

Digital Neuro Symposium

Artificial Intelligence,
Advanced Digital Technologies,
and Device Development
in Neurosurgery

DECEMBER 7 & 8, 2018

Icahn School of Medicine at Mount Sinai
Leon and Norma Hess Center for Science and Medicine
Davis Auditorium and Seminar Room A
1470 Madison Avenue
New York, NY

TO REGISTER & FOR MORE INFORMATION

<https://mssm.cloud-cme.com/2018Neurosurgery>

FREE REGISTRATION for Mount Sinai medical students.

Email holly.oemke@mountsinai.org for the code.

For registration information, contact cme@mssm.edu or 212-731-7950.

Course Directors

Anthony B. Costa, PhD

Assistant Professor
Department of Neurosurgery
Director, Sinai BioDesign
Mount Sinai Health System

Joshua B. Bederson, MD

Professor & System Chair
Department of Neurosurgery
Mount Sinai Health System

Celebrating
1968-2018
50
Years

 Icahn School
of Medicine at
Mount
Sinai

Digital Neuro Symposium

Invited lecturers from around the world are joining Mount Sinai Health System physicians and researchers to expand the conversation around state-of-the-art medical technology.

Our mission is to unite highly collaborative teams of physicians, computer and imaging scientists, mid-level practitioners, engineers, and entrepreneurs. Through the process of innovation and entrepreneurship, these partnerships and tools have the opportunity to improve outcomes for patients.

PROGRAM OBJECTIVES

Identify indications, best-practices use, and expected outcomes of integrated digital technologies from the patient experience through recovery for intracranial surgical disorders.

Develop sufficient practical knowledge of the necessary workflow of technologies in order to develop a strategy for implementing advanced digital technologies to maximally benefit available benefit to patient outcomes.

Understand the role of the practicing neurosurgeon in emerging technology research and development, and the necessity for neurosurgical physician leadership.

Identify and explain the opportunities for treatment in psychiatry for functional neurosurgery technologies using up and coming platforms including robotics.

WHO SHOULD ATTEND?

Neurosurgeons, Neurologists, Otolaryngologists, Neuroscientists, Advanced Practice Providers, Allied Health Professionals, Residents, Fellows, Medical Students, Researchers, and Engineers.

ACCREDITATION

The Icahn School of Medicine at Mount Sinai is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

CREDIT DESIGNATION

The Icahn School of Medicine at Mount Sinai designates this live activity for a maximum of 13.00 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

VERIFICATION OF ATTENDANCE

Will be provided to all professionals.

COURSE LOCATION

The Bonnie M. Davis, MD and Kenneth L. Davis, MD Auditorium and Seminar Room A, 2nd Floor, 1470 Madison Avenue (Between 101st & 102nd Streets), New York, NY.

PARKING

The entrance to the Mount Sinai Parking Garage is located on the SW corner of 99th Street and Park Avenue. Discounted Parking is available for Saturday only. Parking ticket will be validated at the Registration Desk.

ACCOMMODATIONS

Discounted sleeping rooms can be reserved with Wheatonia Malekebu, by calling 212-241-2377 or emailing wheatonia.malekebu@mountsinai.org

SPECIAL NEEDS

The Icahn School of Medicine at Mount Sinai is in full compliance with provisions of the Americans with Disabilities Act (ADA) and is accessible for individuals with special needs. If you require special accommodations, call the Office of CME, 212-731-7950.

Lectures given by academic and clinical experts will join leaders in the medical technology industry to provide hands-on practical demonstrations. Exhibitions will be performed with the use of patient-specific, 3D-printed models that are integrated directly into virtual operating rooms. Discussions lead by the experts will inspire attendees to identify best practices and opportunities for improvement.

TO REGISTER

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For more information, call 212-241-1170

DAY 1 COURSE AGENDA

7:30 am Registration

TRACK I Artificial Intelligence in Neurosurgery

Moderator: Eric K. Oermann, MD

- 8:00 **Welcome and Introduction**
Joshua B. Bederson, MD
- 8:15 **Man Versus Machine? Balancing Data
with the Art of Medicine**
Lola B. Chambless, MD
- 9:00 **COFFEE BREAK**
- 9:30 **Computing in Neurosurgery**
Anthony B. Costa, PhD
- 10:00 **KEYNOTE LECTURE**
**Artificial Intelligence to Improve Outcomes
in Neurological Disease**
Eric K. Oermann, MD
- 10:45 **BREAK**
- 11:00 **LIGHTING ROUND TALKS**
ACCEPTED PAPER AUTHORS
- 11:55 **Closing**
Eric K. Oermann, MD
- 12:00 pm **LUNCH**

TRACK II Team-Based Approach to Simulation and Navigation in Neurosurgery

Moderator: Holly E. Oemke, BA

- 8:00 **Welcome and Introduction**
Leslie C. Schlachter, PA-C
- 8:15 **Advanced Imaging and Scan Acquisition**
Kambiz Nael, MD
- 8:45 **Simulation Consultations for Cranial and
Cerebrovascular Pathology**
Leslie C. Schlachter, PA-C
- 9:15 **COFFEE BREAK**
- 9:30 **VR for Surgical Rehearsal, Teaching and Beyond**
Walter Jean, MD
- 10:00 **The Importance of Pre-Operative Planning
Utilizing Mixed Reality Tools**
Holly E. Oemke, BA
- 10:20 **The Use of Mixed Reality for Preoperative Applications:
The Surgeon's Perspective**
Jeremy M. Steinberger, MD
- 10:45 **BREAK**
- 11:00 **Operating Room Set Up and Navigation Using Mock ORs**
Leslie C. Schlachter, PA-C and Holly E. Oemke, BA
- 12:00 pm **LUNCH**

