

**1<sup>st</sup> Summer School**  
of the **European Society  
for Microcirculation (ESM)**  
and the **European Vascular  
Biology Organization (EVBO)**



## **1<sup>st</sup> ESM/EVBO Summer School for young scientists in Dresden**

### **Contact:**

Henning Morawietz, University Hospital Carl Gustav Carus Dresden, Division of Vascular Endothelium and Microcirculation, Department of Medicine III, Fetscherstr. 74, 01307 Dresden, Germany; Tel: +49 351 458 6625, Fax: +49 351 458 6354, E-mail: Henning.Morawietz@tu-dresden.de, <http://www.tu-dresden.de/medmiz/>

Richard Siow, King's College London, Vice-Dean (International), Faculty of Life Sciences & Medicine, King's College London, 150 Stamford Street, London SE1 9NH, UK, E-mail: richard.siow@kcl.ac.uk, <https://kclpure.kcl.ac.uk/portal/richard.siow.html>

### **Website:**

<https://www.uniklinikum-dresden.de/medmiz/ESM-EVBO-Summer-School>

Cardiovascular diseases are the major cause of death in Europe. The European Society for Microcirculation (ESM) and the European Vascular Biology Organization (EVBO) have the aim to support the experimental and clinical cardiovascular research in the fields of microcirculation and vascular biology. Important areas of research are the pathogenesis of arteriosclerosis as cause of heart attack and stroke, the development of new blood vessels and impaired blood flow in the microcirculation in vascular diseases and diabetes.

From July 1-5, 2018, leading experts and young cardiovascular scientists from all over Europe were meeting at the University Hospital of the TU Dresden. The Summer School was organized by Henning Morawietz from the Division of Vascular Endothelium and Microcirculation of the Department of Medicine III at the University Hospital and Medical Faculty Carl Gustav Carus of the TU Dresden in collaboration with Richard Siow from King's College London. The TU Dresden and the King's College London are strategic partners in the TransCampus. The 1<sup>st</sup> European ESM/EVBO Summer School was substantially supported by TU Dresden's Internationalisation Strategy.

The Vice-Rector for Research of the TU Dresden, Gerhard Rödel, was cordially welcoming the 30 MD and PhD students and the 20 invited speakers from 12 European countries in Dresden and presented the excellent research facilities and TU Dresden's Excellence and Internationalisation strategy. Richard Siow, Vice-Dean (International) of the Faculty of Life Sciences & Medicine, King's College London, and co-organiser of the Summer School and Stefan R. Bornstein, TransCampus Dean and Vice-Dean for Development and Internationalisation of the Medical Faculty Carl Gustav Carus of the TU Dresden, highlighted the unique and close collaboration between the TU Dresden and the King's College London in the joint TransCampus.

The major topic of this Summer School which was organized for the first time in Europe was the support of young scientists in the field of vascular research. Excellent international speakers from the United Kingdom, the Netherlands, Switzerland, Poland and Germany, e.g. with lectures from the current and recent presidents of both societies, Boy Houben from Maastricht and Jozef Dulak from Kraków, and the president of the British Microcirculation Society, Angela Shore from Exeter, presented the MD/PhD students basic knowledge and cutting-edge novel results from experimental and clinical research in the areas of vascular biology and microcirculation. Scientific topics were the development and differentiation of blood vessels (Alina Klems from Karlsruhe), the impact of blood flow on long non-coding

RNAs and epigenetic modifications (Rainier A. Boon from Amsterdam/Frankfurt), the interaction of vascular and inflammatory cells (Jaap van Buul from Amsterdam, Triantafyllos Chavakis from Dresden, Markus Sperandio from Munich) and the impact of blood flow on microRNAs and of aging processes on anti-oxidative signaling pathways (Richard Siow from London). A major focus of the Summer School was the regulation of the microcirculation in patients with diabetes and advanced age in clinical studies (Angela Shore from Exeter, Boy Houben from Maastricht, Henner Hanssen from Basel). Further important topics were the endothelial homeostasis (Graeme M. Birdsey from London), the regulation of oxidative stress and anti-oxidative protective mechanisms in the vascular wall (Katrin Schröder from Frankfurt, Jozef Dulak from Kraków) and models of systemic inflammation in vascular biology (Marta Cześnikiewicz-Guzik from Glasgow/Kraków). Novel results about the underlying mechanisms of the development of arteriosclerosis (Esther Lutgens from Amsterdam/Munich) and the impact of adipose tissue (Charalambos Antoniades from Oxford) and endothelial microparticles (Fiona Wilkinson from Manchester) on vascular function were presented. All lectures were very actively discussed afterwards, especially by the young scientists.

During the Summer School the MD/PhD students could actively take part in three method courses analysing vascular cells under flow conditions, contractility of blood vessels and the analysis of the vascular function in the microcirculation of patients. These method courses were organized together with renowned manufactures of devices for vascular research (Imedos, ibidi, DMT and I&L Biosystems) and the colleagues of the Division of Vascular Endothelium and Microcirculation of the Department of Medicine III of the TU Dresden. Furthermore, the participants could learn in guided tours about the research facilities of the DRESDEN-concept partners of the Max Planck Institute of Molecular Cell Biology and Genetics Dresden and the Center for Regenerative Dresden (CRTD).

The young scientists from all over Europe, some at the beginning of their thesis, some already with high-ranked own publications, discussed in two poster sessions very actively together with the international experts their projects and results. Main scientific subjects of the poster sessions were e.g. the molecular mechanisms of the regulation of vascular function by ion channels and mediators of blood pressure and the regeneration of blood vessels. Furthermore, mechanisms of the development of new blood vessels, of arteriosclerosis, and the impact of inflammation and coagulation processes, diabetes mellitus and advanced age on vascular structure and function were analysed. As a protective approach the influence of increased physical activity on vascular function in the microcirculation was studied.

From the first day, the participants shared the enthusiasm about their scientific work. The meeting of young scientists and experts from all over Europe was considered by the participants as very inspiring and enriching. Joint novel projects, collaborations and friendships were initiated and addresses were exchanged between the participants from all parts of Europe.

On the last day, the young scientists got information how to successfully write (Henning Morawietz from Dresden) and publish scientific research papers by the editors of renowned European journals (Cardiovascular Research: Tomasz Guzik from Glasgow/Kraków, Journal of Vascular Research: Ulrich Pohl from Munich). The studies presented during the Summer School will contribute to publications in a joint special issue of the scientific journal *Frontiers in Physiology*. Jeremy Pearson, King's College London and Associate Medical Director of the British Heart Foundation, gave the young scientists important advice how to get funding for their research.

Finally, the winners of travel awards of the British Microcirculation Society (Nele Warmke from Leeds), the German Society for Microcirculation and Vascular Biology (Anastasia Shvetsova from Moscow/Mannheim, Anna Strano from Frankfurt, Juliane Rieger from Berlin,

Katrin Kalies from Hannover and Kristin Kräker from Berlin) and the winners of the three poster awards (Claudia Al-Mardini from Amsterdam, Janina Wittig from Frankfurt and Sandro Satta from Manchester) of the Summer School were honored.

In summary, the 1<sup>st</sup> ESM/EVBO Summer School in Dresden was with an excellent scientific program, good organisation and nice summer weather very successful! The concept of the Summer School covering different aspects of successful scientific work was considered as very interesting by all participants. Beside the active scientific work the participants had also the opportunity to get to know the city of Dresden in the evening and the national park Saxon Switzerland in a joint excursion. The TU Dresden as active location of cardiovascular research and the close collaboration with the King's College London in the TransCampus was highlighted by the 1<sup>st</sup> ESM/EVBO Summer School all over Europe.

Many thanks to all participants and invited speakers for the excellent science, the colleagues from the Division of Vascular Endothelium and Microcirculation and the Medical Faculty and the University Hospital for the very good organization, the TU Dresden's internationalisation strategy for the very good support, the DRESDEN-concept partners for the very interesting guided tours and the companies for their very good help in the organisation of the method courses!

The complete scientific programm can be found at: <https://www.uniklinikum-dresden.de/medmiz/ESM-EVBO-Summer-School>.

Best wishes



Henning Morawietz.  
TU Dresden  
Chairman Strategy Committee  
European Society for Microcirculation



