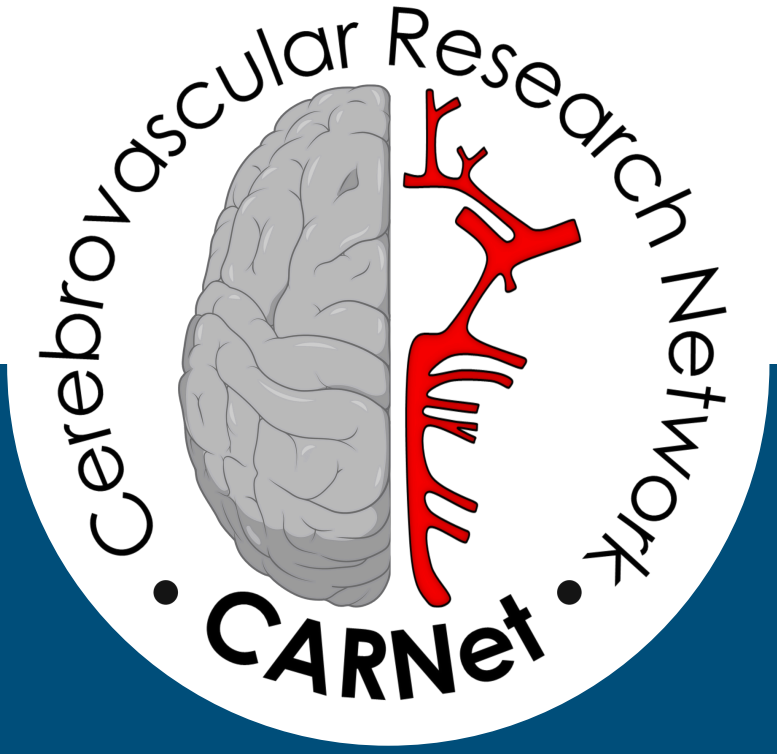


14th Annual Meeting of the Cerebrovascular Research Network (CARNet 2025)

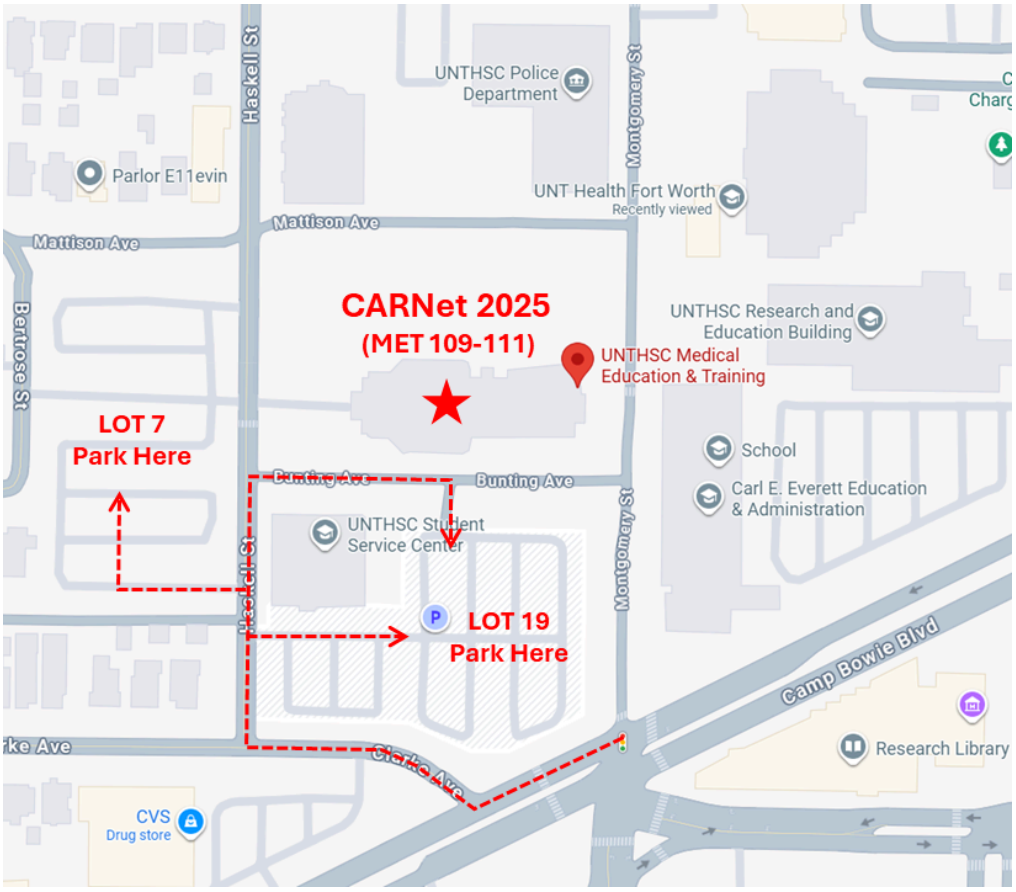
University of North Texas Health
Fort Worth, Texas, USA

