

### 12<sup>TH</sup> NEURO-ONCOLOGY BRAIN TUMOR SYMPOSIUM

A CME/CNE-accredited Symposium



#### **AGENDA**

7:00 am IN-PERSON: Check In, Continental Breakfast, Visit Exhibits and Experts

7:15 am VIRTUAL: Log in to Virtual Conference

7:30 am Educational Meeting Begins – Welcome and Introduction

Nduka M. Amankulor, MD | Activity Director | Neurosurgery

<u>Steven Brem, MD</u> | Activity Director | Neurosurgery

Robert H. Vonderheide, MD, DPhil | Abramson Cancer Center at the University

of Pennsylvania

<u>Daniel Yoshor, MD</u> | Neurosurgery

#### SCIENTIFIC SESSION I: NEW CONCEPTS AND INNOVATIVE TECHNOLOGIES

**MODERATOR:** Steven Brem, MD | Activity Director | Neurosurgery

7:40 am The Year in Review – Are We at a Turning Point in the War Against Brain

Cancer?

Nduka M. Amankulor, MD | Activity Director | Neurosurgery

Steven Brem, MD | Activity Director | Neurosurgery

8:00 am KEYNOTE ADDRESS: Laser Interstitial Thermal Therapy (LITT) for

**Brain Tumors Preclinical Findings and Clinical Applications** 

Ganesh Rao, MD | Neurosurgery | Baylor College of Medicine

8:30 am Integrated Diagnostics in Gliomas: The Role of Molecular Profiling and AI/ML

MacLean Nasrallah, MD, PhD | Pathology & Laboratory Medicine

8:45 am Next Generation Sequencing (NGS) in Glioblastoma: Clinically relevant genomics

Jennifer J.D. Morrissette, PhD | Pathology & Laboratory Medicine

9:00 am RANO 2.0 and Advances in Neuroimaging:

Impact on clinical trials and clinical practice

Suyash Mohan, MD, PDCC | Activity Co-Director | Radiology

9:20 am Radiomics and Imaging Biomarkers in Neuro-Oncology

Ali Nabavizadeh, MD | Radiology



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9:35 am Q & A Panel Discussion

**MODERATOR:** <u>Steven Brem, MD</u> | Activity Director | Neurosurgery

PANEL:

<u>Suyash Mohan, MD, PDCC</u> | Activity Co-Director | Radiology <u>Jennifer J.D. Morrissette, PhD</u> | Pathology & Laboratory Medicine

Ali Nabavizadeh, MD | Radiology

<u>MacLean Nasrallah, MD, PhD</u> | Pathology & Laboratory Medicine <u>Ganesh Rao, MD</u> | Neurosurgery | Baylor College of Medicine

9:50 am Stories of Patient Survivors: Navigating the Health Care System, Finding

Information, Clinical Trials, Innovation, and Hope

Kaileen M. Bevenour, PA-C | Neuro-Oncology

Elizabeth Heisler, PA-C | Neurosurgery
Meghan O'Neill, CRNP | Medical Oncology

10:20 am Special Town Hall Meeting with Drs. Steven Brem and Nduka Amankulor for

**Patients, Caregivers, and Family Members** 

Nduka M. Amankulor, MD | Activity Director | Neurosurgery

Steven Brem, MD | Activity Director | Neurosurgery

10:35 am Break

**SCIENTIFIC SESSION II: NEURO-ONCOLOGY 2.0** 

MODERATOR: Nduka M. Amankulor, MD Activity Director | Neurosurgery

10:50 am CAR T Cell Immuno-Oncology Program: From First in Human to Current and

**Future Studies- The Clinical Trial Pipeline** 

Zev Binder, MD, PhD | Neurosurgery

Stephen J. Bagley, MD, MSCE | Activity-Co-Director | Hematology Oncology

<u>Donald M. O'Rourke, MD</u> | Activity Co-Director | Neurosurgery

11:20 am Glioblastoma: Six Emerging Technologies in Search of a Cure

Steven Brem, MD | Activity Director | Neurosurgery



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11:40 am Optimizing Surgery and Immunotherapy for Gliomas using

