



SIGN 2022

Society for Image-Guided
Neurointerventions

Warwickshire, UK

AGENDA

DAY 1, MONDAY, AUGUST 22, 2022

7:30 – 8:00 **REGISTRATION**

SESSION 1: MASS SPECTROMETRY FOR NEUROSURGERY


**SESSION SPONSORED BY UNIVERSITY OF MARYLAND GREENEBAUM COMPREHENSIVE
CANCER CENTER**



UNIVERSITY of MARYLAND

MARLENE AND STEWART GREENEBAUM
COMPREHENSIVE CANCER CENTER

Chairs: TBD

- 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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SESSION 2: STEM CELL AND EXOSOME-BASED THERAPEUTICS

Chairs: TBD

- 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** 

SESSION 3: BIOSCAFFOLDS

Chairs: TBD

- 10:00 – 10:15 Miguel Oliveira, **University of Minho, Guimaraes, Portugal**
Lighting the way to improved biomaterials for cells delivery and tissue engineering
- 10:15 – 10:30 Ruman Rahman, **University of Nottingham, UK**
Polymer-based neurosurgically applied interstitial drug delivery for malignant glioma
- 10:30 – 10:45 Kendell Pawelec, **Michigan State University, Lansing, USA**
Using nanoparticle contrast agents for long-term monitoring of neural implants
- 10:45 – 11:00 **Coffee Break and Discussion** 



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SESSION 4: POSITRON EMISSION TOMOGRAPHY

Chairs: Paulo Rosado de Castro, **Federal University of Rio de Janeiro, Brazil**

- 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 and PET imaging
- 11:30 – 11:45 Jesus Ruiz-Cabello, **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**



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

SESSION 5: STROKE

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

- 13:00 – 13:15 – Sean Savitz, **University of Texas, Houston, USA**
Imaging Brain Recovery and Degeneration After Stroke
- 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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OPENING CEREMONY:

14:00 – 14:15 **Johannes Boltze, University of Warwick, UK**

Piotr Walczak, University of Maryland, Baltimore, USA

KEYNOTE LECTURE:

14:15 – 14:45 **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**



PANEL SESSION 1: FRONTIERS OF NEUROSURGERY AND IMAGE GUIDANCE

Chairs leading the panel: TBD

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 and discussion**





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RAPID FIRE SESSION FOR BEST ABSTRACTS:

17:00 – 18:00 – Abstract presentations

Chairs: TBD

19:00 – 23:00 **MEDIEVAL DINNER AT THE WARWICK CASTLE**



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DAY 2, TUESDAY, AUGUST 23, 2022

SESSION 6: LARGE ANIMALS

Chairs: Zdzislaw Gajewski, **Warsaw University of Life Sciences, Poland**

- 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** 

SESSION 7: Children Brain Tumor Drug Delivery Consortium

Chairs: TBD

- 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 Neil Thomas, **University of Nottingham, UK**
Protein Nanocage-Based Theranostics and Drug Delivery
- 9:30 – 9:45 James Choi, **Imperial College London, UK**
Drug delivery across the blood-brain barrier using short ultrasound pulses
- 9:45 – 10:00 **Coffee Break and Discussion** 



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SESSION 8: FOCUSED ULTRASOUND

SESSION SPONSORED BY *FOCUSED ULTRASOUND FOUNDATION*



Chairs: TBD

10:00 – 10:15 TBD

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 **Coffee Break and Discussion**



SESSION 9: ENDOVASCULAR NEUROSURGERIES

Chairs: TBD

11:00 – 11:15 Steve Hetts, Kazim Narsinh, **University of California at San Francisco, USA**

Multimodality Imaging in Endovascular Stroke (and Tumor) Treatment

11:15 – 11:30 Vincent Costalat, **University of Montpellier, France**

First experience of skull base tumor cryotherapy CT guided coupled with transcranial onyx injection Angio Guided

11:30 – 11:45 Michal Zawadzki, **Central Clinical Hospital of Ministry of Interior, Warsaw, Poland**

Real-time MRI-guided neurointerventions: from animals to patient



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11:45 – 12:00 Dileep Yavagal, **University of Miami, USA**

First in Man Intra-arterial Allogeneic MSCs in a locked-in Syndrome patient post Thrombectomy in the Acute Phase: short term and long-term results

12:00 – 13:00 **LUNCH**



12:30 – 13:00 **Luncheon Seminar:** Linda Chang – **University of Maryland, Baltimore, USA**

NIH from the perspective Council of the Council

SESSION 10: THERAPEUTIC SOLUTIONS FOR OTHER BRAIN DISEASES

Chairs: TBD

13:00 – 13:15 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

KEYNOTE LECTURE:

14:15 – 14:45 Matt Brookes, **University of Nottingham, UK**

Next generation brain imaging: mapping electrophysiological function using quantum technology

14:45 – 15:00 **Coffee Break and Discussion**



PANEL: ARTIFICIAL INTELLIGENCE

Chairs: TBD



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- 15:00 – 15:20 Ciprian Ionita – **University of Buffalo, USA**
New AI applications for management and endovascular treatment of stroke patients
- 15:20 – 15:40 Sanjay Purushotham – **University of Maryland, Baltimore County, USA**
Deep Learning for Healthcare: Opportunities, Challenges, and Solutions
- 15:40 – 16:00 David Dreizin – **University of Maryland, Baltimore, USA**
Toward Explainable Artificial Intelligence for Trauma Computer Tomography
- 16:00 – 16:30 **Panel Discussion**

CLOSING AND AWARD CEREMONY:

- 16:30 – 17:00 **Johannes Boltze, University of Warwick, UK**
Mirosław Janowski, University of Maryland, Baltimore, USA

THANK YOU