Message from the Chair

Advances in knowledge derived from academic neurosurgery departments have revolutionized the practice of neurosurgery, making interventions safer and less invasive.

Clinical and translational research form a central pillar of our mission. This issue of the neurosurgery newsletter highlights some of our activities in this area, including recent publications, presentations, invited lectures, and our annual Neurosurgery Research Day.

We are proud to collaborate with the medical school, hospital and Departments of Neuroscience, Health Evidence and Policy, and Developmental and Regenerative Biology. Three exciting new recruits, Jenny Zou, MD, PhD, Sathish Subbaiah, MD, and Roland Friedel, PhD, will contribute significantly to neurosurgery research, and will be featured in the next newsletter.

Joshua B. Bederson, MD
Professor and Chairman
Director of Cerebrovascular Surgery

Neurosurgery Research

Research Day Endowed Lectures

Jeannette and Bernard S. Post, MD, Endowed Lecture:
New Insight into the Biological Basis of Depression
Eric J. Nestler, MD, PhD
Professor and Chair
Department of Neuroscience and the Brain Institute
Mount Sinai School of Medicine

The Ved P. Sachdev, MD, Endowed Lecture:
Role of Caspase Cell Death Pathways in Neurologic Diseases
Robert M. Friedlander, MD
Professor of Neurosurgery, Harvard Medical School
Vice Chairman, Department of Neurosurgery
Director, Neurosurgery Research
Associate Director of Cerebrovascular Surgery
Brigham and Women's Hospital
Harvard Medical School

Kalmon D. Post, MD, Resident Publication Award

Dr. Scott Meyer was awarded the Kalmon D. Post, MD, Resident Publication Award for Outcomes of carotid artery stenting in high-risk patients with carotid artery stenosis: a single neurovascular center retrospective review of 101 consecutive patients, which has been accepted for publication in Neurosurgery. Other authors are Drs. Chirag Gandhi, David Johnson, H. Richard Winn and Aman B. Patel.

Drs. Meyer and Post

Visit us at www.mssm.edu/neurosurgery
Ongoing Research

**Oncology**
North Central Cancer Center Treatment Group, Brain Tumor Trials – Isabelle M. Germano, MD, Alexis Demopoulos, MD
Phase I/II Trial of Imatinib Vasilate (Gleevec ST 157) in Treatment of Recurrent Oligodendroglioma and Mixed Astrocytoma – Alexis Demopoulos, MD, Isabelle M. Germano, MD
Phase II Study of Vorinostat (SAHA) in Combination with Bortezomib (PS-341) in Patients with Recurrent Glioblastoma Multiforme – Alexis Demopoulos, MD, Isabelle M. Germano, MD
The Role of Scalp Block for Radiosurgery Patients – Stacie Deiner, MD, Isabelle M. Germano, MD, Sheryl Green, MD
Retrospective Study of Radiosurgery Patients at Mount Sinai – Isabelle M. Germano, MD
Glioblastoma and Cytomegalovirus Infection – Steven Lehrer, MD, Isabelle M. Germano, MD, Sheryl Green, MD
Transgenic in Vivo Delivery of mda-7/IL-24 in Gliomas – Isabelle M. Germano, MD
Gene Delivery by Human Embryonic Stem Cell Derived Astrocytes – Isabelle M. Germano, MD
Ultrastructure of Gap Junctions in Human Brain – Farid Hamzei-Sichani, MD, PhD, Isabelle M. Germano, MD, Patrick Hof, PhD
Memantine HCl Modulation of CSFA (Amyloid Beta) Levels – Samuel Gandy, MD, Isabelle M. Germano, MD
Molecular Analysis of Pituitary Tumors – Kalmon D. Post, MD
Octreotide LAR in Treatment of Acromegaly before and after Surgery – Kalmon D. Post, MD
Body Composition and the Metabolic Syndrome in Cushing’s Disease – Eliza Geer, MD, Kalmon D. Post, MD
Glioma Mouse Models to Screen for Tumor Genes by Transposon Mutagenesis – Roland Friedel, PhD

