

Aarhus,
24 – 27 April 2023

PROGRAMME

EUROPEAN SOCIETY FOR **MICROCIRCULATION**



AARHUS
UNIVERSITY

Scientific committee



Professor Christian Aalkjær
Aarhus University, Denmark
Chairman of the Committee



Professor Ylva Hellsten
University of Copenhagen, Denmark



Associate professor Ana Briones
University of Madrid, Spain



Professor Daniel Henrion
University of Angers, France



Professor Nicola J Brown
University of Sheffield, UK



Professor Ulf Simonsen
Aarhus University, Denmark



Professor Cor de Wit
University of Lübeck, Germany

Words of Welcome

We are happy and proud to welcome you to the 2023 European Society for Microcirculation conference in Aarhus. With the outstanding programme it promises to be an inspiring meeting focusing on all aspects of the microcirculation.

Improving our knowledge on the microcirculation is an important goal to pursue, as the importance of microcirculation in development of cardiovascular diseases, like myocardial infarction and stroke, cardiometabolic diseases, like diabetes and hypertension with related complications such as dementia, cognitive decline, heart failure, and chronic kidney disease is becoming more and more evident.

As a new feature of the meeting, we have this year arranged a “Young Investigator Course” entitled *What You Need To Know About Life In The Arterial Wall*. The course is packed with high-level scientific lectures, a practical, networking activities and guided discussions of conference presentations. We are thrilled that 60+ young researchers have signed up for the course and wish them a great and learning full experience.

However, all the knowledge in the world is worth nothing without being shared and discussed with fellow peers. Online meetings and conferences are becoming the new normal, but, at the European Society for Microcirculation we believe that meeting physically, listening, asking questions, networking, and perhaps sharing a drink is the format for exchange of knowledge and creation of new collaborations. We have therefore done our best to make room for such activities throughout the meeting. We sincerely hope that you will exploit every possibility at this meeting to gain new knowledge and expand your scientific and personal network.

We wish you all a great conference.

On behalf of the Organizing Committee

Prof. Christian Aalkjær

President of the European Society for Microcirculation

The European Society for **Microcirculation** thank the sponsors and exhibitors of the ESM 2023 Conference:

GOLD sponsor:



SILVER sponsor

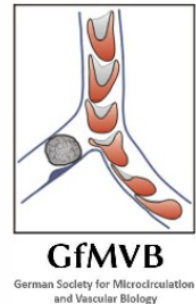
BRONZE sponsor



Sponsors of individual sessions



Sponsors session 3.6



Exhibitors



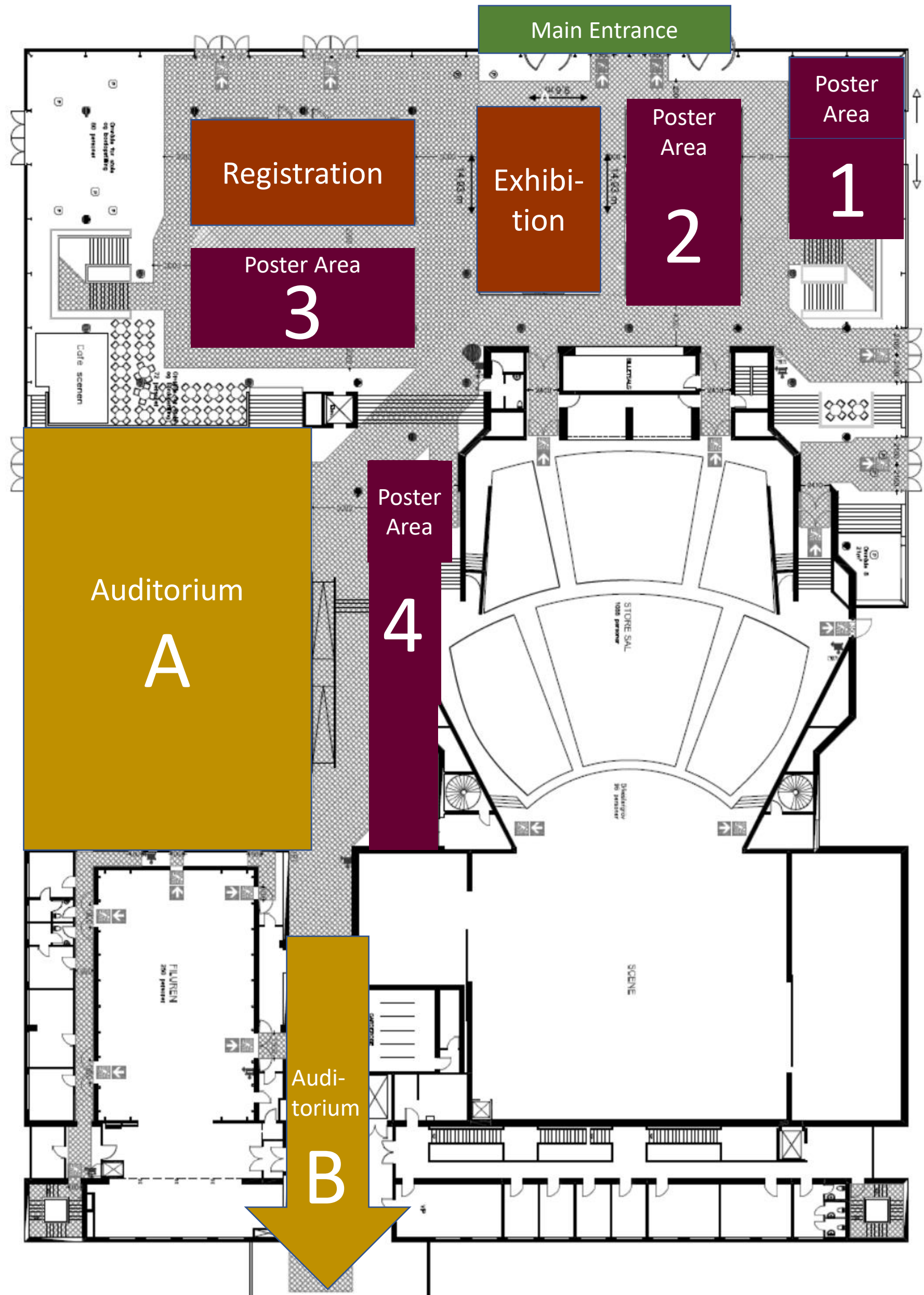
The European Society for **Microcirculation**
thanks the following funding agencies

novo nordisk
foundation

 **LUNDBECKFONDEN**

CARLSBERG FOUNDATION

 **Danish Cardiovascular Academy**



SCHEDULE FOR POSTER SESSION

Session 1, Monday April 24 15.30-16.30				
	THEME	POSTER	Chairmen	
Poster Area 1	Cerebral	1-1 to 1-10	Vladimir Matchkov	Ebbe Boedtkjer
Poster Area 2	Diabetes Endothelium	2-4 to 2-13	Anja Meissner	Chris Garland
Poster Area 3	Hypertension	3-1 to 3-10	Akos Koller	Brant Isakson
Poster Area 4	Methods Inflammation	4-1 to 4-10	Leif Østergaard	Jaap Van Buul

Session 2, Tuesday April 25 13.15-14.30				
	THEME	POSTER	Chairmen	
Poster Area 1	Cerebral ion transport	1-11 to 1-20	Erik Bakker	Ezter Farkas
Poster Area 2	Endothelium	2-14 to 2-23	Jo De Mey	Miranda Good
Poster Area 3	Hypertension Imaging	3-11 to 3-20	Ulf Simonsen	Dmitry Postnov

Session 3, Wednesday April 26 16.00-17.00				
	THEME	POSTER	Chairmen	
Poster Area 1	Ion transport diabetes	1-21 to 2-3	Ed van Bavel	Iain Greenwood
Poster Area 2	Endothelium Eye	2-24 to 2-34	Ana Stupin	Boy Houben
Poster Area 3	Imaging	3-21 to 3-30	Joanna Kalucka	Stefan Chlopicki
Poster Area 4	Exercise	4-11 to 4-24	Ylva Hellsten	Cor de Wit

