



SIGN 2022

Society for Image-Guided
Neurointerventions

Warwickshire, UK

AGENDA

DAY 1, MONDAY, AUGUST 22, 2022

7:30 – 8:00 **REGISTRATION**

8:00 - 8:45 **SESSION 1: MASS SPECTROMETRY FOR NEUROINTERVENTIONS**

SESSION SPONSORED BY THE
UNIVERSITY OF MARYLAND
GREENEBAUM COMPREHENSIVE
CANCER CENTER



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COMPREHENSIVE CANCER CENTER

Chairs: Kristine Glunde, **Johns Hopkins University, Baltimore, USA**
David Gulisashvili, **University of Maryland, Baltimore, USA**

8:00 – 8:15 Kristine Glunde, **Johns Hopkins University, Baltimore, USA**
Biomedical MALDI Imaging Applications: Tissue Mapping of Drug Metabolism and Biomarker Discovery

8:15 – 8:30 Peter O'Connor, **University of Warwick, Coventry, UK**
2-dimensional mass spectrometry, a new tool for proteomics

8:30 – 8:45 Nina Ogrinc, **University of Lille, France**
Robot-Assisted for SpiderMass in vivo real-time topography mass spectrometry imaging

8:45 – 9:00 **COFFEE BREAK AND DISCUSSION**





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9:00 – 9:45 **SESSION 2: STEM CELL AND EXOSOME-BASED THERAPEUTICS**

Chairs: Syed Shadab Raza, **ERA University, Lucknow, India**
Anna Andrzejewska, **MMRC, PAS, Warsaw, Poland**

9:00 – 9:15 Matteo Spinelli, **Università Cattolica del Sacro Cuore, Rome, Italy**
Neural stem cell-derived extracellular vesicles: a new potential therapeutic approach to counteract cognitive decline

9:15 – 9:30 Paulo Rosado de Castro, **Federal University of Rio de Janeiro, Brazil**
Stem Cell Imaging

9:30 – 9:45 Syed Shadab Raza, **ERA University, Lucknow, India**
Overcoming the hurdles of stem cell homing and survival in a stressful environment: Implications for neurotransplantations

9:45 – 10:00 **COFFEE BREAK AND DISCUSSION**



10:00 – 10:45 **SESSION 3: BIOMATERIALS**

Chairs: Ruman Rahman, **University of Nottingham, UK**
Luiza Stanaszek, **MMRC, PAS, Warsaw, Poland**

10:00 – 10:15 Kendell Pawelec, **Michigan State University, Lansing, USA**
Using nanoparticle contrast agents for long-term monitoring of neural implants

10:15 – 10:30 Ruman Rahman, **University of Nottingham, UK**
Polymer-based neurosurgically applied interstitial drug delivery for malignant glioma

10:30 – 10:45 Neil Thomas, **University of Nottingham, UK**
Protein Nanocage-Based Theranostics and Drug Delivery

10:45 – 11:00 **COFFEE BREAK AND DISCUSSION**





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11:00 – 12:00 **SESSION 4: POSITRON EMISSION TOMOGRAPHY**

Chairs: Jesus Ruiz-Cabello, **CIC biomaGUNE, San Sebastian, Spain**
Rana Abrishamkar, **University of Maryland, Baltimore, USA**

11:00 – 11:15 Anna Jablonska, **University of Maryland, Baltimore, USA**
Radiolabeling of biological drugs

11:15 – 11:30 Wojciech Lesniak, **Johns Hopkins University, Baltimore, USA**
Radiosynthesis PET tracers and their application in imaging of neurodegenerative disorders

11:30 – 11:45 Jesus Ruiz-Cabello, **CIC BiomaGUNE, San Sebastian, Spain**
Nanotechnology for drug delivery to the brain

11:45 – 12:00 Erik Shapiro, **Michigan State University, Lansing, USA**
Simultaneous PET/MRI with orthogonal and parallel PET/MRI contrast agents

12:00 – 13:00 **LUNCH AND DISCUSSION**



12:50 – 13:00 Sponsored Luncheon Seminar: Jannis Fischer – **Co-Founder and CEO of PositriGO**
Novel brain PET device and its application

13:00 – 13:45 **SESSION 5: STROKE**

Chairs: Johannes Boltze, **University of Warwick, Coventry, UK**
Guanda Qiao, **University of Maryland, Baltimore, USA**

