



8th Annual
Innovative Approaches to
Brain Tumor Management

Friday, February 10, 2023

Syllabus

ESTEEMED FACULTY

Charles Cobbs, M.D.
Course Co-Chair

Director, Ben & Catherine Ivy Center
Swedish Neuroscience Institute
Seattle, Washington

Zachary N. Litvack, M.D., FAANS, FACS
Course Co-Chair

Director, Skull Base & Minimally Invasive Neurosurgery
Swedish Neuroscience Institute
Seattle, Washington

Kester Phillips, M.D.
Course Co-Chair

Neuro-oncologist
Ben & Catherine Ivy Center
Seattle, Washington

Orwa Aboud, M.D. (virtual)
Assistant Professor
University of California Davis
Sacramento & California

Garni Barkhoudarian, M.D. (virtual)
Neurosurgeon
Pacific Neuroscience Institute
Santa Monica, California

Zev Binder, M.D., Ph.D. (virtual)
Research Assistant Professor
University of Pennsylvania
Philadelphia, Pennsylvania

Michael Canney, Ph.D. (virtual)
Chief Scientific Officer
Carthera
Denver, Colorado

Tesa Desrochers, Ph.D. (virtual)
Chief Scientific Officer
Kiyatec, Inc.
Greenville, South Carolina

Na Tosha N. Gatson, M.D., Ph.D., FAAN (virtual)
Medical Director, Neuro-Oncology
Banner MD Anderson Cancer Center; Associate
Professor; University of Arizona College of Medicine,
Geisinger Commonwealth School of Medicine
Phoenix, Arizona

Edina Komlodi-Pasztor, M.D., Ph.D. (virtual)
Assistant Professor of Neurology, Director of Neuro-Oncology
MedStar Georgetown University Hospital, Lombardi
Comprehensive Cancer Center
Washington, DC

Sean Lawler, Ph.D. (virtual)
Associate Professor
Brown University
Providence, Rhode Island

Sandro Matosevic, Ph.D. (virtual)
Assistant Professor
Purdue University
West Lafayette, Indiana

Alon Orlev, M.D. (virtual)
Neurosurgeon
Rabin Medical Center
Israel

Ralph Puchalski, Ph.D. (pre-recorded)
Lab Scientist
Ben & Catherine Ivy Center
Swedish Neuroscience Institute
Seattle, Washington

Byung-Han Rhieu, M.D.
Radiation Oncologist
Swedish Hospital
Seattle, Washington

Analiz Rodriguez, M.D., Ph.D. (virtual)
Associate Professor, Director of Neurosurgical Oncology

Robert Ryan, M.D.
Neurosurgeon

University of Arkansas for Medical Sciences
Little Rock, Arkansas

Leanna Standish, ND, Ph.D.

Co-Director AIMS Institute
AIMS Institute
Seattle, Washington

Virginia Mason
Seattle, Washington

Gabriel Zada, M.D., MS, FAANS, FACS (virtual)

Professor of Neurological Surgery
USC Keck School of Medicine
Los Angeles, California

