

AGENDA, Tuesday, June 7

7:30 AM **Welcome and Registration**

General Session (Conference Room C/D, 1st Floor)

8:00 AM **Welcome**

Gary Gibbons, MD, Director, NHLBI

8:10 AM **Workshop Introduction**

Keith Hoots, MD, Director, DBDR

Goals and Objectives

Margaret Ochocinska, PhD, Program Director, DBDR

8:20 AM **Keynote: Initial Experience in a Pilot Study of Blood-Brain Barrier Opening for Chemo-Drug Delivery to Brain Tumors by MR-Guided Focused Ultrasound**

Todd Mainprize, MD, Sunnybrook Health Sciences Center

Blood Sciences Session – Part I (Conference Room C/D, 1st Floor)

Session Chair: Berislav Zlokovic, MD, PhD, University of Southern California

8:40 AM **Session Introduction**

Berislav Zlokovic, MD, PhD, University of Southern California

8:45 AM **The Blood-Brain Barrier and Neurodegeneration**

Berislav Zlokovic, MD, PhD, University of Southern California

9:05 AM **Microfluidics for Blood Research: from disease simulation to patient-specific phenotyping to diagnostics**

Scott Diamond, PhD, Penn Center for Molecular Discovery

9:25 AM **Microparticles Impact Coagulation after Traumatic Brain Injury**

Michael Goodman, MD, University of Cincinnati

9:45 AM **Fibrinogen in Neurological Diseases: mechanisms, imaging, therapeutics**

Katerina Akassoglou, PhD, UCSF School of Medicine

10:05 AM **Exosomes in Glioma: their potential as carriers of information between the tumor and immune cells**

Theresa Whiteside, PhD, University of Pittsburgh

10:25 AM **Break**

Blood Sciences Session – Part II (Conference Room C/D, 1st Floor)

Session Chair: A Tamara Crowder, PhD, Combat Casualty Care Research Program, DoD

10:40 AM **Session Introduction**

A Tamara Crowder, PhD, Combat Casualty Care Research Program, DoD

10:50 AM **Monitoring the Central Nervous System through Peripheral Biofluids**

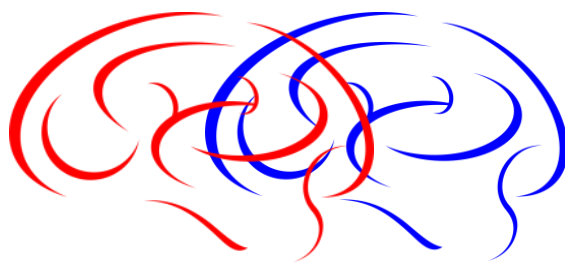
Kendall Jensen, PhD, TGen Center for Noninvasive Diagnostics

11:10 AM **Studying the Blood-Brain Barrier: perspectives from understanding the biokinetics of biomarkers of brain injury**

Alex Valadka, PhD, Virginia Commonwealth University

11:30 AM **Post-traumatic Cerebral Blood Flow, Autoregulation, and the Neurovascular Unit**

Donald Marion, MD, Defense and Veterans Brain Injury Center



11:50 AM ***Employing Transporters at Blood-Brain Interfaces to Regulate the Brain's Metabolomic and Pharmacologic Microenvironment***
Robert Clark, MD, University of Pittsburgh

12:10 PM ***Lunch***

Exosome Therapeutics Session (Conference Room C/D, 1st Floor)

Session Chair: Richard Kraig, MD, PhD, University of Chicago Medical Center

1:10 PM ***Session Introduction***
Richard Kraig, MD, PhD, University of Chicago Medical Center

1:15 PM ***In Vivo Tracking of Dendritic Cell Exosomes Delivered to Brain***
Richard Kraig, MD, PhD, University of Chicago Medical Center

1:35 PM ***High Content Proteomics/Lipidomics Analysis: on a path toward understanding the mechanisms of exosome-mediated cellular uptake and blood-brain barrier crossing***
Anastasia Khvorova, PhD, University of Massachusetts Medical School

1:55 PM ***Exosome-like Nanoparticles Delivering Therapeutic Agents through an Intranasal Route Inhibit Brain Tumor Progression***
Huang-Ge Zhang, PhD, University of Louisville

2:15 PM ***Plasma Exosomes Enriched for Neuronal Origin: a source of biomarkers for neurodegenerative and neuroinflammatory diseases***
Dimitrios Kapogiannis, MD, National Institute of Aging, NIH