13:00 – 13:15 – Johannes Boltze, **University of Warwick, Coventry, UK**
Interindividual differences in infarct kinetics and acute penumbra protection

13:15 – 13:30 – Berta Puig Martorell, **University of Hamburg, Germany**
Extracellular vesicles in ischemic stroke

13:30 – 13:45 – Francisco Pan-Montojo, **Ludwig Maximilian University, Munich, Germany**
Treating brain ischemia mimicking worm survival strategies



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14:00 – 14:15 **OPENING CEREMONY**

Johannes Boltze, **University of Warwick, UK**

Piotr Walczak, **University of Maryland, Baltimore, USA**

14:15 – 14:45 **KEYNOTE LECTURE**

Abbas Alavi, **University of Pennsylvania, Philadelphia, USA**

Unique and unparalleled impact of modern imaging techniques on research and day to day practice of medicine

14:45 – 15:00 **COFFEE BREAK AND DISCUSSION**



15:00 – 16:45 **PANEL SESSION 1: FRONTIERS OF NEUROSURGERY AND IMAGE GUIDANCE**

Chairs: Raag Airan, **University of Stanford, USA**

Mirosław Janowski, **University of Maryland, Baltimore**

15:00 – 15:20 Raphael Guzman, **University of Basel, Switzerland**

Intraoperative imaging in Neurosurgery

15:20 – 15:40 Michael Lim, **Stanford University, USA**

Immunotherapy for Brain Tumors

15:40 – 16:00 Graeme Woodworth, **University of Maryland, Baltimore**

MRI-guided Focused Ultrasound and the coming era of Neurosonics in Neurosurgery

16:00 – 16:45 **Panel discussion**

16:45 – 17:00 **COFFEE BREAK**





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RAPID FIRE SESSION FOR BEST ABSTRACTS:

17:00 – 17:35 – Abstract presentations

Chairs: Piotr Walczak, **University of Maryland, Baltimore**
Erik Shapiro, **Michigan State University, Lansing, USA**

18:30 – 23:00 **MEDIEVAL BANQUET AT THE WARWICK CASTLE**



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DAY 2, TUESDAY, AUGUST 23, 2022

8:00 – 8:45 **SESSION 6: LARGE ANIMALS**

Chairs: Zdzislaw Gajewski, **Warsaw University of Life Sciences, Poland**
Lukasz Kalkowski, **University of Maryland, Baltimore**

8:00 – 8:15 Teresa Gasull, **Germans Trias i Pujol Research Institute, Barcelona, Spain**
Neurointerventionism to overcome old barriers to model stroke in swine

8:15 – 8:30 Franklin West, **University of Georgia, USA**
Magnetic Resonance Imaging to Evaluate Therapeutics in Porcine Stroke and Traumatic Brain Injury Models

8:30 – 8:45 Maria Sady, **Warsaw University of Life Sciences, Poland**
PET/MR integrated with AngioSuite and operating room as an ultimate solution for neurointerventions

8:45 – 9:00 **COFFEE BREAK AND DISCUSSION**



9:00 – 9:45 **SESSION 7: CHILDREN BRAIN TUMOR DRUG DELIVERY CONSORTIUM**

Chairs: Tao Lowe, **University of Maryland, Baltimore**
Pavlos Anastasidis, **University of Maryland, Baltimore**

9:00 – 9:15 Pete Harvey, **University of Nottingham, UK**
MRI contrast agent approaches for studying drug delivery to the brain

9:15 – 9:30 James Choi, **Imperial College London, UK**
Drug delivery across the blood-brain barrier using short ultrasound pulses

9:30 – 9:45 Tao Lowe, **University of Maryland, Baltimore, USA**
Polysaccharide-based Nanoparticles for Sustained Drug Delivery Across the Blood Brain Barrie



9:45 – 10:00 **COFFEE BREAK AND DISCUSSION**



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10:00 – 10:45 **SESSION 8: FOCUSED
ULTRASOUND**

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Chairs: Dheeraj Gandhi, **University of Maryland, Baltimore**
Ali Zamat, **Georgia Tech and Emory School of Medicine, Atlanta, USA**