Aarhus, 24 – 27 April 2023

Programme

Monday April 24

9.00-12.15	What you need to know about life in the arterial wall Free course for pregraduates, PhDs and postdocs (up to 3 years after PhD):	
10.00-11.30	ESM Board Meeting at meeting room Arien in the Concert Hall	
10.00	Registration opens	
13.00-13.15	Welcome and opening	
	Session 1.1 - Auditorium A	
13.15-13.55	Plenary lecture The cerebral microcirculation: roles in oxygen transport and disease Leif Østergaard, Aarhus Chair: Eszter Farkas	
	Session 1.2 - Auditorium A	Session 1.3 - Auditorium B
14.00-15.30	Inflammation Chairs: Ralf Brandes, Ana Briones	Ischemia of the heart Joint session with the Microcirculatory Society Chairs: Henning Morawietz, Kim Dora
14.00-14.30	Inflammatory mechanisms of vascular remodelling in hypertension Tomasz Guzik, Glasgow	Endothelial Pannexin modulates ischemic injuries Miranda Good, Boston
14.30-15.00	Contribution of oligodendrocyte precursor cells to cerebral small vessel disease Sebastien Foulquier, Maastricht	Coronary microvascular dysfunction in cardiac disease – an overview from the clinical perspective Eva Prescott, Copenhagen

Monday April 24

15.00-15.15	Overexpression of dimethylarginine dimethylaminohydrolase 1 protects from angiotensin II-induced cardiac hypertrophy and vascular remodeling Natalia Jarzebska, Dresden	Asymmetric dimethylarginine augments myogenic tone and inhibits vasodilation in rat coronary arteries Hanson Ng, Oxford
15.15-15.30	Interferon stimulated gene (ISG)15 deletion protects against aldosterone-induced hypertension Raquel González Blázquez, Madrid	Oct-1 is a Key Mediator for Angiotensin II- and Oxidized LDL-Induced Upregulation of Angiotensin-II Type-1 Receptor: New Implications for the Development of Atherosclerosis Nada Al Arawe, Berlin
15.30-16.30	Poster session I Exhibition	
Session 1.4 - Sponsored by SSMVR - Auditorium A		
16.30-17.10	Plenary lecture Vascular-macrophage crosstalk in the muscle Karrien De Bock, Zürich Chair: Karl Swärd	
17.45-18.45	Welcome reception Town Hall	

Tuesday April 25

08:00

Concert Hall opens

Session 2.1 - Auditorium A

8.30-9.10	<p>Plenary lecture Exercise to reverse microvascular dysfunction induced by age and lifestyle Ylva Hellsten, Copenhagen Chair: Stuart Egginton</p>
-----------	--

Session 2.2 - Auditorium A

Session 2.3 - Auditorium B

9.15-10.45	Cerebral circulation, Alzheimer	Obesity
	Chairs: Vladimir Matchkov, Søren Grubb	Chairs: Ed Eringa, Elena Osto
9.15-9.45	<p>The Na⁺,K⁺-ATPase-dependent signaling modulates cerebrovascular tone and neurovascular coupling Vladimir Matchkov, Aarhus</p>	<p>Inflammation and resistance artery perivascular adipose tissue function in cardiovascular disease Sophie Saxton, Manchester</p>
9.45-10.15	<p>Deciphering the vascular component of Alzheimer's disease Marta Cortes-Canteli, Madrid</p>	<p>Endothelial cells at the spotlight of adipose tissue biology Mariona Graupera, Barcelona</p>
10.15-10.30	<p>Preserved blood-brain barrier and neurovascular coupling in 5xFAD mouse model of Alzheimer's disease in vivo Oleg Zhukov, Copenhagen</p>	<p>Obesity alters the angiocrine landscape in adipose tissue Andreas Fischer, Göttingen</p>
10.30-10.45	<p>Medin, the most common human amyloid, promotes age-associated neurovascular dysfunction and Aβ deposition Marleen Veit, Tübingen</p>	<p>Effects of obesity on skeletal muscle microvascular function in children Rasmus Kopp Hansen, Aalborg</p>