November 12-14, 2025

PROGRAM

LOCATION & PARKING INFORMATION

University of North Texas Health
Fort Worth, Texas, USA



Street Address: Medical Education & Training (MET) Building, 1000 Montgomery St, Fort Worth, TX 76107.

Enter through the glass doors on Bunting Avenue. Room MET 109-111 is to the right of the doors.

Parking: Due to road closures, follow the red dashed line into parking lots 7 and 19 opposite the MET building.

UNT Health
FORT WORTH

KEYNOTE

CARNet 2025
Keynote Speaker

Frank M. Faraci, PhD

University of Iowa, USA

"Brain Endothelium: A Hub for Vascular Health and Disease"

Dr. Frank M. Faraci is the Zahn Professor of Cardiovascular Medicine in the Departments of Internal Medicine, Neuroscience, and Pharmacology in the Carver College of Medicine, University of Iowa. Dr. Faraci's research deals with vascular biology in the brain, particularly large and small vessel disease. Areas of focus include endothelial cell biology, regulation of cerebral blood flow, and the impact of risk factors for cerebrovascular disease and loss of brain health. Current emphasis includes effects of hypertension and stroke-risk genes. Dr. Faraci's approach incorporates the use of cell-specific and humanized mouse models to study elements of vascular disease. Dr. Faraci has considerable experience contributing to collaborative and multi-PI efforts. This includes Program Project Grants from the NIH (both as Project PI and overall PI) as well as two Networks of Excellence from the Leducq Foundation. He is currently the North American Coordinator for a Leducq Foundation International Network of Excellence on endothelial cells and cerebral small vessel disease. He is also a major contributing author to the review "Regulation of cerebral blood flow in humans: physiology and clinical implications of autoregulation" published in *Physiological Reviews* in 2021.

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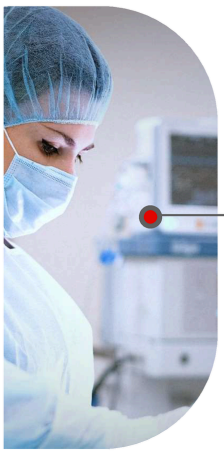

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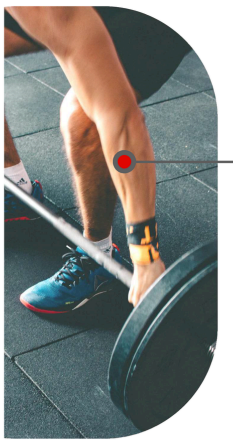

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DAY 1

Wednesday, November 12

8:00-9:00AM **REGISTRATION & BREAKFAST**
MET 109-111, UNT Health

9:00-9:15AM **WELCOME**
Caroline Rickards, PhD | Chair, CARNet

Christopher Ray, PhD | Senior Vice President and Provost, UNT Health

Dimitrios Karamichos, PhD | Vice President, Research and Graduate Studies, UNT Health

SESSION 1: PHYSIOLOGY #1

Chairs: Mikhail Kellawan & Viet Dinh

9:15-10:05AM ***Invited Speaker***
Igor Fernandes, PhD | Purdue University, USA
The Amazing Human Brain – With Great Power Comes the Need for Precise Regulation of Perfusion and Oxygen Supply