**Advances in Genomics** 

Nduka M. Amankulor, MD | Activity Director | Neurosurgery

12:00 pm Q & A Panel Discussion

MODERATORS: Nduka M. Amankulor, MD Activity Director | Neurosurgery

<u>Steven Brem, MD</u> | Activity Director | Neurosurgery

**PANEL:** 

Stephen J. Bagley, MD, MSCE | Activity-Co-Director | Hematology Oncology

Zev Binder, MD, PhD | Neurosurgery Christina Jackson, MD | Neurosurgery

<u>Donald M. O'Rourke, MD</u> | Activity Co-Director | Neurosurgery

12:15 pm Lunch / Visit Exhibits / Chat with Experts

## SCIENTIFIC SESSION III: PROGRESS IN THE TREATMENT OF MALIGNANT BRAIN TUMORS

MODERATOR: Suyash Mohan, MD, PDCC | Activity Co-Director | Radiology

1:00 pm KEYNOTE ADDRESS: The INDIGO Trial and a Paradigm Change in the Treatment

of IDH-mutant Low-Grade Gliomas

Ingo K. Mellinghoff, MD, FACP | Neuro-Oncology | Memorial Sloan Kettering

1:30 pm Medical and Symptom Management of Patients with Brain Tumors

Amy A. Pruitt, MD | Neurology

1:50 pm Seizure Management for Brain Tumor Survivors: Current Concepts

Saurabh R. Sinha, MD, PhD | Neurology

2:05 pm Q & A Panel Discussion

MODERATOR: Suyash Mohan, MD, PDCC | Activity Co-Director | Radiology



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#### PANEL:

Amy A. Pruitt, MD | Neurology
Ingo K. Mellinghoff, MD, FACP | Neuro-Oncology | Memorial Sloan Kettering
Saurabh R. Sinha, MD, PhD | Neurology

## SCIENTIFIC SESSION IV: ADVANCES IN PRECISION SURGERY, MEDICAL AND RADIATION ONCOLOGY

**MODERATOR:** <u>Harper Hubbeling, MD</u> | Radiation Oncology

2:20 pm **Updates in Liquid Biopsy for Brain Tumors** Stephen J. Bagley, MD, MSCE | Activity-Co-Director | Hematology Oncology Biomarkers in Immuno-Oncology: Road to Personalized Immunotherapy 2:35 pm Christina Jackson, MD | Neurosurgery **Advances in Radiation Therapy for Patients with Brain Tumors** 2:50 pm Emily Lebow, MD | Radiation Oncology **Updates in the Targeted and Immunological Treatment of Brain Metastases:** 3:05 pm Melanoma Tara C. Mitchell, MD | Hematology Oncology 3:20 pm mRNA Technology to Develop Vaccines for Brain Tumors: Preliminary **Experience and Prospects for Future Development** Peter J. Madsen, MD, MBE | Neurosurgery | Children's Hospital of Philadelphia **Advances in Intraoperative Molecular Imaging of Brain Tumors:** 3:35 pm **Visualizing the Invisible** John Y.K. Lee, MD, MSCE | Neurosurgery

3:50 pm Q & A Panel Discussion

MODERATOR: Harper Hubbeling, MD | Radiation Oncology



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#### **PANEL:**

Stephen J. Bagley, MD, MSCE | Activity-Co-Director | Hematology Oncology

Christina Jackson, MD | Neurosurgery

Emily Lebow, MD | Radiation Oncology

John Y.K. Lee, MD, MSCE | Neurosurgery

Peter J. Madsen, MD, MBE | Neurosurgery

Tara C. Mitchell, MD | Medical Oncology

4:00 pm Conference Adjourns

#### **Post Conference Details**

After the conference has concluded, all attendees will receive an <u>email from Penn CME</u> with instructions on how to complete the post-test, evaluation, claim credit and obtain a certificate. Look for the email the week after the conference.

