



METAHEART

European Network to tackle METAbolic alterations in HEART failure
(EU-METAHEART; COST Action 22169)

2nd International Conference

Hotel Lielupe, Jurmala/Riga, Latvia
September 16th - 18th, 2025



ONLINE – PROGRAM (times in Central European Summer Time, CEST)

FUJIFILM
VISUALSONICS

Monday, September 15th

Arrival of YRI and abstract presenters

Tuesday, September 16th

07:30 – 08:30 **First YRI committee meeting**

Meeting with the action chair, defining tasks and responsibilities.

09:00-10:30 **Research funding in Europe – which schemes do we have?**

Chairs: Katrin Streckfuß-Bömeke (DE) & Lisa Heather (UK)

09:00 – 09:25 **Antigone Lazou** (GR): EU funding bodies

09:25 – 09:50 **Melanie Paillard** (FR): Local examples and inter-country funding schemes

09:50 – 10:15 **Sigrid Hanke** (DE): German Research Foundation strategies for establishing connections with other European countries ([online](#))

10:15 – 10:30 General discussion

10:30 - 11:00 **Coffee break**

11:00 - 12:00 **New frontiers: How to use AI in cardiovascular science?**

Chairs: George Kararigas (IS) & Lisaidy Ramos Regalado (ES)

11:00 – 11:25 **Felix Braczko** (DE): Use of AI in analyzing experimental data ([online](#))

11:25 – 11:50 **Amir A. Mahabadi** (DE): Use of AI in cardiology ([online](#))

11:50 – 12:00 General discussion

12:00 – 13:00 **Lunch break**

13:00 - 14:30 **From here on: different career tracks**

Chairs: Slavica Mutavdzin Krneta (RS) & Christoph Maack (DE)

13:00 – 13:30 **Panagiotis Efentakis** (GR): Moving from science to pharma company ([online](#))

13:30 – 14:00 **Marie Allen Schroeder** (DK): A career in big pharma and venture capitalism ([online](#))

14:00 – 14:30 General discussion

14:30 - 15:00 **Coffee Break**

15:00 -16:30 Scientific publishing: Meet the editors**Chairs:** Luís Grilo (PT) & Petra Kleinbongard (DE)15:00 – 15:25 **Merry Lindsey** (US) AJP Heart and Circulatory Physiology (*online*)15:25 – 15:40 **Christoph Maack** (DE): How we do it at *Circulation Research*15:40 – 16:05 **YRIs prepare topic:** Preprint servers: Pros and Cons

16:05 - 16:15 General discussion

16:15 – 16:45 **Inês Falcão Pires** (PT) A career in academia – how did I do it?**Zoom-Link for the scientific program:**<https://ukw-de.zoom.us/j/94587180921?pwd=7FL1wbN76QvjX2G3T45atBkuueyZK0.1>

Meeting-ID: 945 8718 0921

Code: 460208

Wednesday, September 17th

07:30 – 07:50 **Christoph Maack** (DE): Welcome, Overview and update on the COST Action EU-METAHEART (CA22169)

07:50 – 09:20 **Substrate and intermediary metabolism in heart failure (WG1)**
Chairs: **Mathias Mericskay** (FR), **Lisa Heather** (UK)

07:50 – 08:15 **Dana Dawson** (UK): Ectopic fat deposition: the good, the bad & the ugly ([online](#))
08:15 – 08:40 **Nikole Byrne** (AT): Sirtuins and metabolism
08:40 – 09:05 **Reinis Vilskersts** (LV): Carnitine-lowering therapy in heart failure
09:05 – 09:20 **Riona M. Devereux** (UK): Identification of the lipid-protein interactome: A chemo-proteomic approach to mechanistically understand cardiometabolic dysfunction
09:20 – 09:35 **Alireza Saadatmand** (DE): CaMKII regulates cardiac metabolic substrate switching during heart failure

09:35 – 10:15 **Coffee break**

10:15 – 12:00 **Mechano-energetic uncoupling and redox alterations in cardiac diseases (WG4)**
Chairs: **Simon Sedej** (AT), **Luc Bertrand** (BE)

10:15 – 10:40 **Jelena Jovanic** (BIH): Clinical aspects and imaging of cardiometabolic diseases
10:40 – 11:05 **Nazha Hamdani** (DE): From cardiometabolic risk to HFpEF: Mechanisms and Transitions
11:05 – 11:30 **Ines Pires** (PT): Ketones across the heart failure spectrum
11:30 – 11:45 **Sarah Piel** (DE): Higher myocardial mitochondrial ketone body oxidation capacity
11:45 – 12:00 **Sanushi T. Dambure Vithanachchi** (UK): Impact of dual SGLT1/2 inhibitor Sotagliflozin on the cardiac genetic profile in cardiorenal HFpEF ([online](#))

12:00 – 13:00 **Lunch break**

13:00 – 14:30

Chairs and Jury:

Young Researcher and Innovator (YRI) Award
Gemma Vilahur (ES), **Katrin Streckfuss-Bömeke** (DE), **Simon Sedej** (AT),
Melanie Paillard (FR), **Mathias Mericskay** (FR), **Luca Liberale** (IT)

13:00 – 13:15

Lisaidy Ramos Regalado (ES): Restoring liver lipid metabolism in hypertriglyceridemic rats through bone marrow transplantation.