TRACKS I & II Practice of Digital Neurosurgery

Moderator: Joshua B. Bederson, MD

- 1:00 **TBD**
Fady T. Charbel, MD
- 1:30 **KEYNOTE LECTURE**
Advanced Digital Technologies, Simulation and Augmented Reality in Neurosurgery
Joshua B. Bederson, MD
- 2:10 **Operative Visualization - The Next Generation**
David J. Langer, MD
- 2:30 **MOCK OPERATING ROOM DEMONSTRATIONS**
- 3:30 **Use of Augmented Reality in Endoscopic Surgery**
Alfred-Marc Iloreta Jr, MD and Raj K. Shrivastava, MD
- 4:00 **Implementation of Extended Reality Technologies Throughout the Patient Care Continuum**
Robert G. Louis Jr, MD
- 4:30 **Closing**
Joshua B. Bederson, MD

DAY 2 COURSE AGENDA

Next Generation Brain Circuit Therapeutics

Moderator: Brian H. Kopell, MD

- 8:00 am **Welcome and Introduction**
Joshua B. Bederson, MD
- 8:05 **KEYNOTE LECTURE**
Targeted Neuromodulation Strategies for Psychiatric Disorders
Helen S. Mayberg, MD
- 8:50 **TBD**
Martijn Figee, MD, PhD
- 9:20 **Neuromodulation and the Patient Experience**
Fedor E. Panov, MD
- 9:45 **COFFEE BREAK**
- 10:00 **Augmented Reality in Deep Brain Stimulation: Training, Targeting, and Therapy**
Cameron McIntyre, PhD
- 10:45 **Downloading Personalized Brain Stimulation**
Marom Bikson, PhD
- 11:30 **MOCK OPERATING ROOM DEMONSTRATIONS WITH CONCURRENT POSTER SESSION**
- 12:00 pm **LUNCH**
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Medical Device Development and Entrepreneurship

Moderator: Anthony B. Costa, PhD

- 1:00 **Introduction**
Anthony B. Costa, PhD
- 1:05 **KEYNOTE LECTURE**
Innovation in Neurotechnology
Martin Dieck
- 1:45 **Panel Discussion**
Erik Lium, PhD
- 2:30 **COFFEE BREAK**
- 2:45 **BioDesign in an Academic Medical Center**
Anthony B. Costa, PhD
- 4:00 **Spinning Out: Carving a Pathway from Institution to Investment**
Thomas J. Oxley, MD, PhD
- 4:30 **Full Symposium Closing**
Joshua B. Bederson, MD

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Faculty

COURSE DIRECTORS



Anthony B. Costa, PhD | @AnthonyCosta

Assistant Professor of Neurosurgery
Director, Sinai BioDesign
Scientific Director, Neurosurgery Simulation Core



Joshua B. Bederson, MD | @JoshBedersonMD

System Chair, Department of Neurosurgery
Professor of Neurosurgery
Director, Skull Base Surgery Center
Director, Pituitary Care and Research Center
Clinical Director, Neurosurgery Simulation Core

GUEST FACULTY AND SPEAKERS

Marom Bikson, PhD | @MaromBikson

Professor of Biomedical Engineering
The City College of New York

Lola B. Chambless, MD | @lola_chambless

Assistant Professor of Neurosurgery
Vanderbilt University Medical Center

Fady T. Charbel, MD

Richard L. and Gertrude W. Fruin Professor
Head of Neurosurgery
University of Illinois at Chicago

Martin Dieck

Chairman of Synchron
Executive Chairman of Cerebrotech Medical Systems

Martijn Figee, MD, PhD

Associate Professor of Psychiatry, Neurosurgery, Neurology, and Neuroscience
Director, Interventional Psychiatry Program

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Professor of Neurosurgery
George Washington University Hospital

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Professor of Neurosurgery, Neurology, Neurosciences, and Psychiatry
Director, Center for Neuromodulation
Mount Sinai Health System

David Langer, MD

Chair, Department of Neurosurgery at Lenox Hill Hospital
Professor of Neurosurgery and Radiology
Zucker School of Medicine at Hofstra Northwell

Erik Lium, PhD

Executive Vice President
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Minimally Invasive Brain and Spine Surgery
Hoag Neurosciences Institute
Diplomate, American Board of Neurological Surgery
The Brain and Spine Center at Hoag

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Professor of Neurosurgery, Neurology, Neurosciences, and Psychiatry
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Director, Innovation Strategy

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Assistant Professor of Neurosurgery
Associate Director, Adult Epilepsy Surgery

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Senior Physician Assistant of Neurosurgery
Clinical Director, Mount Sinai Health System
Associate Clinical Director, Neurosurgery Simulation Core

Raj K. Shrivastava, MD

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Professor of Neurosurgery and Otolaryngology
Associate Director, Neurosurgery Residency
Mount Sinai Health System

Jeremy M. Steinberger, MD | @humansofnsgy

Spine Fellow
Hospital for Special Surgery

FACULTY DISCLOSURE

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