10:05-10:20AM ***Abstract Talks***
Jui-Lin (Mickey) Fan | University of Auckland, New Zealand
Nebulized sodium nitrite augments hypoxia-mediated cerebral blood flow response in a dose-dependent and sex-specific manner in healthy humans (#2025-021)

10:20-10:35AM **Sajjad Moradi** | University of Texas at Arlington, USA
Assessing the Relationship between Cerebral Vascular Response to a Hypercapnic Challenge and Cerebral Arterial Stiffness (#2025-048)

10:35-10:50AM **Joseph Vondrasek** | Florida State University, USA
The Relation Between Perceived Pain and Cerebrovascular Reactivity During the Cold Pressor Test Among Younger Adults (#2025-030)

10:50-11:20AM ***TEA/COFFEE BREAK***

DAY 1

SESSION 2: MEASUREMENT & MODELLING #1

Chairs: Vasilis Marmarelis & James Ball

11.20AM-12:10PM ***Invited Speaker***
Mehmet Kurt, PhD | University of Washington, USA
Mechanical Biomarkers of Cerebrovascular Health

12:10-12:25PM ***Abstract Talks***
Srinivas Kota | UT Southwestern Medical Center, USA
A Data-Driven Wavelet Coherence Approach to Assess Neurovascular Coupling in Neonatal Hypoxic-Ischemic Encephalopathy (#2025-018)

12:25-12:40PM **Margaret O'Connor** | UT Southwestern Medical Center, USA
Comparison of Autoregulation Index and Frequency Domain Methods of Assessment of Cerebral Autoregulation in Acute Traumatic Brain Injury (#2025-033)

12:40-12:55PM **Chryso Lambride** | University of Zurich, Switzerland
Simulating Cerebral Autoregulation at the Microvascular Scale: From Health to Post-Stroke Dysfunction (#2025-010)

12:55-3:00PM ***LUNCH & POSTER SESSION #1***

SESSION 3: CLINICAL #1

Chairs: Jatinder Minhas & Michael Eleruja

3:00-3:50PM ***Rising Star Speaker***
Alicen Whitaker-Hilbig, PhD | Medical College of Wisconsin, USA
Stroke Neurovascular Responses to Exercise: A Novel Rehabilitation Paradigm

3:50-4:05PM ***Abstract Talks***
Shanti Pinto | Spaulding Rehabilitation Hospital, USA
Non-invasive pressure reactivity index (nPRx) in persons with subacute complicated mild to severe traumatic brain injury (#2025-025)

4:05-4:20PM **Marina Trombin Marques** | Univ. of California – San Francisco, USA
Cerebral autoregulation in cardiac arrest: a pilot study on longitudinal, continuous mean flow index dynamics using Transcranial Doppler (#2025-043)

4:20-4:35PM **Priscilla Yu** | UT Southwestern Medical Center, USA
Comparison of Two Methods to Quantify Cerebral Autoregulation for Prediction of Cardiac Arrest in Children with Heart Disease after Cardiopulmonary Bypass (#2025-029)

5:30PM ***WELCOME RECEPTION*** *(details on next page)*

WELCOME

CARNet 2025
Welcome Reception

Please join us for the CARNet 2025 welcome reception

Maple Branch Craft Brewery
2628 Whitmore St,
Fort Worth, TX 76107

Time: 5.30PM

Complimentary drinks and food will be available

MAPLE BRANCH
CRAFT BREWERY

DAY 2

Thursday, November 13

8:00-9:00AM ***BREAKFAST & TEA/COFFEE***

SESSION 1: MEASUREMENT & MODELLING #2

Chairs: Mehmet Kurt & David Simpson

9:00-9:50AM ***Rising Star Speaker***
Jennifer Nicholls, PhD | University of Leicester, UK
Investigating Brain Physiology: from Ultrasound-Based Pulsation Imaging to Cerebral Autoregulation in Health and Disease

9:50-10:05AM ***Abstract Talks***
Suhaib Hashem | University of Southern California, USA
Pseudo-Random Binary Sequence Gas Challenges Reveal Impaired Chemoreflex and Cholinergic-Vascular Dynamics in Mild Cognitive Impairment (#2025-046)