13:15 – 13:30

Luís Grilo (PT): Sex-Specific Cardiometabolic Programming by Maternal Obesity

13:30 – 13:45

Kaitlyn Dennis (UK): FoxO1-zDHHC4-CD36 S-Acylation Axis Drives Metabolic Dysfunction in Diabetes

13:45 – 14:00

Megan Young (UK): Diltiazem alleviates cardiometabolic phenotype in type 2 diabetes independent of lowering elevated myocardial $[Na^+]_i$

14:00 – 14:15

Ettore Vanni (BE): AMPKa2 preserves cardiac function in pressure-overload hypertrophy by suppressing OGlcNAcylation independently of Metabolic Reprogramming

14:15 – 14:30

Imane Oukili (FR): Modulation of NAD levels following ischemia-reperfusion injury in cardiomyocytes

14:30 – 15:00

Coffee break

15:00 – 16:30

Poster judges:

Poster session (not broadcasted via Zoom)

George Kararigas (IS), **Maija Dambrova** (LV), **Gabriele Schiattarella** (DE)
Alessandra Ghigo (IT), **Panagiota-Efstathia Nikolaou** (GR), **Luc Bertrand** (BE)

 *For the **list of posters**, see below

16:30 – 17:00
Sponsored presentation by Visualsonics
Milan Kopecek: Latest Development on High-Frequency Ultrasound and Photoacoustic Cardio Imaging

17:00 – 18:00
Keynote lecture

Chair:

Dunja Aksentijević (UK)

Damian Tyler (UK)

Fueling the heart: Nuclear Magnetic Resonance approaches to study cardiac metabolism from bench to bedside

Thursday, September 18th

07:30 – 09:15

Immunometabolism (WG3)

Chairs:

Alessandra Ghigo (IT), Panagiota-Efstathia Nikolaou (GR)

07:30 – 07:55

James Thackeray (DE): Imaging cardiac inflammation

07:55 – 08:20

Dunja Aksentijevic (UK): Targeting the immune-cardiometabolic axis in the diabetic heart

08:20 – 08:45

Wouter Meijers (NL): Immune checkpoints as therapeutic targets for heart failure

08:45 – 09:00

Gabriela Obdulia Giron (ES): Innate immune activation and T-cell exhaustion in subclinical diabetic atherosclerosis: potential biomarkers for atherosclerotic cardiovascular risk

09:00 – 09:15

Manolis Mavroidis (GR): Inflammatory activation and metabolic impairment are important mediators of ARVC pathophysiology

09:15– 09:45

Coffee break

09:45 – 11:35

Metabolic impact of coronary vascular dysfunction (WG2)

Chairs:

Luca Liberale (IT), Petra Kleinbongard (DE)

09:45 – 10:05

Ivana Iveljic (BIH): Long-term effects of 5-Fluorouracil and capecitabine adjuvant colorectal cancer chemotherapy on coronary arteries

10:05 – 10:25

Attila Kiss (AT): Update on lymph vessels

10:25 – 10:45

Oana Sorop (NL): Experimental animal models of coronary microvascular dysfunction

10:45 – 11:00

Caterina Redwanz (DE): Metabolic alterations and oxidative stress in endothelial cells in a cardiomyocyte-specific transgenic murine heart failure model

11:00 – 11:15

Giulia Guerra (IT): Mapping early cardiac stress in doxorubicin toxicity: a multi-omics view of metabolic rewiring

11:15 – 11:30

Elsa D. Silva (PT): Extracellular Vesicle-Mediated Endothelial Dysfunction in Heart Failure with Preserved Ejection Fraction ([online](#))

11:30 – 13:00

Lunch break

13:00 – 14:00

Short-term scientific missions (STSMs)

Chairs:

Petra Kleinbongard (DE), Katrin Streckfuß-Bömeke (DE)

13:00 – 13:20

Matthias Ernst (AT): Empagliflozin Improves Cardiac Function via Metabolic Restoration in Pressure Overload Induced LV Hypertrophy

13:20 – 13:40

Stefanie Hoppe (DE): Crosstalk of cardiomyocytes and endothelial cells in a patient-derived stem cell model of tachycardia

13:40 – 14:00

Aleksandra Paterek (PL): Epicardial Fat Remodeling in HFrEF: Loss of Buffering Capacity and Lipotoxic Risk

14:00 – 15:00

Core group meeting

(this meeting has a different Zoom link)

Poster session on Wednesday, September 17th, 16:00 – 17:30

Poster #	Name	First name	Presentation title
1	Bartekova	Monika	Cardioprotective potential of natural polyphenols in metabolically altered heart: Effect of quercetin in aging type 2 diabetic ZDF rats
2	Daiou	Angeliki	HIF-1 α restricts cardiomyocyte regeneration in the neonatal mammalian heart
3	Delalat	Simin	Role of Inflammation and Oxidative Stress in Cardiac Protein Oxidation and HFpEF Progression in Type 2 Diabetes
4	Dörmann	Niklas	Cardiomyocyte-Specific TFEB Deletion Induces Age-Dependent Heart Failure, Exacerbated by Starvation
5	Dulova	Ulrika	Evaluating Impact of Quercetin on Cardiac Mitochondrial Function in a Diabetic Rat Hearts
6	Eickelmann	Chantal	Causal relationship between increased mitochondrial fission mediator Drp1 in endothelial cells and microvascular damage after ischemia/reperfusion injury
7	Ertugrul	Imran	Preserving mitochondrial function in donor heart preservation with sodium thiosulfate: a pre clinical ovine model
8	Kehat	Izak	Sub-cellular in vivo cardiac proteomics of sarcomere and ribosome interactomes identifies skeletal NACA's role in mitochondrial protein sorting
9	Krims Davis	Kristaps	Tracing Acetylcarnitine in Mice and Humans: Insights into its Bioavailability, Metabolism, and Excretion
10	Krneta	Slavica M.	Modulation of Cardiac LDH and MDH Isoenzymes by Folic Acid and Pyridoxine in Experimental Diabetes
11	Kumar	Ravi	Cardiomyocyte-specific ATF4 knockout worsens cardiac dysfunction following chronic pressure overload
12	Lazou	Antigone	The RNA-binding protein hnRNP D drives cardiomyocyte remodeling during the progression to heart failure
13	Marino	Alice	SMIT1 as a new potential target in cardiometabolic heart failure
14	Miteniece	Anna	HMG-CoA reductase inactivation results in disrupted fatty acid β -oxidation and accumulation of long-chain acylcarnitines
15	Ravingerova	Tanya	Advances in non-pharmacological strategies aimed to trigger innate cardioprotection in healthy and diseased myocardium
16	Russo	Michele	Unravelling the role of protein O-GlcNAcylation in the pathophysiology of anthracycline- induced cardiotoxicity
17	Walczak	Iga	Altered bioenergetics and mitochondrial dysfunction in microvascular endothelial cells during heart failure

About the COST Action EU-METAHEART (CA22169):

The COST Action “EUropean network to tackle METAbolic alterations in HEART failure” (EU-METAHEART) will bring together excellent researchers from Europe to contribute a broad spectrum of scientific expertise, cutting-edge technologies, scientific exchange and education to foster breakthrough science that moves the field forward towards improving the treatment of patients with heart failure. By sharing diverse expertise that cover not only conventional analyses of metabolism and mitochondrial function, but also omics-based approaches towards genetics, epigenetics and metabolism and in particular, integrated assessment of excitation-contraction coupling with mitochondrial redox control and energetics, as well as advanced in vivo imaging technologies, the novelty of this COST Action is that it will allow to develop a comprehensive and cutting-edge approach towards deeper understanding of metabolic dysfunction in HF. We have identified four scientific key areas to which metabolic or mitochondrial dysfunction are central, which will be addressed by four working groups (WGs):

- 1) Impact of metabolic disorders on substrate and intermediary metabolism in cardiac myocytes
- 2) Metabolic aspects of vascular dysfunction
- 3) Immunometabolism: how metabolic alterations control inflammation and vice versa
- 4) Mechano-energetic uncoupling and mitochondrial redox alterations

These research areas are tightly intertwined and can hardly be investigated in isolation (from each other). Therefore, EU-METAHEART will employ an integrative approach to bring all these research fields under one umbrella. The working groups focus on their respective four topics, but benefit from the expertise in the respective other WGs to overcome scientific and methodological boundaries and rapidly move the field forward towards drug development.

For more information, please go to: <https://cost-metaheart.eu/>
<https://www.cost.eu/actions/CA22169/>

And/or follow us at X: @EU_METAHEART

Zoom-Link for the scientific program:

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