AGENDA

- 7:30 a.m. Registration & Breakfast**
- 7:55 a.m. Welcome & Announcements**
Zachary N. Litvack, M.D. & Kester Phillips, M.D. & Charles Cobbs, M.D.
- 8 a.m. Surgical Biopsy of Challenging Neoplastic Skull Base Lesions (virtual)**
Alon Orlev, M.D.
Objectives:
- Describe examples of challenging extra-ordinary skull base lesions
 - Identify the surgical complexity of attaining adequate tissue for diagnosis
 - Determine contemporary minimally invasive surgical approaches for neoplastic skull base lesions
- 8:15 a.m. Q&A**
- 8:20 a.m. Complication Avoidance & Management in Endonasal Surgery (virtual)**
Garni Barkhoudarain, M.D.
Objectives:
- Describe how to prevent common peri-operative complications associated with endonasal endoscopic surgery
 - Identify how to manage carotid artery injury during and after endonasal endoscopic surgery
 - Determine minor complications that can occur in patients undergoing endonasal operations
- 8:35 a.m. Q&A**
- 8:40 a.m. Diagnostic and Treatment Innovations in Leptomeningeal Carcinomatosis (LMC) (virtual)**
Na Tosha N. Gatson, M.D., Ph.D., FAAN
Objectives:
- Identify and utilize tools for diagnosis of LMC with accuracy
 - Apply effective approaches for treatment of LMC
- 8:55 a.m. Q&A**
- 9 a.m. Validation of a Bicistronic CAR to Overcome intratumoral Heterogeneity in GBM (virtual)**
Zev Binder, M.D., Ph.D.
Objectives:
- Describe how to target heterogeneity limits successful immunotherapy
 - Recognize treatment strategies to overcome target heterogeneity
- 9:15 a.m. Q&A**
- 9:20 a.m. Implementing Validated Functional Precision Medicine in the Clinical Care of HGG Patients (virtual)**
Tesa Desrochers, Ph.D.
Objectives:
- Describe functional precision medicine in oncology
 - Evaluate functional precision medicine applications
 - Identify how functional precision medicine utilization in oncology can impact HGG clinical treatment and patient outcomes.
- 9:35 a.m. Q&A**

9:40 a.m.	Investigating the Impact of Cytomegalovirus on Glioblastoma in Mouse Models <i>(virtual)</i> <i>Sean Lawler, Ph.D.</i> Objectives: <ul style="list-style-type: none"> Describe the impact of cytomegalovirus on glioblastoma growth Identify the potential of anti-viral therapies for glioblastoma Determine the impact of therapy on cytomegalovirus replication
9:55 a.m.	Q&A
10 a.m.	Breaks & Exhibits <i>(not for CME credit)</i>
10:10 a.m.	Transient Blood-Brain Barrier Disruption for the Treatment of Brain Tumors <i>(virtual)</i> <i>Michael Canney, M.D.</i> Objective: <ul style="list-style-type: none"> Describe the role of the blood-brain barrier in limiting the penetration of therapeutics for the treatment of brain tumors
10:25 a.m.	Q&A
10:30 a.m.	Surgically Targeted Radiation for Brain Tumors Using Gamma Tile <i>Roby Ryan, M.D.</i> Objectives: <ul style="list-style-type: none"> Describe the role for surgically targeted radiation in primary and recurrent brain tumors
10:45 a.m.	Q&A
10:50 a.m.	Reprogramming Natural Killer Cells for Immunotherapy of Glioblastoma <i>(virtual)</i> <i>Sandro Matosevic, Ph.D.</i> Objectives: <ul style="list-style-type: none"> Describe emerging therapeutic modalities for GBM based on adoptively-transferred immune cells Identify the principles behind how the efficacy and anti-GBM responses elicited by natural killer cells can benefit GBM therapy Determine how natural killer cells can be engineered to effectively and specifically target GBM
11:05 a.m.	Q&A
11:10 a.m.	Parenteral curcumin treatment of GBM: consecutive case series <i>Leanna Standish, ND, Ph.D.</i> Objectives: <ul style="list-style-type: none"> Describe the multiple molecular targets of curcumin Identify survival data in GBM patients receiving adjuvant IV curcumin Determine how to competently refer for experimental IV curcumin therapy
11:25 a.m.	Q&A
11:30 a.m.	Agent-Based Computational Modeling of Glioblastoma Predicts That Stromal Density is Central to Oncolytic Virus Efficacy <i>(pre-recorded)</i>

Ralph Puchalski, Ph.D.

Objectives:

- Identify treatment options based on oncolytic viruses
- Describe how tumor cell dynamics can be modeled for prediction of therapeutic efficacy

11:45 a.m. Q&A

11:50 a.m. Novel Approaches to Enhancing GBM Immunogenicity for Immunotherapy

Charles Cobbs, M.D.