10:05-10:20AM **James Ball** | University of Leicester, UK
Macrovasculature and microvasculature cerebral autoregulation derived from the transfer function analysis of simultaneously collected cerebral haemodynamic data (#2025-001)

10:20-10:35AM **Vlasta Bari** | University of Milan, Italy
Cerebrovascular Directional Coupling assessed via Causal Squared Coherence Stratifies the Risk for Silent Cerebrovascular Infarction after Surgical Aortic Valve Replacement (#2025-023)

10:35-11:05AM ***TEA/COFFEE BREAK***

SESSION 2: CLINICAL #2

Chairs: Kan Ding & Sandy Billinger

11:05-11:55AM ***Invited Speaker***
Alastair Webb, MBBS | Imperial College London, UK
Targeting cerebrovascular function in small vessel disease: from reactivity to autoregulation?

11:55AM-12:10PM ***Abstract Talks***
Nikita Kalidas | University of Leicester, UK
Directional sensitivity of dynamic cerebral autoregulation in Alzheimer's disease and Mild Cognitive Impairment (#2025-007)

12:10-12:25PM **Sharvinee Ragunatha Rao** | UT Southwestern Medical Center, USA
Cerebrovascular reactivity in hypertensive older adults: a resting-state BOLD fMRI study (#2025-011)

12:25-12:40PM **Jasmin Rizko** | University of Southern California, USA
LLR-derived physiological indices for cognitively active healthy and MCI/AD cohorts exhibit high diagnostic performance (#2025-015)

12:40-2:40PM ***LUNCH & POSTER SESSION #2***

DAY 2

SESSION 3: PHYSIOLOGY #2

Chairs: Ryan Hoiland & Erin Moir

2:40-3:30PM ***Invited Speaker***
Mikhail Kellawan, PhD | University of Oklahoma, USA
The Exercise Intensity-Cerebral Blood Flow Relationship: When Exercise Intensity goes high, Brain Blood Flow goes low.

3:30-3:45PM ***Abstract Talks***
Lauren Walker | University of Leicester, UK
Do cerebral autoregulatory parameters change across the life course? A longitudinal study of healthy ageing (#2025-035)

3:45-4:00PM **Timo Klein** | The University Medical Centre Rostock, Germany
Sex differences in cerebral pressure-flow relationship: comparisons between squat-to-stand maneuvres, isometric leg contraction and handgrip exercise (#2025-041)

4:00-4:15PM **Ziba Taherzadeh** | University of Texas at Arlington, USA
Cerebral Hemodynamics in Response to Aerobic Exercise in Young Black and White men (#2025-047)

4:15-4:30PM ***TEA/COFFEE BREAK***

SESSION 4: ANNUAL GENERAL MEETING (AGM)

Chair: Caroline Rickards

4:30-5:30PM *All attendees are invited to attend the AGM. Only CARNet members are eligible to vote on relevant items.*

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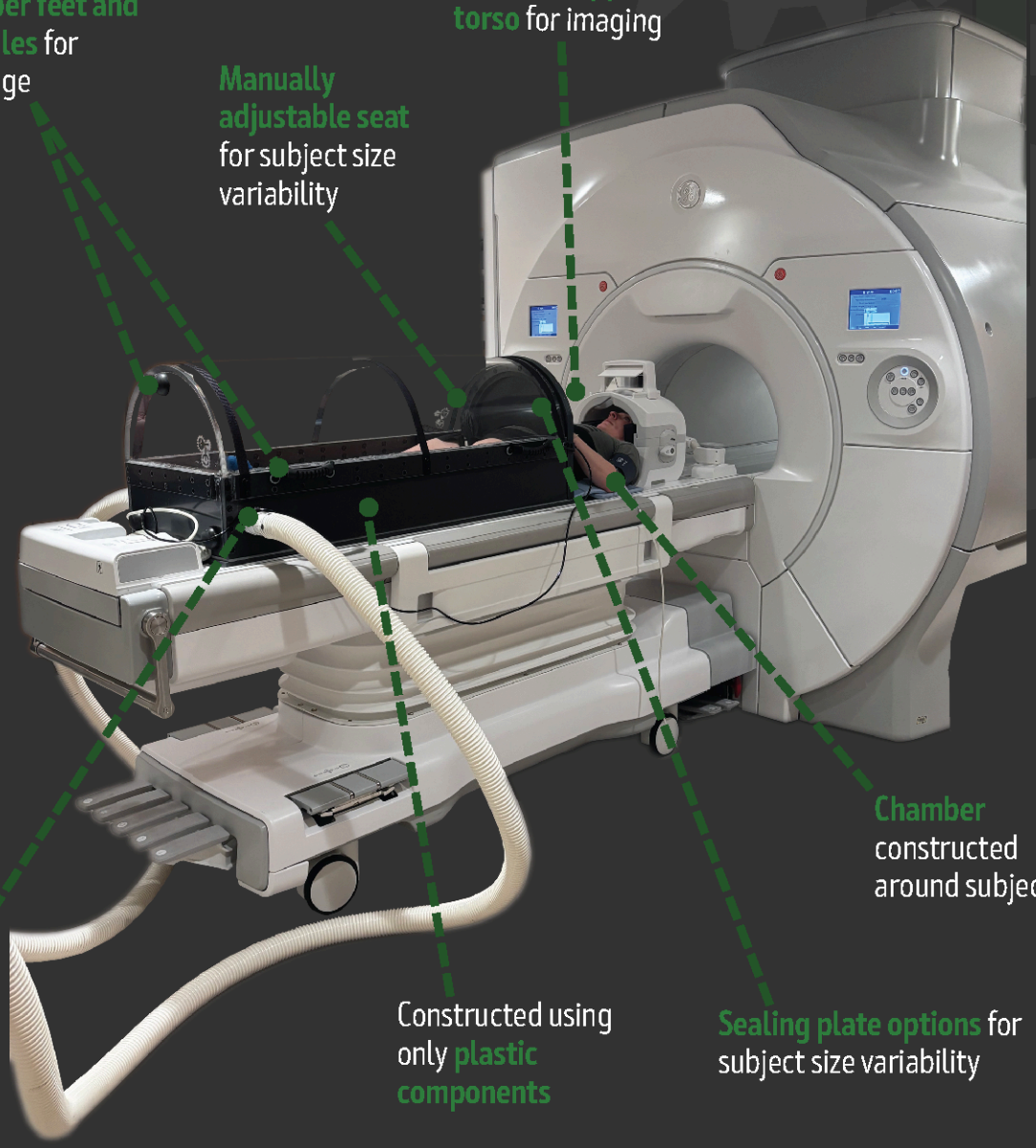

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DAY 3

Friday, November 14

8:00-9:00AM ***BREAKFAST & TEA/COFFEE***

SESSION 1: PHYSIOLOGY #3

Chairs: Igor Fernandes & Timo Klein

9:00-9:50AM ***Rising Star Speaker***
Erin Moir, PhD | University of Wisconsin - Madison, USA
Cerebrovascular Dysregulation and Biomarkers of Neurodegeneration in Humans

9:50-10:05AM ***Abstract Talks***
Viet Dinh | University of North Texas Health at Fort Worth, USA
To Presyncope or Not To Presyncope? Pulsatile Perfusion Therapy increases tolerance to simulated hemorrhage by protecting hemodynamic responses (#2025-032)

10:05-10:20AM **K. Austin Davis** | University of North Texas Health at Fort Worth, USA
Pulsatile Perfusion Therapy does not alter dynamic cerebral autoregulation or cardiac baroreflex sensitivity responses during simulated hemorrhage (#2025-034)

10:20-10:35AM **Jacob Matney** | University of Oklahoma, USA
The effects of CYP450 inhibition on cerebrovascular control during rest and mild hypovolemia (#2024-009)