- 10:00 – 10:15 Ying Meng, **Sunnybrook Research Institute, Toronto, Canada**
Image-guided brain delivery of trastuzumab using MR-guided focused ultrasound
- 10:15 – 10:30 Dheeraj Gandhi, **University of Maryland, Baltimore, USA**
MR guided FUS: Next frontier in image guided (non-surgical) neurosurgery
- 10:30 – 10:45 Gabe Kwong, **Georgia Tech and Emory School of Medicine, Atlanta, USA**
Thermogenetic Control of CAR T Cells to Potentiate Therapy Against Brain Tumors
- 10:45 – 11:00 Raag Airan, **University of Stanford, USA**
Focused Ultrasound Strategies for Targeted Drug Delivery to the Central Nervous System

11:00 – 11:15 **COFFEE BREAK AND DISCUSSION**



11:15 – 12:15 **SESSION 9: ENDOVASCULAR NEUROINTERVENTIONS**

Chairs: Steve Hetts, **University of California at San Francisco, USA**
Blazej Nowak, **John Paul II Western Hospital, Grodzisk Mazowiecki, Poland**

- 11:15 – 11:30 Steve Hetts, Kazim Narsinh, **University of California at San Francisco, USA**
Multimodality Imaging in Endovascular Stroke (and Tumor) Treatment
- 11:30 – 11:45 Imad Derraz, **University of Montpellier, France**
Multimodal Approach for ExtraAxial Tumor Treatment: A First Experience of Transcranial Embolization and Transcranial Cryotherapy



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11:45 – 12:00 Michal Zawadzki, **Central Clinical Hospital of Ministry of Interior, Warsaw, Poland**
Real-time MRI-guided neurointerventions: from animals to patient

12:00 – 12:15 Dileep Yavagal, **University of Miami, USA**
Progress in Translation of Intra-arterial Mesenchymal Stem Cells for Acute Stroke Recovery: Studies in the Canine Endovascular Stroke Model.

12:15 – 13:15 **LUNCH AND DISCUSSION**



13:15 – 13:30 **SPECIAL SEMINAR**
Syed Shadab Raza, **ERA University, Lucknow, India**
Presentation of Lucknow as a possible location for the SIGN 2023 conference

13:30 – 14:15 **SESSION 10: THERAPEUTIC SOLUTIONS FOR OTHER BRAIN DISEASES**

Chairs: Webster Kadzatsa, **University of Zimbabwe, Harare**
Mikolaj Zarlak, **Medical University of Poznan, Poland**

13:30 – 13:45 Webster Kadzatsa, **University of Zimbabwe, Harare**
Bench to bedside and backwards (BBB) what are we dropping on the way?

13:45 – 14:00 Peter Ludewig, **University of Hamburg, Germany**
Future Technologies for Point-of-Care Stroke Imaging

14:00 – 14:15 Gregory Bix, **Tulane University, New Orleans, USA**
It's all in your head? Acute and chronic neuropathology with SARS-CoV-2 infection

14:15 – 14:30 **COFFEE BREAK AND DISCUSSION**



14:30 – 15:00 **KEYNOTE LECTURE**

Matt Brookes, **University of Nottingham, UK**

Next generation brain imaging: mapping electrophysiological function using quantum technology



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15:00 – 15:15 **COFFEE BREAK AND DISCUSSION**



15:15 – 16:15 **PANEL SESSION 2: ARTIFICIAL INTELLIGENCE**

Chairs: Miroslaw Janowski, **University of Maryland, Baltimore, USA**

Abdallah Salemdawod, **University of Maryland, Baltimore, USA**

15:15 – 15:35 Ciprian Ionita – **University of Buffalo, USA**

New AI applications for management and endovascular treatment of stroke patients

15:35 – 15:55 Marcin Możejko – **University of Warsaw, Poland**

Deep Learning for Healthcare: Opportunities, Challenges, and Solutions

15:55 – 16:15 David Dreizin – **University of Maryland, Baltimore, USA**

Toward Explainable Artificial Intelligence for Trauma Computer Tomography

16:15 – 16:45 Panel Discussion

16:45 – 17:00 **CLOSING AND AWARD CEREMONY:**

Johannes Boltze, **University of Warwick, UK**

Miroslaw Janowski, **University of Maryland, Baltimore, USA**

THANK YOU



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The 2022 Conference Organizing Committee

Mirosław Janowski, MD, PhD
University of Maryland Baltimore, USA

Piotr Walczak, MD, PhD
University of Maryland Baltimore, USA

Michał Zawadzki, MD, PhD
CCHMI, Warsaw, Poland

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