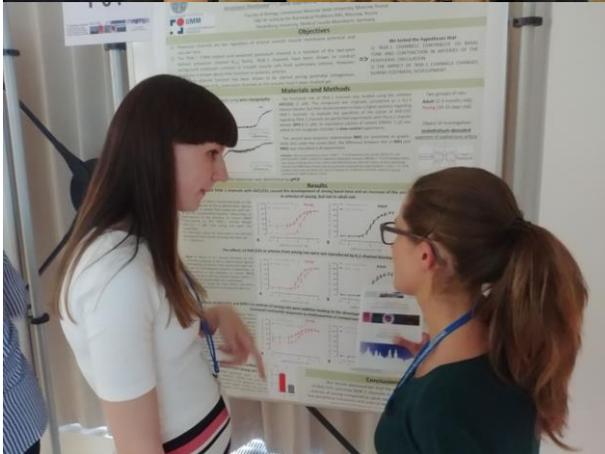
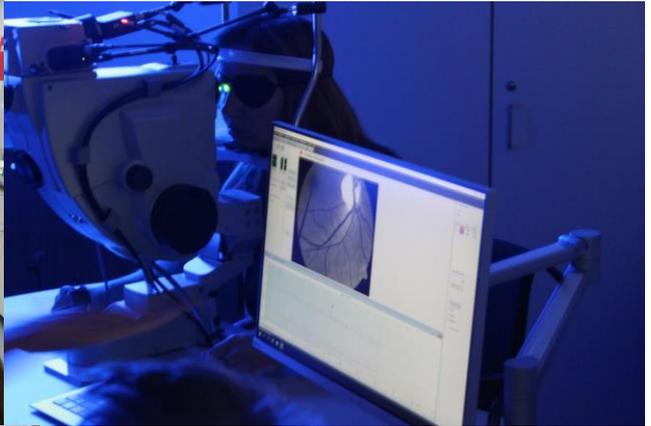
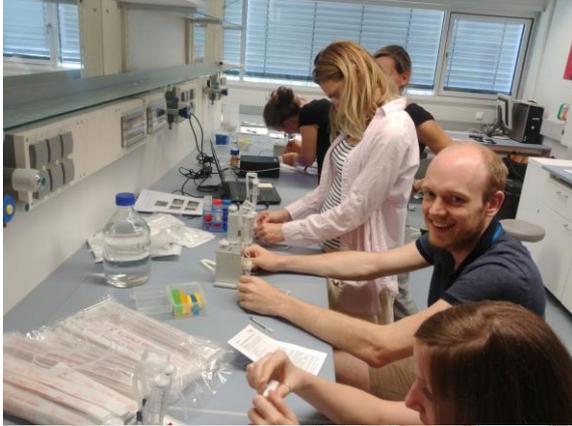
Richard Siow  
King's College London  
Chairman Strategy Committee  
European Society for Microcirculation

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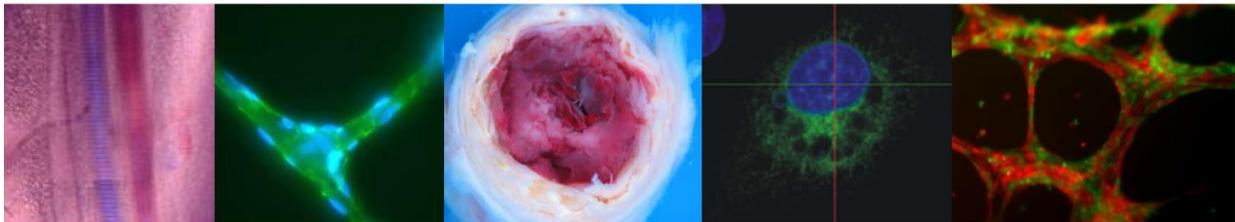
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**EUROPEAN SOCIETY FOR MICROCIRCULATION**  
Integrating  
Vascular Biology & Medicine



<http://www.esmicrocirculation.eu/>

**EVBO**  
EUROPEAN  
VASCULAR BIOLOGY  
ORGANISATION  
<https://evbo.org/>



<http://www.uniklinikum-dresden.de/medmiz/ESM-EVBO-Summer-School/>

## Dresden, Germany; 1-5 July 2018

### Organized by

Henning Morawietz (Dresden)  
Richard Siow (London)



<http://www.transcampus.eu/events>

### Invited Speakers

Charalambos Antoniades (Oxford)  
Graeme M. Birdsey (London)  
Reinier A. Boon (Frankfurt/Amsterdam)  
Jaap van Buul (Amsterdam)  
Triantafyllos Chavakis (Dresden)  
Marta Cześnikiewicz-Guzik (Glasgow/Krakow)  
Józef Dulak (Krakow)  
Tomasz Guzik (Glasgow/Krakow)  
Henner Hanssen (Basel)

Boy Houben (Maastricht)  
Esther Lutgens (Amsterdam)  
Ferdinand le Noble (Karlsruhe)  
Jeremy Pearson (London)  
Ulrich Pohl (Munich)  
Katrin Schröder (Frankfurt)  
Angela Shore (Exeter)  
Markus Sperandio (Munich)  
Fiona Wilkinson (Manchester)