10:35-11:05AM ***TEA/COFFEE BREAK***

SESSION 2: KEYNOTE SPEAKER

Chair: Caroline Rickards

Frank M. Faraci, PhD
University of Iowa, USA

Brain Endothelium: A Hub for Vascular Health and Disease

12:05-1:30PM ***LUNCH***

UNT Health FORT WORTH

DAY 3

SESSION 3: MEASUREMENT & MODELLING #3

Chairs: Vlasta Bari & Jennifer Nicholls

1:30-2:20PM ***Invited Speaker***
Vasilis Marmarelis, PhD | University of Southern California, USA *Novel methodology for quantifying dysregulation of cerebral perfusion dynamics and its application to the pathophysiological process of mild cognitive impairment and Alzheimer's disease*

2:20-2:35PM ***Abstract Talks***
Anirban Dutta | University of Birmingham, UK
Cerebral Hemodynamic Modulation in Subacute Stroke Repurposing the geko™ Device: AI-Driven Personalization of Common Peroneal NMES (#2025-003)

2:35-2:50PM **Tiago Pecanha** | Manchester Metropolitan University, UK
Introducing CardioBrain: Accessible Software for Transfer Function-Based Analysis of Dynamic Cerebral Autoregulation (#2025-002)

2:50-3:05PM **Binita KC** | University of Texas at Arlington, USA
Time-Resolved Wavelet Coherence Analysis to Quantify Cerebral Autoregulation: Introduction to an open-source Graphical-User Interface (#2025-028)

3:05-3:35PM ***TEA/COFFEE BREAK***

SESSION 4: CLINICAL #3

Chairs: Alastair Webb & Alicen Whitaker

3:35-4:25PM ***Invited Speaker***
Kan Ding, MD | UT Southwestern Medical Center, USA
Clinical Insights into Cerebral Perfusion After Traumatic Brain Injury

4:25-4:40PM ***Abstract Talks***
Soheila Norasteh | University of Texas at Arlington, USA
Dynamic Assessment of Neurovascular Coupling in Newborns with Hypoxic Ischemic Encephalopathy (#2025-017)

4:40-4:55PM **Margherita Tabet** | UT Southwestern Medical Center, USA
Continuous Neuromonitoring During Pediatric Extracorporeal Life Support (#2025-042)

4:55-5:10PM **Ariandokht Vakili** | University of Texas at Arlington, USA
Dynamic Assessment of Cerebral Autoregulation in Pediatric ECMO Using Wavelet Transform Coherence (#2025-027)

5:30PM ***Trainee Awards & Closing Remarks***

6:30PM ***CONFERENCE BANQUET*** *(details on next page)*

BANQUET

CARNet 2025
Conference Banquet

Please join us to celebrate the conclusion of CARNet 2025

Wild Salsa
300 Throckmorton Street
Fort Worth, TX 76102

Time: 6.30PM

Dinner and drinks are included in your registration fee

WILD SALSA

POSTERS

Wednesday, November 12

Poster Board	Presenter & Presentation Title
1	**Jennifer Nicholls** | University of Leicester, UK *Integrated Assessment of TCD-NIRS to Measure Cerebral Haemodynamics in Depression and Dementia (#2025-013)*
2	**Michele Salvagno** | Erasme Hospital, Belgium *Impact of Short Hyperoxemia Stimuli on Cerebral Autoregulation in Critically Ill Patients: A Prospective TCD-Based Interventional Study (#2025-026)*
3	**Pollieanna Sepulveda** | UT Southwestern Medical Center, USA Optimizing Early Cerebrovascular Surveillance in Mild HIE: Development of a Nurse-Driven NIRS Monitoring Protocol *(#LB2025-051)*
4	**Takuya Kurazumi** | Fukujukai Medical Association of Institute, Japan *Elevated carotid artery intima-media thickness may reduce cerebral perfusion and attenuate recovery in cerebral circulation during shoulder surgery: A case presentation (#2025-005)*
5	**Patricia Tasha Champagne** | UT Southwestern Medical Center, USA *Associations Between Transfer Function Analysis and Non-invasive Pressure Reactivity Index Measures in Traumatic Brain Injury (#2025-031)*
6	**Eamon Doyle** | Children's Hospital of Los Angeles, USA *Spatial Analysis of White Matter Hyperintensity In Pulmonary Pathology (#2025-045)*
7	**Beatrice Cairo** | University of Milan, Italy *Characterization of the Fast Interactions Between Mean Cerebral Blood Flow and Brain Activity in Healthy Subjects (#2025-022)*
8	**David Simpson** | University of Southampton, UK *Automated editing of blood pressure and velocity recordings (#2025-012)*
9	**Aranxa Perez Oviedo** | University of Southampton, UK *A preliminary investigation on the inclusion of regularization in time-domain methods for the assessment of autoregulation (#2025-004)*
10	**Jasmin Rizko** | University of Southern California, USA *Modeling Cerebrovascular Dynamics Before, During, and After taVNS Using the Laguerre Expansion Technique (#2025-016)*
11	**Cort Reinarz** | Texas A&M University, USA *Simulating Cerebral Autoregulation through Cardiovascular Modeling to Predict Individual Responses to Orthostatic Stressors (#2025-037)*
12	**Jacob Matney |** University of Oklahoma, USA *An open-source application for calculating critical closing pressure and resistance area product (#LB2025-052)*
13	**Michele Lacerenza** | PIONIRS, Italy *Advancing Cerebrovascular Research with NIRS: Applications and Insights from TD-NIRS Cerebral Oximetry (#2025-040)*