2:35 PM ***HER2-targeted Extracellular Vesicles Delivery of Therapeutic mRNA for Enzyme Prodrug Therapy***
A.C. Matin, PhD, Stanford University

2:55 PM ***Break***

Discussion Session

3:10 PM ***Open Microphone Discussion and Panel - Blood Brain Interface I***
Moderator: Andrei Kindzelski, MD, PhD, Program Director, DBDR

4:45 PM ***Wrap-up***
Margaret Ochocinska, PhD

5:00 PM ***Adjourn***

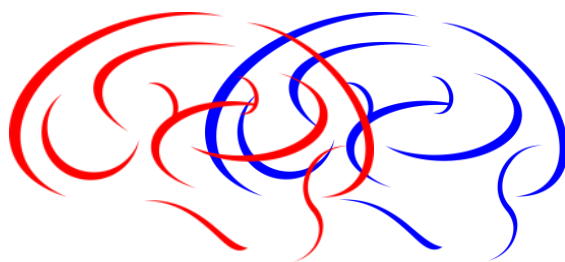
6:30 PM ***Informal Dinner***
Democracy Grille

Wednesday, June 8

7:30 AM ***Welcome and Registration***

General Session (Conference Room C/D, 1st Floor)

8:00 AM ***Keynote: From Blood-Brain Barrier to Blood-Brain Interface: new opportunities for CNS drug delivery***
William Banks, MD, FACE, University of Washington



Next Generation *in vitro* BBB Models Session (Conference Room C/D, 1st Floor)

Session Chair: Peter Searson, PhD, Johns Hopkins School of Medicine

- 8:20 AM ***Session Introduction***
Peter Searson, PhD, Johns Hopkins School of Medicine
- 8:25 AM ***Assessing the Feasibility of an *in vitro* Neurovascular Unit***
Peter Searson, PhD, Johns Hopkins School of Medicine
- 8:45 AM ***NeuroVascular Unit (NVU) on a Chip: new direction in blood-brain barrier modeling and perfusion***
Jacquelyn Brown, PhD, Vanderbilt University
- 9:05 AM ***Modeling and Targeting the Blood-Brain Barrier in Health and Disease***
Eric Shusta, PhD, University of Wisconsin - Madison
- 9:25 AM ***Developing Tridimensional Models of the Human Cerebral Cortex *in vitro****
Sergiu Pasca, MD, Stanford University
- 9:45 AM ***Revealing the Transport Mechanisms, Kinetics, and Energetics of Drugs Diffusing through Membranes of the Blood-Brain Barrier***
Martin Ulmschneider, PhD, Johns Hopkins University
- 10:05 AM ***Break***

Blood-Brain Barrier Delivery and Targeting Session (Conference Room C/D, 1st Floor)

Session Chair: Julia Ljubimova, MD, PhD, Cedars-Sinai Medical Center

- 10:20 AM ***Session Introduction***
Julia Ljubimova, MD, PhD, Cedars-Sinai Medical Center
- 10:25 AM ***Overcoming Blood-Brain Barrier for Precise Diagnosis, Targeting and Treatment of Primary and Metastatic Brain Tumors***
Julia Ljubimova, MD, PhD, Cedars-Sinai Medical Center
- 10:45 AM ***Nanotechnology Takes Aim at the Blood-Brain Barrier***
Efsthios (Stathis) Karathanasis, PhD, Case Western Reserve University
- 11:05 AM ***Spherical Nucleic Acids for the Precision Treatment of Malignant Glioma***
Alexander Stegh, PhD, Northwestern University
- 11:25 AM ***Three Areas Where Studies of the Blood-Brain Barrier Change Patient Care***
Edward Neuwelt, MD, Oregon Health & Science University and the Portland Veterans Affairs Medical Center
- 11:45 AM ***Drug and Nucleic Acid Delivery to the Brain***
Justin Hanes, PhD, Johns Hopkins University
- 12:05 AM ***Break***

Discussion Session

- 12:15 PM ***Open Microphone Discussion and Panel - Blood Brain Interface II (Conference Room C/D, 1st Floor)***
Moderator: Christina Liu, PhD, Program Director, NCI
- 1:15 PM ***Wrap Up and Next Steps***
Margaret Ochocinska, PhD
- 1:30 PM ***Adjourn Workshop***