comparative Outcomes of Drug-Coated Balloon Angioplasty versus Second-Generation DES for ISR: A Real-World Analysis | Johannes Krefting (Munich)
4. Non-invasive techniques as clinical surrogate biomarkers for endothelial dysfunction in atherosclerotic cardiovascular disease | Anna Lebedeva (Greifswald)
5. Investigation of sympathetic neurons' and cardiomyocytes' interaction in a patient-specific induced pluripotent stem cell Takotsubo model | Anna Aylin Seedorf (Lower Saxony)
6. Loss of cysteine carbon flux to H2BK46ac re directs pluripotent stem cells towards mesodermal lineage commitment | Janina Wittig (Heidelberg/Mannheim)
7. Tubular engineered heart tissues on vascular scaffolds to assist the Fontan circulation | Lukas Narjes (Hamburg/Kiel/Lübeck)
8. How cardiac fibroblasts react to cardiomyocyte signaling – focus on epigenetic signal integration | Sandra Gajewsky (Hamburg/Kiel/Lübeck)

12:45 pm **Wrap-up and announcement of highlight talks**

12:55 pm **Evaluation**

1:00 pm End of the Young DZHK Retreat

2:00 pm Start DZHK Retreat (preliminary programme)