10.45-11.15

Break - Exhibition

Tuesday April 25

Session 2.4 - Auditorium A

Session 2.5 - Auditorium B

11.15-12.45	Diabetes and the eye Chairs: Jo DeMey, Henner Hanssen	Ion channels Chairs: William Jackson, Akos Koller
11.15-11.45	Retinal microvascular function and type 2 Diabetes: a vicious cycle Boy Houben, Maastricht	Targeting Kv channels in pulmonary arterial hypertension Angel Cogolludo, Madrid
11.45-12.15	Regional variations in vascular lesions in diabetic retinopathy. Problem or advantage? Toke Bek, Aarhus	Rescuing Kv7 channel function in hypertension by targeting the microtubule network Tom Jepps, Copenhagen
12.15-12.30	Is the microvascular responsiveness to the locally delivered glucagon-like peptide-1 analogue, liraglutide, impaired in individuals with type 2 diabetes and retinopathy? Kim Gooding, Exeter	Functional remodeling of arterial tone regulation in postnatal development: switch of the leading potassium channels from less to more calcium-dependent channel types Rudolf Schubert, Augsburg
12.30-12.45	Induction of VEGF-A165a by high glucose in human retinal and endothelial cells and VEGF concentration in vitreous fluid of diabetic patients Henning Morawietz, Dresden	Channel-independent function of Golgi-localized endothelial Pannexin Abigail Wolpe, Virginia
12.45-13.15	Lunch	
13.15-14.30	Poster session II Exhibition	

Tuesday April 25

Session 2.6 - Auditorium A

Session 2.7 - Auditorium B

14.30-16.00	Lymphatics Chairs: Donna B. Bødtkjer, Helge Wiig	Imaging and artificial intelligence Chairs: Gerry Meninger, Stefan Chlopicki
14.30-15.00	Lymphatic endothelial heterogeneity in development and disease Taina Mäkinen, Uppsala	Imaging microvascular stiffness of the brain Dmitry Postnov, Aarhus
15.00-15.30	15-Lipoxygenase drives inflammation resolution and Treg trafficking in lymphedema Barbara Garmy-Susini, Toulouse	Application of AI on medical images for prediction of cardiovascular risk Alexios Antonopoulos, Oxford
15.30-15.45	Exploring co-ordinated regulatory mechanisms driving regenerative responses of vascular and lymphatic networks in the heart after myocardial infarction Bronwyn Berkeley, Edinburgh	'AI' Deep learning detection of vascular disease from photoplethysmography waveforms - new opportunities in vascular optics and analytics for studying the peripheral circulation John Allen, Coventry
15.45-16.00	Inhibitors of hyperpolarisation-activated cyclic nucleotide-gated channels induce positive chronotropy in isolated human collecting lymphatic vessels Donna Marie Briggs Bødtkjer, Aarhus	Spatial uncoupling of Ca ²⁺ sparks from BK channels in cerebral vascular smooth muscle cells underlies cerebral hypoperfusion in hypertension induced vascular dementia Harry Pritchard, Manchester
16.00-16.30 Break - Exhibition		
Session 2.8 - Auditorium A		
16.30-17.10	Plenary lecture Macro and microcirculation interaction Stephane Laurent, Paris Chair: Ingrid Fleming	
17.10-18.30 Drinks and networking		
17.30-18.30 General Assembly Auditorium A		

Wednesday April 26

08:00		Concert Hall Opens	
Session 3.1 - Auditorium A			
8.30-9.10	Plenary lecture Metabolic cell-cell communication in vascular homeostasis Ingrid Fleming, Frankfurt Chair: Brant Isakson		
Session 3.2 - Auditorium A		Session 3.3 - Auditorium B	
9.15-10.45	Pulmonary microcirculation Chairs: Ulf Simonsen, Francisco Perez-Vizcaino	Single cell mRNA analysis Chairs: Joanna Kalucka, Susanne Fleig	
9.15-9.45	Lung barrier regulation by endothelial ion channels in respiratory infections Wolfgang Kübler, Berlin/Toronto	Awakening vascular smooth muscle cells from quiescence Helle Jørgensen, Cambridge	
9.45-10.15	Ion channels in the pulmonary circulation in health and disease Andrea Olschewski, Graz	The cardiac microcirculation in health and disease: novel insights by single cell analysis Stephanie Dimmeler, Frankfurt	
10.15-10.30	Trained immunity in pulmonary microvascular endothelial cells promotes cancer cells adhesion Marta Stojak, Krakow	Multi-omics approaches for novel therapy development to target the microvasculature of the heart Mairi Brittan, Edinburgh	
10.30-10.45	The novel KV7 channel activator URO-K10 exerts enhanced pulmonary vascular effects independent of the KCNE4 regulatory subunit Belèn Climent, Madrid	Heterogeneity of the neurovascular unit in mouse models of neurodegenerative disease Michael Vanlandewijck, Uppsala	
10.45-11.15	Break - Exhibition		