Objectives:

- Determine key factors that prevent checkpoint inhibitor immunotherapy from working in GBM
- Describe some of the inhibitory molecules in the GBM tumor microenvironment that inhibit T-cell killing
- Identify novel approaches to improving immunogenicity in GBM

12:05 p.m. Q&A

12:10 p.m. Lunch Break & Exhibits *(not for CME credit)*

12:30 p.m. Spine Radiosurgery

Byung-Han Rhieu, M.D.

Objectives:

- Describe indications and benefits
- Determine challenges and limitations

12:45 p.m. Q&A

12:50 p.m. Treatment of Adult Medulloblastoma *(virtual)*

Edina Komlodi-Pasztor, M.D., Ph.D.

Objectives:

- Describe the diagnosis of adult medulloblastoma
- Outline the management of adult medulloblastoma

1:05 p.m. Q&A

1:10 p.m. Metabolomics in Glioblastoma *(virtual)*

Orwa Aboud, M.D., Ph.D.

Objectives:

- Explore the role of metabolomics in the field of oncology
- Describe the role of metabolomics in glioblastoma diagnosis.
- Identify the potential use of metabolomics in glioblastoma treatment evaluation

1:25 p.m. Q&A

1:30 p.m. Advanced Preclinical Brain Tumor Models: Role of the Neurosurgeon *(virtual)*

Analiz Rodriguez, M.D., Ph.D.

Objectives:

- Define the importance of tissue preservation
- Define functional precision medicine
- Describe how to improve intraoperative systems at their hospital

1:45 p.m.	Q&A
1:50 p.m.	Use of Blue Light Endoscopy Assistance for Intrinsic Brain Tumors <i>(virtual)</i> <i>Gabriel Zada, M.D., MS, FAANS, FACS</i> Objectives: <ul style="list-style-type: none"> • Describe various optical imaging modalities for intrinsic brain tumor resection • Identify the evolving role of 5-ALA and blue light endoscopy for intrinsic brain tumors
2:05 p.m.	Q&A
2:10 p.m.	Course Wrap Up
2:15 p.m.	Adjourn

Acknowledgements

The Planning Committee gratefully acknowledges support for this conference from

Educational Grant

NW Biotherapeutics
Novocure

Exhibit Support

Day Surgical
Integra
Kiyatec
NICO Neuro
Stryker
UCB

Course Planning Committee

Charles Cobbs, M.D.

Course Co-Chair
Director, Ben & Catherine Ivy Center
Swedish Neuroscience Institute
Seattle, Washington

Zachary N. Litvack, M.D.

Course Co-Chair
Director, Skull Base & Minimally Invasive Neurosurgery
Swedish Neuroscience Institute
Seattle, Washington

Kester Phillips, M.D.

Course Co-Chair
Neuro-oncologist
Ben & Catherine Ivy Center
Seattle, Washington

Clifford Pierre, M.D.

Neurosurgery Fellow
Swedish Neuroscience Institute
Seattle, Washington

Cory Kepler

Education Specialist
Seattle Science Foundation
Seattle, Washington

Course Evaluation

Please take a moment to complete our online evaluation, which will be emailed to you. Your feedback helps to ensure the effectiveness of this CME activity, as well as improve future educational activities. All responses are considered anonymous. <https://www.surveymonkey.com/r/BTM2023>

If you do not receive the survey via email, please call (206) 732-6500 or email cme@seattle-science-foundation.org.

Accreditation

Seattle Science Foundation is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA Category 1 Credits™

Seattle Science Foundation designates this live activity for a maximum of 5.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Identifying and Resolving Conflicts of Interest

Purpose: The information provided addresses several requirements of the ACCME to help **ensure purpose** in CME activities. Everyone in a position to control the content of a CME activity must disclose all relevant financial relationships with commercial interests to the CME provider. This information must be disclosed to participants prior to the beginning of the activity. Also, CME providers must resolve current conflicts of interest prior to the educational activity.