If you missed the Pre-Test, you will still be eligible to obtain your certificate after you complete the Post-Test and Evaluation. A <u>Certificate of Participation</u> is available to attendees who are not physicians or nurses.

#### **Meeting Videos**

Website: PennMedicine.org/Abramson/BloodCME2025

\*Recordings from the meeting will be available Thursday, February 6, 2025, through February 2026

#### **Preliminary Data References**

Please note that some of the studies reported in this CE activity may have been published as abstracts only and/or presented at a conference. In these cases, the references provided in individual presentations reflect that and will be easy for you to recognize. These data and conclusions are included because expert faculty found them to be potentially important scientific contributions but should be considered preliminary until published in a peer-reviewed journal.



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#### Overview

The purpose of this educational activity is to provide a review of new treatment options in neuro-oncology, including surgical techniques, and intraoperative imaging, along with, radiation and systemic therapies that have improved patient outcomes. Sessions will feature the latest advances in state-of-the-art care for practicing clinicians treating patients with brain tumors. Cutting-edge topics in precision medicine, including genetic, translational, and clinical research will also be featured. Activity format will provide significant opportunity for interaction with expert faculty and other attendees with the aim of implementing new standards of patient care. Participants will leave with up-to-date, practical information which will have immediate clinical application, as well as technical and scientific background on the current state, and where the latest scientific advances may take the field.

#### Who Should Attend

This symposium is designed for neurosurgeons, neurooncologists, neurologists, neurologists, radiologists, radiologists, medical oncologists, radiation oncologists, pathologists, primary care physicians, oncology nurses, and other healthcare professionals involved in the treatment of patients with brain tumors. Additionally, patients and their caregivers, family members, advocates and members of the public who may benefit from understanding current innovative approaches to brain tumor care are invited.

We gratefully acknowledge the following companies for providing educational grants:

# Guerbet Integra LifeSciences



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#### **Learning Objectives**

Upon completion of this course, participants should be able to:

- Evaluate the latest advancements in brain cancer diagnosis and treatment.
- Review the role of innovative technologies like LITT, molecular profiling, and neuroimaging in improving patient care.
- Analyze the current landscape of CAR T-cell therapy for brain tumors and its future potential.
- Explore emerging technologies and strategies for optimizing surgery and immunotherapy for gliomas.
- Assess the impact of the INDIGO trial on the treatment of IDH-mutant low-grade gliomas.
- Gain practical knowledge in medical and symptom management for patients with brain tumors.
- Evaluate the latest advancements in liquid biopsy, radiation therapy, and targeted treatments for brain tumors.
- Explore the potential of mRNA technology and intraoperative molecular imaging in improving outcomes for brain tumor patients.

#### **Accreditation**



In support of improving patient care, Penn Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

#### **Designation of Credit**

**PHYSICIANS:** Penn Medicine designates this live activity for a maximum of 7.5 *AMA PRA Category 1 Credits* $^{\text{TM}}$ . Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**NURSES:** The program awards 7.5 NCPD hours.



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#### **Guests & Penn Medicine Faculty**

#### **Activity Directors**

#### Nduka M. Amankulor, MD

Presidential Associate Professor in Neurosurgery Chief, Neurosurgical Oncology Director, Penn Brain Tumor Center Perelman School of Medicine at the University of Pennsylvania / Penn Medicine

Steven Brem, MD

Philadelphia, PA, USA

Professor of Neurosurgery Site Director, Surgery Rotation
Neurosurgery Director, Neurosurgery Medical Student Education
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine

#### **Activity Co-Directors**

#### Stephen J. Bagley, MD, MSCE

Assistant Professor of Medicine (Hematology Oncology)
Assistant Professor of Neurosurgery
Section Chief, Neuro-Oncology, Hematology-Oncology
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### Arati Desai, MD

Associate Professor of Medicine (Hematology Oncology)

Co-Director, Penn Brain Tumor Center

Perelman School of Medicine at the University of Pennsylvania/ Penn Medicine Philadelphia, PA, USA