Wednesday April 26

Session 3.4 - Auditorium A

Session 3.5 - Auditorium B

11.15-12.45	Renal microvasculature Chairs: Ina Schissl, Charlotte Mehlin	Young investigators Chair: Christian Aalkjær, Mike Hill
11.15-11.45	Avenues for glycocalyx repair in the glomerular microcirculation Rebecca Foster, Bristol	The impact of hyperglycaemia on the coronary microcirculation and the vasculoprotective effects of interleukin-36 Juma El-awaisi, Birmingham
11.45-12.15	ADAMTS12 as an extracellular checkpoint in fibrosis that licenses perivascular Gli1+ cell activation and migration Konrad Hoeft, Aachen	Endothelial glycocalyx heparan sulphate contributes to microvascular permeability and can be therapeutically targeted in diabetes Monica Gamez, Bristol
		Resolvin D2 improves cardiovascular alterations induced by aldosterone in mice Naoual Boukich El Jouhari, Madrid

Wednesday April 26

12.15-12.30	<p>Investigating the microvascular pathology of diabetic kidney disease using Super Resolution Ultrasound Scanning</p> <p>Amy Mcdermott, Copenhagen</p>	<p>Endothelial cytochrome P450 reductase-derived cholesterol limits angiogenesis</p> <p>Pedro Malacarne, Frankfurt</p>
12.30-12.45	<p>The Effects of 7-Days High-Salt Diet on Microvascular Local Thermal Hyperemia and Nitric Oxide Synthases Serum Levels in Healthy Individuals</p> <p>Ana Stupin, Osijek</p>	<p>The impact of exercise training on microvascular endothelial metabolism in individuals with type 2 diabetes</p> <p>Sophie Møller, Copenhagen</p>
12.45-13.15 Lunch		
Session 3.6 sponsored by Imedos Health GmbH - Auditorium A		
13.15-14.15	<p>Retinal microvascular analysis for cardiovascular risk stratification and treatment monitoring</p> <p>Chairs: Boy Houben, Toke Bek</p> <p>Retinal Vessel Analysis in Clinical Practice and Cardiovascular Prevention Henner Hanssen, Basel</p> <p>Micro- vs. macrovascular health screening to monitor therapy progression Lukas Streese, Düsseldorf</p>	
Session 3.7 - Sponsored by BMVBS - Auditorium A		Session 3.8 - Auditorium B
14.20-15.50	<p>Leucocyte adhesion and signaling</p> <p>Chairs: Markus Sperandio, Dean Kavanagh</p>	<p>Angiogenesis, vascular development</p> <p>Chairs: Lopa Leach, Iain Greenwood</p>
14.20-14.50	<p>How leukocytes cross the vascular endothelial barrier: secrets revealed by high-end microscopy</p> <p>Jaap Van Buul, Amsterdam</p>	<p>Organo-typical control of angiogenesis in the nervous system.</p> <p>Ferdinand le Noble, Karlsruhe</p>
14.50-15.20	<p>Preventing Coronary Microcirculatory Disturbances Following Myocardial IR injury</p> <p>Neena Kalia, Birmingham</p>	<p>Guidance of endothelial barrier formation</p> <p>Anne Eichmann, Paris/New Haven</p>

