

# EVBO/ESM Vascular Biology Summer School – Programme

(all times are CEST)

**Monday June 13<sup>th</sup>**

Main room

Welcome and overview of summer school 09:30-09:45

*Johanna Laakkonen/Elena Osto*

1. Endothelial-perivascular cell crosstalk 09:45-10:45

*Chair: Johanna Laakkonen*

09:45-10:15 Ingrid Fleming/Sebastian Kempf (Germany): **Metabolic crosstalk between endothelial cells and pericytes.**

10:15-10:45 Maarja Andaloussi Mäe/Eliza Vazquez (Sweden): **Features of the pericyte-deficient blood-brain barrier.**

2. Vascular heterogeneity 10:45-11:45

*Chair: Lars Mägdefessel*

10:45-11:15 Helle Jørgensen (United Kingdom): **Heterogeneity of vascular smooth muscle cells in health and disease.**

11:15-11:45 Tanya Petrova/Amelie Sabine (Switzerland): **Functional heterogeneity of lymphatics: collecting vessels and valves.**

Break 11:45-12:00

3. How to build a paradigm-shifting research plan? 12:00-13:00

*Chair: Lena Claesson-Welsh*

Panel: Kari Alitalo (Finland), Hellmut Augustin (Germany), Mauro Siragusa (Germany), Anna Randi (United Kingdom), Britta Trappmann (Germany)

Break 13:00-13:10

Breakout rooms

Networking lunch break 13:10-14:00

## Main room

### 4. Flash talks I 14:00-14:50 (Vascular-neural interactions)

*Chair: Henning Morawietz*

14:00-14:08 Lotte Vanherle (Sweden): **Restoring heart failure-induced long-term memory impairment by targeting the cystic fibrosis transmembrane regulator.**

14:08-14:16 Hannah Taylor (United Kingdom): **BACE1 and the risk of dementia with cardiovascular disease.**

14:16-14:24 Jil Protzmann (Sweden): **Longitudinal studies of cerebrovascular response following ischaemic stroke in the living mouse.**

14:24-14:32 Sofia Kakava (Switzerland): **Apolipoprotein E defines high-density lipoprotein trafficking in brain endothelial cells.**

14:32-14:40 Amanda Norrén (Sweden): **Cerebral Cavernous Malformations.**

14:40-14:48 Hongyu Li (China): **Neuronal NMDA receptors regulate brain vascular development through a VEGF pathway.**

## Break 14:50-15:00

### 5. Flash talks II 15:00-15:50 (Immune and lymphatic systems)

*Chair: Elena Osto*

15:00-15:08 Gizem Duru (The Netherlands): **Activating tumor endothelial cells to increase immune infiltration and cancer immunotherapy.**

15:08-15:16 Avigail Ehrlich (Switzerland): **Panx1 in lymphatic endothelium regulates tissue fluid homeostasis and absorption of dietary fats.**

15:16-15:24 Bianca E. Suur (Denmark): **PCSK6 is a key regulator of immune status in mice and its ablation increases atherosclerotic plaque burden.**

15:24-15:32 Eliane Sibling (Switzerland): **Response of Lymphatic Endothelial Cells in Lymph Nodes to Inflammation and Tumors.**

15:32-15:40 Xiaoming Li (Germany): **Soluble epoxide hydrolase is required in mediating inflammatory resolution.**

15:50-16:00 Votes from students via PollEv/Votes from Organizers via email

**Tuesday June 14<sup>th</sup>**

**Main room**

**6. Mechanotransduction 09:30-10:30**

*Chair: Henning Morawietz*

09:30-10:00 Paul C. Evans/Blanca Tardajos Allyon (United Kingdom): **Endothelial responses to shear stress in development and disease.**

10:00-10:30 Stefan Offermanns/Guozheng Liang (Germany): **Endothelial mechanosignaling – relevance for diapedesis and EndMT.**

**7. Emerging fields and technologies in vascular biology 10:30-11:30**

*Chair: Mauro Siragusa*

10:30-11:00 Ankit Sinha (Germany): **Mass spectrometry-based proteome profiles of the plaque subregions reveal the critical role of extracellular proteins in plaque stability.**

11:00-11:30 Axel Klaesson (Navinci Diagnostics AB, Sweden): **Introduction to Navinci proximity ligation assay technology for highly specific detection of proteins, protein interactions and protein modifications in tissue and cell samples.**

**Break 11:30-11:45**

**Breakout rooms**

**8. “Speed dating with a PI” 11:45-13:00**

*Chair: Elena Osto*

“Dates”:

**Sr PIs:** Jaap van Buul (The Netherlands), Ingrid Fleming (Germany), Lena Claesson-Welsh (Sweden), Henning Morawietz (Germany), Kari Alitalo (Finland), Ferdinand Le Noble (Germany), Mariona Graupera (Spain), Elena Osto (Switzerland), Anna Dimberg (Sweden), Elizabeth Jones (Belgium), Minna Kaikkonen-Määttä (Finland), Eszter Farkas (Hungary).