#### Goldie Kurtz, MD

Assistant Professor of Radiation Oncology

Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA



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#### **Activity Co-Directors (continued)**

#### Suyash Mohan, MD, PDCC

Associate Professor of Radiology & Neurosurgery Director, Neuroradiology Clinical Research Division Department of Radiology, Division of Neuroradiology Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Donald M. O'Rourke, MD

John Templeton, Jr., M.D. Professor in Neurosurgery
Director, Glioblastoma Translational Center of Excellence
Director, Human Brain Tumor Tissue Bank
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### **Guests & Penn Faculty**

#### Kaileen M. Bevenour, PA-C

Physician Assistant (Hematology, Medical Oncology)
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### Zev Binder, MD, PhD

Research Assistant Professor, Department of Neurosurgery Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Elizabeth Heisler, PA-C

Physician Assistant, Neurosurgery Penn Medicine Philadelphia, PA, USA

#### Christina Jackson, MD

Assistant Professor of Neurosurgery
Assistant Professor of Neurosurgery in Otorhinolaryngology: Head and Neck Surgery
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Assistant Professor of Radiation Oncology Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### John Y.K. Lee, MD, MSCE

Professor of Neurosurgery
Medical Director, Gamma Knife Center
Clinical Director, Center for Precision Surgery
Director, Skull Base Surgery
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### Peter J. Madsen, MD, MBE

Assistant Professor of Neurosurgery Director, Neuro-oncology and Translational Research Children's Hospital of Philadelphia Philadelphia, PA, USA

#### Ingo K. Mellinghoff, MD, FACP

Chair, Department of Neurology Evnin Family Chair in Neuro-Oncology Memorial Sloan Kettering Cancer Center 1275 York Avenue, New York, NY 10065

#### Tara C. Mitchell, MD

Associate Professor of Medicine (Hematology Oncology)
Section Chief, Melanoma and Sarcoma, Hematology-Oncology
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#### Jennifer J.D. Morrissette, PhD

Associate Professor of Clinical Pathology and Laboratory Medicine Clinical Director, Center for Personalized Diagnostics Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Ali Nabavizadeh, MD

Assistant Professor of Radiology Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### MacLean Nasrallah, MD, PhD

Assistant Professor of Clinical Pathology and Laboratory Medicine Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Meghan O'Neill, CRNP

Nurse Practitioner (Hematology, Medical Oncology) Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Amy A. Pruitt, MD

William N. Kelley Professor of Neurology Vice Chair of Education Advisory Dean Division Chief, General Neurology Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA

#### Harper Hubbeling, MD

Assistant Professor of Radiation (Radiation Oncology) Perelman School of Medicine at the University of Pennsylvania / Penn Medicine Philadelphia, PA, USA



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Marc J. Shapiro Professor and Chair Baylor College of Medicine Houston, TX USA

#### Saurabh R. Sinha, MD, PhD

Professor of Clinical Neurology & Vice-Chair for Neurodiagnostics
Director of EEG Laboratories
Program Director, Epilepsy & Clinical Neurophysiology Fellowships
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### Robert H. Vonderheide, MD, DPhil

Director, Abramson Cancer Center
John H. Glick Abramson Cancer Center's Director Professor
Vice Dean for Cancer Programs, Perelman School of Medicine
Vice President for Cancer Programs, UPHS
Perelman School of Medicine at the University of Pennsylvania / Penn Medicine
Philadelphia, PA, USA

#### **Daniel Yoshor, MD**

Charles Harrison Frazier Professor of Neurosurgery
Chair, Department of Neurosurgery
Vice President, Clinical Integration and Innovation
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#### **Disclosure of Financial Relationships**

Staff in the Office of Continuing Medical and Interprofessional Education (CMIE) (Bruce Brod, MD, MCHI, FAAD, Vaughn Wurst and Ansheai Spence-Jones), and the listed Planning Committee Members (Barbara Lopez, Hyacen Putmon, Jema Varnie and Gabrielle White) have reported that they have no financial relationships with any ineligible companies related to the content of this educational activity.