Definitions: “Financial relationships” are those relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria for promotional speakers’ bureau, ownership interest (e.g., stocks, stock options or other ownership interest, excluding diversified mutual funds), or other financial benefit. Financial benefits are usually associated with roles such as employment, management position, independent contractor (including contracted research), consulting, speaking and teaching, membership on advisory committees or review panels, board membership, and other activities from which remuneration is received, or expected. ACCME considers relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

The ACCME defines a “**commercial interest**” as any entity producing, marketing, re-selling or distributing health care goods or services consumed by, or used on, patients. Among the exemptions to this definition are government organizations, non-health care related companies and non-profit organizations that do not advocate for commercial interests.

Circumstances create a “**conflict of interest**” when an individual has an opportunity to affect CME content about products or services of a commercial interest with which he/she has a financial relationship.

ACCME focuses on financial relationships with commercial interests in the 12-month period preceding the time that the individual is being asked to assume a role controlling content of the CME activity. ACCME has not set a minimal dollar amount for relationships to be significant. Inherent in any amount is the incentive to maintain or increase the value of the relationship.

The ACCME defines “**relevant financial relationships**” as financial relationships in any amount occurring within the past 24 months that create a conflict of interest.

CME Activity Planning Committee Members: If a conflict of interest exists, the Planning Committee member must withdraw from the Planning Committee unless the conflict can be resolved. Resolution may be made by one of the following methods: (1) Peer review of CME content will be conducted at another oversight level to assure no commercial bias exists; (2) Change in focus of course so the activity does not include information related to products or services about which the planning committee member has a conflict; (3) Severing relationship(s) between the member and any related commercial interest; (4) Others to be determined by SSF CME Committee.

CME Activity Presenter: When a conflict of interest exists, the Planning Committee must address the conflict by one of the following methods: (1) Review content to be presented by speaker in advance to assure content balance; (2) Change topic so the presentation is not related to products or services where a conflict exists; (3) Select a different presenter without any related commercial interest; (4) Include presentations by other faculty to provide an overall balance to the content of the course; (5) Limit or specify the sources for recommendations that the presenter can use. Each speaker is required to give a balanced, evidence-based presentation based on published research. No conclusions or recommendations without external validation may be made by a speaker with a conflict of interest.

Faculty Disclosure Summary

The following planners and presenters, in the past 24 months, have/had a financial relationship with a commercial interest: (*S = Speaker; P = Planner*)

Garni Barkhoudarian, M.D., Ph.D. (S): Consultant: Vascular Technologies Inc., Cerevasc Inc.

Zev Binder, M.D., Ph.D. (S): Board Member: Tmunity

Tessa DesRochers, Ph.D. (S): Executive: Kiyatec Inc.

Zachary Litvack, M.D. (P): Research: NxDev/Medexus Pharma

Sandro Matosevic, M.D., Ph.D. (S): Consultant: Astellas, Pharma, Affimed

Kester Phillips, M.D. (P): Advisor: Kiyatec

Analiz Rodriguez, M.D., Ph.D. (S): Royalties: Medexus Pharmaceutical

Gabriel Zada, M.D. (S): Consultant: Stryker, Integra

The following planners and presenters, in the past 24 months, have/had no financial relationship with a commercial interest: (*S = Speaker; P = Planner*)

Orwa Aboud, M.D., Ph.D. (S); **Michael Canney, Ph.D.** (S); **Charles Cobbs, M.D.** (S,P); **Na Tosha N. Gatson, M.D., Ph.D.** (S); **Edina Komlodi-Pasztor, M.D., Ph.D.** (S); **Sean Lawler, Ph.D.** (S); **Alon Orlev, M.D.** (S); **Ralph Puchalski, M.D., Ph.D.** (S); **Byung-Han Rhieu, M.D.** (S); **Robert Ryan, M.D.** (S); **Leanna Standish, M.D., Ph.D., FABNO** (S); **Clifford Pierre, M.D.** (SP); **Cory Kepler** (P)

All planners and presenters attested that their content suggestions and/or presentation(s) will provide a balanced view of therapeutic options and will be entirely free of promotional bias. All presentations have been reviewed by a planner with no conflicts of interest to ensure that the content is evidence-based and unbiased.