Wednesday April 26

15.20-15.35	Pericyte loss initiates microvascular dysfunction in the development of diastolic dysfunction Steven Simmonds, Leuven	NCoR1 limits specifically endothelial angiogenic capacity by affecting notch signaling via the transcription factor RBPJk Tom Teichmann, Frankfurt
15.35-15.50	A20 and the non-canonical NF-κB pathway are key regulators of neutrophil recruitment during fetal ontogeny Lou Martha Wackerbarth, Munich	TRAIL-TRAIL-R ligation regulates EC-pericyte crosstalk to generate stable microvessel networks in ischaemia Manisha Patil, Sydney
16.00-17.00	Poster Session III	
17.00-18.00	Poster Session IV	
19.00	Conference Dinner	

Thursday April 27

8.00

Concert Hall Opens

Session 4.1 - Auditorium A

8.30-9.10	Plenary lecture Making and breaking symmetry in vascular networks Holger Gerhard, Berlin Chair: Ed van Bavel
-----------	---

Session 4.2 - Auditorium A

Session 4.3 - Auditorium B

9.15-10.45	Exercise, gender and microcirculation Chairs: Cor de Wit, Ylva Hellsten	Cancer and the microcirculation Chairs: Ebbe Bødtkjær, Nicola Brown
------------	---	---

9.15-9.45	Unpicking the drivers of activity-induced angiogenesis Roger Kissane, Liverpool	Tumour microenvironment to improve immunotherapy Kebs HodiVala-Dilke, London
-----------	---	--

9.45-10.15	The microcirculation and menopause – effects of exercise training Lasse Gliemann, Copenhagen	Exploring the role of stroma as immune modulators in the extended tumour microenvironment Jackie Shields, Cambridge
------------	--	---

10.15-10.30	Short-term high-intensity interval training improves micro- but not macrovascular function in hypertensive patients Lukas Streese, Basel	Age and cancer-related endothelial-mesenchymal transition in murine lungs Marta Smęda, Krakow
-------------	--	---

10.30-10.45	Effects of diabetic neuropathy on microvascular function across lower leg skeletal muscles in humans Ryan Larsen Aalborg	Tumor feed arteries are specialized towards low resistance Ebbe Bødtkjær, Aarhus
-------------	--	--

10.45-11.15

Coffee break

Session 4.4 - Auditorium A

11:15-12:35	Plenary lecture ESM Award Lectures Chairs: Nicola Brown, Henning Morawietz, Christian Aalkjær
-------------	---

11.15-12.00	ESM, Malpighi Award lecture: Britta Engelhardt, University of Bern
-------------	--

12.00-12.30	JVR/ESM Award lecture: James Bell, Cardiff Univeristy
-------------	---

12.30-12.35	Travel, Oral, and Poster Awards and closing
-------------	---

Practical Information

Venue

The conference take place in the Concert Hall, Aarhus, Thomas Jensens Allé, 8000 Aarhus C.

All plenary and parallel sessions as well as poster sessions and meetings will be held in the Concert Hall area.

Registration

Please come to the Conference Help Desk, located on Level 1 for your pre-registered badge pick-up and on-site registration, as well as if you need any information or support.

Your Registration includes:

- Full access to the conference
- Welcome Reception (if registered)
- Coffee Breaks
- Lunches
- Conference Dinner (if registered)
- Networking drinks-sessions

Opening Hours Conference Registration Help Desk

Monday 24 th April 2023	08:30 – 15:00
Tuesday 25 th April 2023	08:00 – 13:00
Wednesday 26 th April 2023	08:00 – 13:00
Thursday 27 th April 2023	08:00 – 13:00

Conference Badges

All participants, accompanying persons and exhibitors must wear the identification badges. Entrance to meeting halls, exhibition area, catering stations and to all social events will not be permitted to any person without a badge.

Conference Programme - Mobile App

The detailed programme will be available in the conference App.

The conference programme is also available online:

www.conferences.au.dk/esm/programme

Welcome Reception:

Monday 24th April 17.45-18.45 at the Town Hall located across from the Concert Hall.

Address: Town Hall, Sønder Allé 2, 8000 Aarhus

Networking and drinks

Tuesday 25th 17.10-18.30 Networking and drinks for young and senior scientists

Address: Concert Hall Level 1

Conference Party:

Wednesday 26th April; start 19:00 – 23:00

Address: Værkmestergade 9, 8000 Aarhus, approx. 15 min walk from Concert Hall.

Speaker presentations

You will need to upload your presentation via your USB stick in the auditorium in the break before your presentation – there will be a person to assist you. Please allow for 4-5 min for discussion in your time slot.

You will need to be wired with microphones ca. 15 min before your presentation – which could be while the speaker before you is presenting. The microphones and the wiring will be done in a room next to your auditorium – the room will be marked “Microphones”.

Posters

Posters can be found on Level 1 Posters are mounted throughout the conference. Please check the poster plan in the programme to find the location of your poster(s).

Language

The official language of the conference is English.

Coffee and Lunch

Coffee is available at the Concert Hall. Catering during breaks is served in the exhibition area on Level 1.

Coffee and lunches are included in the conference fee.

Accommodation

Please come to the registration desk for any inquiries regarding conference hotel bookings.

Accessibility

If you need any assistance or support, please come to the Concert Hall reception located near the entrance.

Exhibition opening hours

Provisional Exhibition Opening Hours

Monday, 24 April: 10:00 – 17:15

Tuesday, 25 April: 8:00 – 17:00

Wednesday, 26 April: 8:00 – 18.00

Thursday, 27 April: 8:00 – 12.30

Exhibition Build-up and Break Down Hours

Build up: Monday, 24 April, 8:00 – 12:00

Take down: Thursday, 27 April, 12:30 – 17:00

First Aid

For any emergencies, please contact the Concert Hall reception for assistance. National emergency phone number is 112.

Liability and Insurance

The organizers cannot accept liability for personal accidents or loss of or damage to private property of participants. Participants are advised to take out their own personal travel and health insurance for their travel.

Lost and Found

The Concert Hall reception will collect all lost and found objects.

Parking

The Concert Hall parking area must be paid by App (EasyPark).

Smoking Policy

This is a non-smoking event. Smoking is prohibited in all public buildings and in all restaurants in Denmark.

Safety and Security

Even though the Concert Hall is not open to the public, it is advisable that you do not leave bags or suitcases unattended at any time, whether inside or outside the session halls.

Wi-Fi

Select the network "SmartAarhus" and follow the steps to login by entering your phone number.

A code will be sent to your phone via SMS. Enter this code and you are connected. If you can not receive SMS please contact the Conference Registration Help Desk

Cloakroom

There are coat racks on Level 0.

Toilets

Main toilets are located on Level 0.

SCHEDULE FOR POSTER PRESENTATIONS

Session 1, Monday April 24 15.30-16.30				
	THEME	POSTER	Chairmen	
Poster Area 1	Cerebral	1-1 to 1-10	Vladimir Matchkov	Ebbe Boedtkjer
Poster Area 2	Diabetes Endothelium	2-4 to 2-13	Anja Meissner	Chris Garland
Poster Area 3	Hypertension	3-1 to 3-10	Akos Koller	Brant Isakson
Poster Area 4	Methods Inflammation	4-1 to 4-10	Leif Østergaard	Jaap Van Buul

Session 2, Tuesday April 25 13.15-14.30				
	THEME	POSTER	Chairmen	
Poster Area 1	Cerebral ion transport	1-11 to 1-20	Erik Bakker	Ezter Farkas
Poster Area 2	Endothelium	2-14 to 2-23	Jo De Mey	Miranda Good
Poster Area 3	Hypertension Imaging	3-11 to 3-20	Ulf Simonsen	Dmitry Postnov

Session 3, Wednesday April 26 16.00-17.00				
	THEME	POSTER	Chairmen	
Poster Area 1	Ion transport diabetes	1-21 to 2-3	Ed van Bavel	Iain Greenwood
Poster Area 2	Endothelium Eye	2-24 to 2-34	Ana Stupin	Boy Houben
Poster Area 3	Imaging	3-21 to 3-30	Joanna Kalucka	Stefan Chlopicki
Poster Area 4	Exercise	4-11 to 4-24	Ylva Hellsten	Cor de Wit

EUROPEAN SOCIETY FOR **MICROCIRCULATION**

Aarhus,
24 - 27 April 2023



AARHUS
UNIVERSITY