**Jr PIs:** Eloi Montanez (Spain), Mauro Siragusa (Germany), Anjali Kusumbe (United Kingdom), Guillermo Luxan (Germany), Joanna Kalucka (Denmark).

**Break 13:00-13:10**

## Breakout rooms

Networking lunch break 13:10-14:00

## Main room

### 9. Flash talks III 14:00-14:50 (Development and angiogenesis)

*Chair: Johanna Laakkonen*

14:00-14:08 Lukas Herdt (Germany): **Identification of novel angiogenic pathways independent of Vegf signaling.**

14:08-14:16 Margo Daems (Belgium): **The role of SMAD signalling in early arterial differentiation.**

14:16-14:24 Julian Malchow (Germany): **Paracrine Apelin signaling regulates endothelial tip cell behavior and invasive migration.**

14:24-14:32 Marco Spreafico (Italy): **Neuropilin 1 (NRP1) mainly acts as a mediator of chemorepulsive cues during zebrafish trunk vascularisation.**

14:32-14:40 Jean Eberlein (Germany): **Apelin signaling restricts the blood stem cell-forming hemogenic endothelium in the dorsal aorta.**

14:40-14:48 Eleni Mourkogianni (Greece): **Novel mechanisms of Pleiotrophin in endothelial cell functions.**

## Break 14:50-15:00

### 10. Flash talks IV 15:00-15:50 (Aging and disease states)

*Chair: Lars Mägdefessel*

15:00-15:08 Anita Tamiato (Germany): **RGS5 and cardiac pericytes during ageing.**

15:08-15:16 Diana Luna Buitrago (United Kingdom): **Investigating the role of microRNA-26b in vascular calcification.**

15:16-15:24 Lindsay Bischoff (United States): **Hyperactive GNAQ Mutation in Endothelial Cells Drive Aberrant Vascular Morphology and Signaling.**

15:24-15:32 Dieu-Huong Hoang (France): **Regulation of vascular cells in Duchenne Muscular Dystrophy.**

15:32-15:40 Xiaozhu Zhou (Germany): **Nuclear endothelial nitric oxide synthase interacts with RNA-binding proteins to modulate endothelial gene expression.**

15:50-16:00 Votes from students via PollEv/Votes from Organizers via email

## Wednesday June 15<sup>th</sup>

### Main room

#### 11. Vascular disease I 09:30-10:30

*Chair: Elena Osto*

09:30-10:00 Eszter Farkas (Hungary): **Autoregulatory failure in acute brain injury.**

10:00-10:30 Rosa Maria Bruno (France): **Micro- and Macrovascular crosstalk in vascular ageing.**

#### 12. Vascular disease II 10:30-11:30

*Chair: Eszter Farkas*

10:30-11:00 Manuel Mayr/Kaloyan Takov (United Kingdom): **Combining RNA and Protein Biomarkers to Inform Prognostication in COVID-19 Patients Admitted to Intensive Care.**

11:00 -11:30 Judith Sluimer/ Kim van Kuijk (The Netherlands): **Ins & outs about vascular fibroblasts.**

### Break 11:30-11:45

#### 13. "I've got my PhD!! ...what now??" 11:45-13:00

*Chair: Mauro Siragusa*

Panel: Mariona Graupera (Josep Carreras Leukaemia Research Institute, Spain), Nina Siragusa (Merck, Germany), Brunella Cristofaro (Sanofi, France), Johan Dixelius (Uppsala University Grant Office, Sweden), Jeremy Pearson (British Heart Foundation), Tomasz Guzik (Cardiovascular Research).

### Break 13:00-13:10

### Breakout rooms

Networking lunch break 13:10-14:00

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### 14. Sponsor talk by 10X GENOMICS 14:00-14:30

*Chair: Johanna Laakkonen*

Johanna Stergiadou (10x Genomics, Sweden): **Spatially map and quantify gene expression in the tissue context with Visium Spatial.**

### 15. Translational vascular research: from basic science to a clinical trial 14:30-15:30

*Chair: Lars Mägdefessel*

14:30-15:00 Nihay Laham-Karam (Finland): **The road to angiogenic gene therapy: From developing endothelial-specific vectors to preclinical testing in large animals.**

15:00-15:30 Uwe Raaz (Germany): **Biomechanics of aortic aneurysms: how to turn (basic) science into medicine?**

### 16. EVBO/ESM summer school awards 15:30-15:45

*Chair: Lena Claesson-Welsh/Henning Morawietz*

### 17. Concluding remarks 15:45-16:00

#### Organizers:

**EVBO:** Johanna Laakkonen, Lars Mägdefessel, Mauro Siragusa, Lena Claesson-Welsh

**ESM:** Elena Osto, Eszter Farkas and Henning Morawietz.

**Zoom:** Dean Kavanagh, Univ. Birmingham

#### Sponsors:

