

# Understanding the role of the perivascular space in cerebral small vessel disease

## 3<sup>rd</sup> Leducq Transatlantic Network Meeting

The Royal Society of Edinburgh, 22-26 George Street. EH2 2PQ

Monday 9<sup>th</sup> April 2018

### Welcome reception and buffet meal

Royal College of Physicians  
9 Queen St. EH2 1JQ

This is a joint event with the [SVDs@target](#) consortium



18:30 – 18:45 Drinks reception, Cullen Suite

18:45 – 22:30 Informal buffet meal, New Library



The Royal College of Physicians is centrally located and short walk from the recommended hotels



Perivascular spaces  
in small vessel disease

Fondation Leducq Transatlantic Network of Excellence



## Main meeting day 1

Royal Society of Edinburgh  
22-26 George Street. EH2 2PQ

**Wifi network:** RSE Guest  
**Password:** RSE826826



08:30 - 08:50	Registration
08:50 - 09:00	Welcome – <i>Joanna Wardlaw</i>
09:00 - 09:35	Session 1: Research presentations <i>Chair: Olivia Hamilton</i> Vascular compartmentalization of functional hyperemia from the synapse to the pia. <i>Ravi Rungta (INSERM)</i>
09:35 - 10:10	The histopathology of the stroke prone spontaneously hypertensive rat. <i>Roshni Desai (University College London)</i>
10:10 - 10:45	Imaging and biofluid biomarkers of neurovascular injury in cognitive dysfunction. <i>Melanie Sweeney, Axel Montagne (University of Southern California)</i>
10:45 - 11:00	Break
11:00 - 11:35	Session 2: Research presentations <i>Chair: Lizzie Hill</i> Disruption of perivascular cerebrospinal fluid transport in arterial hypertension. <i>Humberto Mestre (University of Rochester)</i>
11:35 - 12:10	GlymphVIS: Visualizing Glymphatic Transport Pathways using Regularized Optimal Mass Transport. <i>Rena Elkin (Stony Brook University)</i> CSF transport in the Spontaneous Hypertensive Stroke Prone (SHRSP) rat model quantified by Contrast Enhanced MRI. <i>Simon Sanggaard (Yale University)</i>
12:10 - 12:25	Mechanism of intracerebral haemorrhages in Col4a1 mutant mice: second episode. <i>Anne Joutel (INSERM)</i>
12:25 - 12:40	Testing the blood-brain barrier hypothesis in CADASIL patients and mouse models. <i>Martin Dichgans (Ludwig Maximilians University Munich)</i>
12:40 - 13:40	Group Photograph + Lunch
13:40 - 14:15	Session 3: Research presentations <i>Chair: Rosalind Brown</i> An update on PVS segmentation in the context of SVD. <i>Joel Ramirez (Sunnybrook Research Institute)</i> Temporal evolution of PVS and other SVD imaging biomarkers in adults with Alzheimer's disease: seasonal effects and long-term change. <i>Andrew Lim (Sunnybrook Research Institute)</i> Cerebrovascular reactivity in white matter: towards harmonized analysis across sites. <i>Sarah Atwi (Sunnybrook Research Institute)</i> Periventricular focal hyperintensities – another substrate of white spots in the aging brain. <i>Sandra Black (Sunnybrook Research Institute)</i>
14:15 - 14:50	MRI based PVS morphology and cerebrovascular function in patients with SVD and sleep apnoea. <i>Rosalind Brown, Lizzie Hill, Una Clancy, Lucia Ballerini, Michael Stringer (University of Edinburgh)</i>

14:50 - 15:40	Working group discussions
15:40 - 16:30	Initial review presentation – <i>Joanna Wardlaw, Berislav Zlokovic</i>
16:30 - 17:30	Leducq leads discussion Non-leads/fellows discussion

18:15 - 19:00 **Tour of Surgeons' Hall Museum**  
Royal College of Surgeons  
Nicholson St. EH8 9DW

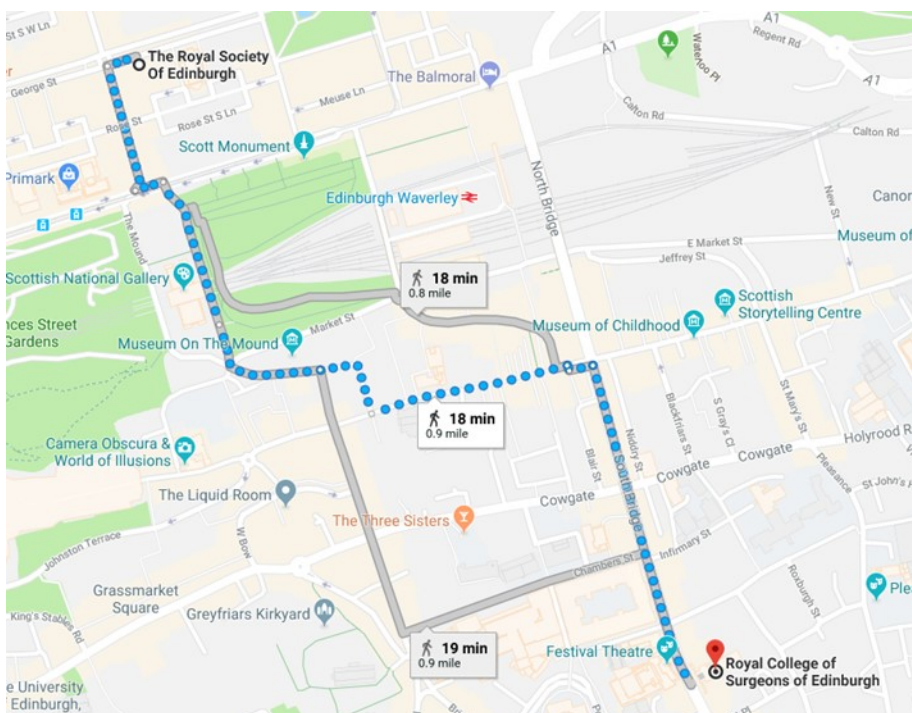


19:00 – 19:30 **Drinks Reception**  
Reception room, Surgeons' Hall



19:30 – 23:00 **Meeting Dinner**  
Fellows library, Surgeons' Hall

We will make our way to Surgeons' Hall together at the end of the meeting. If you prefer to make your own way, it is a short (& scenic!) walk from the meeting venue. Please enter via the Surgeons' Hall Museum entrance on Nicholson Street where a member of staff will be waiting to greet you.



## Main meeting day 2

Royal Society of Edinburgh  
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08:30 - 08:50	Registration
08:50 - 09:05	Welcome – Joanna Wardlaw
09:05 - 09:35	'A Novel Transgenic Rat Model of Robust Cerebral Microvascular Amyloid with Prominent Vasculopathy' Professor William Van Nostrand, University of Rhode Island. <i>Chair: Una Clancy</i>
09:35 - 10:45	Data Blitz presentations: <i>Chair: Rosalind Brown</i> <b>Rena Elkin</b> (Stony Brook University): Visualizing the Glymphatic System using Generalized, Unbalanced Optimal Mass Transport <b>Andrew Lim</b> (Sunnybrook Research Institute): Systemic hypoxia in sleep and markers of SVD in older adults with and without dementia <b>Sophie Quick</b> (University of Edinburgh): Endothelial cells and Oligodendrocytes in Small Vessel Disease <b>Hedok Lee</b> (University of Yale): T2* effect in contrast enhanced glymphatic MRI <b>Melanie Sweeney</b> (University of Southern California): Hypoxia-induced vascular responses in the adult mouse brain <b>Michael Stringer</b> (University of Edinburgh): Future directions: flow and beyond <b>Morgane Roche</b> (INSERM): The effects of temperature on neurovascular coupling and oxygenation <b>Gordon Blair</b> (University of Edinburgh): Vascular reactivity in small vessel disease <b>Joel Ramirez</b> (Sunnybrook Research Institute): Large MRI visible PVS in the striatum in Parkinson's disease patients
10:45 - 11:05	Break
11:05 - 12:05	Data Blitz presentations <i>Chair: Fergus Doubal</i> <b>Marija Sajic</b> (University College London): Mitochondrial function and dynamics in a high fat diet model of diabetes in mice <b>Sarah Atwi</b> (Sunnybrook Research Institute): Correlating BOLD based pulsatility maps with middle cerebral artery pulsatility index <b>Xiaodan Liu</b> (Yale University): A Voxel-based morphometry study of white matter changes in SHR rats <b>Thomas Gattringer</b> (University of Graz): Longitudinal evolution of recent small subcortical infarcts and potential predictors <b>Axel Montagne</b> (University of Southern California): Effect of 3K3A-activated protein C in a new mouse model of lacunar-like white matter stroke <b>Delyth Graham</b> (University of Glasgow): Impact of experimental stroke on cardiovascular function on the SHRSP rat: radiotelemetry analysis <b>Catherine Humphreys</b> (University of Edinburgh): Biochemical assessment of neuroradiologically documented white matter injury in small vessel disease <b>Sandra Black</b> (Sunnybrook Research Institute): Phase I results using Low Intensity Focused Ultrasound to open the Blood Brain Barrier in Alzheimer's Disease
12:05 - 12:15	Close of meeting Presentation of the data blitz award
12:15 - 13:00	Lunch