POSTERS

Thursday, November 13

Poster Board	Presenter & Presentation Title
1	**Jun Sugawara** | Nat. Instit. Adv. Industrial Science & Technology, Japan *Isometric Leg Contraction Mitigates Hypovolemia-Induced Cerebral Hypoperfusion via Stroke Volume Preservation (#2025-049)*
2	**Ryota Asahara** | Nat. Instit. Adv. Industrial Science & Technology, Japan *Age-related differences in global BOLD signal during repeated task-based fMRI (#2025-038)*
3	**Takashi Tarumi** | Nat. Instit. Adv. Industrial Science & Technology, Japan *Effects of Age and Acute Aerobic Exercise on Cerebrospinal Fluid Flow Dynamics in Healthy Adults (#2025-039)*
4	**Michael Eleruja** | University of North Texas at Fort Worth, USA *Pulsatile Perfusion Therapy (PPT) and Lower Body Negative Pressure with MRI: Development of a novel experimental protocol (#2025-044)*
5	**Leena Shoemaker** | Western University, Canada *Mirroring of Cerebral Microvascular and Macrovascular Pulsatility in Humans (#LB2025-053)*
6	**Sarah Matuja** | University of Leicester, UK *The influence of age and sex on the sit-to-stand manoeuvre: Results from a large sample study (#2025-036)*
7	**Yvonne Sensier** | University of Leicester, UK *Determining the feasibility of comparative autoregulation studies across the intra-cranial and superficial temporal artery (#2025-006)*
8	**Chris Mixon** | University of Oklahoma, USA *The effects of acute melatonin supplementation on cerebrovascular hemodynamics and reactivity in healthy, young adults (#2025-014)*
9	**Thomas Bissen** | Florida State University, USA *Changes in Cerebrovascular Conductance Index During Eucapnic Voluntary Hyperpnea: A Case Study (#2025-020)*
10	**Laura Ellwein Fix** | Virginia Commonwealth University, USA *A closed-loop system-level model of cerebrovascular response to CO2 (#LB2025-050)*
11	**Shotaro Saito** | UT Southwestern Medical Center, USA *Longitudinal Changes in Dynamic Cerebral Autoregulation After Traumatic Brain Injury (#LB2025-054)*
12	**Saesha Dravekar** | UT Southwestern Medical Center, USA *The Impact of Mid-Waist Circumference on Cerebral Oxygen Extraction in Olders Adults (#2025-019)*
13	**Olaf Paulson** | University of Copenhagen, Denmark *The renin-angiotensin system – the history from a general endocrine system to a specific brain system with specific function on blood flow regulation (#2025-024)*

Cerebrovascular Research Network • CARNet •

Thank you for attending CARNet 2025!

We look forward to seeing you again in Liverpool, England for CARNet 2026!

Join CARNet to stay up to date with all of our news and events:

www.car-net.org/join-us