The following faculty and planning committee (\*) members have disclosed that they have no financial relationships with any ineligible companies related to the content of this educational activity.

Kaileen M. Bevenour, PA-C Zev Binder, MD, PhD Steven Brem, MD\* Arati Desai, MD Elizabeth Heisler, PA-C Harper Hubbeling, MD John Y.K Lee, MD, MSCE Peter J. Madsen, MD, MBE MacLean Nasrallah, MD, PhD Meghan R. O'Neill, CRNP RN Amy A. Pruitt, MD Emily Lebow, MD Robert H. Vonderheide, MD Daniel Yoshor, MD

The following planning committee (\*) and faculty members have reported the listed financial relationships with ineligible companies related to the content of their presentations. All financial relationships have been mitigated.

#### FACULTY NAME DISCLOSURE(S)

Nduka M. Amankulor, MD\* Consulting Fee-Johnson & Johnson

Stephen J. Bagley, MD\* Grant or research support-Incyte Corporation|Membership on Advisory Committees or Review Panels, Board Membership, etc.-Kiyatec (Relationship has ended)|Grant

or research support-Kite Pharma|Grant or research support-Eli Lilly (Relationship has ended)|Grant or research support-Novocure (Relationship has ended)|Grant or research support-Glaxo Smith Kline (Relationship has ended)|Grant or research support-C2i Genomics|Grant or research support-Tempus|Membership on Advisory Committees or Review Panels, Board Membership, etc.-Telix (Relationship has ended)|Membership on Advisory Committees or Review Panels, Board

Membership, etc.-Servier (Relationship has ended)

Christina Jackson, MD Consulting Fee-Stryker

Ingo K. Mellinghoff, MD, FACP

Grant or research support-Servier | Grant or research support-Global Coalition for

Adaptive Research | Grant or research support-Erasca | Grant or research support
AbbVie, Inc. | Grant or research support-Roche | Speakers Bureau-Baptist Health Care

|Advisor-Tango Therapeutics |Advisor-Pathos, Inc



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Tara C. Mitchell, MD Honoraria-Merck & Co|Honoraria-Bristol-Myers Squibb|Honoraria-Pliant

Therapeutics (Relationship has ended)|Honoraria-Pfizer (Relationship has

ended)|Honoraria-GigaGen (Relationship has ended)

Suyash Mohan, MD, PDCC Grant or research support-Novocure | Grant or research support-Galileo CDS

Jennifer J.D Morrissette, PhD Advisor-AbbVie, Inc. (Relationship has ended) | Stocks or stock options, excluding

diversified mutual funds of a publicly traded company-ThermoFisher

Ali Nabavizadeh, MD Membership on Advisory Committees or Review Panels, Board Membership, etc.-

Blue Earth Diagnostics | Membership on Advisory Committees or Review Panels,

Board Membership, etc.-Telix

Donald O'Rourke, MD\* Royalties or Patent Beneficiary-Gilead Sciences, Inc|Paid consultant-

Cellula|Royalties or Patent Beneficiary-University of Pennsylvania|Grant or research support-Tmunity Therapeutics (Relationship has ended)|Consulting Fee-Century Therapeutics (Relationship has ended)|Stocks or stock options, excluding diversified mutual funds of a publicly held company-Prescient Therapeutics|Stocks or stock

options, excluding diversified mutual funds of a publicly held company-

Implicyte | Stocks or stock options, excluding diversified mutual funds of a privately held company-Third Rock Ventures | Royalties or Patent Beneficiary-Elicio | Grant or research support-Novartis AMGEN (Relationship has ended) | Royalties or Patent Beneficiary-Novartis AMGEN | Grant or research support-Gilead Sciences, Inc

Ganesh Rao, MD Advisor-Carthera | Advisor-Monteris

Saurabh R. Sinha, MD, PhD Independent Contractor (included contracted research)-Blackthorn Therapeutics

(Relationship has ended)|Independent Contractor (included contracted research)-Basilea Pharmaceutica|Independent Contractor (included contracted research)-

Neumora Tx



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