**Vascular**
Microvascular Injury after Subarachnoid Hemorrhage – Fatima Sehba, PhD, Joshua Bederson, MD
Regulation of Cerebral Blood Flow after Adenosine – H. Richard Winn, MD
Wingspan Stent, Gateway Balloon Catheter Device, SAPHIRE WW – Aman Patel, MD
Onyx Liquid Embolic System (ONYX HD – 500) – Aman Patel, MD
ICH Removal: Safety and Efficacy of MIS+rt-PA – Joshua Bederson, MD, Aman Patel, MD
Recurrent Vasospasm after Endovascular Treatments in SAH – Jennifer Frontera, MD, Aman Patel, MD
Intracerebral Hematoma and Aneurysms: Clipping vs. Coiling and Clot Evacuation – Jennifer Frontera, MD, Joshua Bederson, MD, Aman Patel, MD
Seizures after Onyx Embolization for Arteriovenous Malformations – Jennifer Frontera, MD, Aman Patel, MD, Joshua Bederson, MD
Intracranial Hemorrhage Outcome Project (IHOP) – Jennifer Frontera, MD, Errol Gordon, MD
Randomized Clinical Trial of Unruptured AVMs/ARUBA – Jennifer Frontera, MD, Aman Patel, MD, Joshua Bederson, MD

**Spine**
Flexion-Extension Cervical MRI in Cervical Spondylosis – Tanvir Choudhri, MD
How to Reduce Post-Op Infection Rates after Spinal Surgery – Tanvir Choudhri, MD
Adjacent Segment Disease following Cervical Spine Surgery – Tanvir Choudhri, MD
Effect of Increasing Age in Elderly Patients on Post-Op Complications – Tanvir Choudhri, MD
Anterior vs. Posterior Cervical Spine Surgery for Cervical Spondylotic Myelopathy – Tanvir Choudhri, MD
Promoting Recovery of Spinal Cord Injury with Microbeams – Arthur Jenkins, MD
Comparing Cervical Arthropasty to Anterior Cervical Disc – Arthur Jenkins, MD
National Trends in Usage, Costs, and Complications in Minimally Invasive Spine Surgery – Sathish Subbaiah, MD

**Trauma**
Prediction of Post-Operative Recurrence of Subdural Hematoma – Jennifer Frontera, MD
Cost of Medical vs. Surgical Treatment of Subdural Hematoma – Jennifer Frontera, MD
National Trend in Incidence, Cost and Discharge/Subdural Hemorrhage – Jennifer Frontera, MD
Intraparenchymal and Intraventricular ICP Monitoring – Jamie Ullman, MD
Analysis of Pediatric Injuries in Elmhurst Hospital – Jamie Ullman, MD

**Functional**
Deep Brain Stimulation for Primary Dystonia – Ron Alterman, MD

**Regeneration**
Promoting Axon Regeneration by Targeting BMP/Smad1 Pathway – Hongyan Zou, MD, PhD
Molecular Mechanisms of Axon Growth and Neuronal Regeneration – Hongyan Zou, MD, PhD
Embryonic Stem Cell-Mediated Gene Transfer for Malignant Glioma. Isabelle M. Germano, MD, Luni Emdad, MBBS, PhD, Zulekha Qadeer, BS, and Mahmud Uzzaman, MD. The aim of this study is to assess the pro-apoptotic effects of embryonic stem cell-mediated transgene mda-7/IL-24 delivery on malignant gliomas in vitro as a single therapy and in combination with ionizing radiation and temozolomide. This study is supported by NIH/NCI: R01CA129489-2 to Isabelle M. Germano, MD.

Human Embryonic Stem Cells: In Vitro Differentiation to Astrocytes. Luni Emdad, MBBS, PhD, Sunita D’Souza, PhD, Zulekha Qadeer, BS, and Isabelle M. Germano, MD. This presentation outlined a protocol to achieve pure differentiation of human embryonic stem cells into astrocytes. The study was partially supported by NYSTEM Grant #CO24176 to the Department of Gene and Cell Medicine at Mount Sinai.

Parenchymal Entry of Luminar Platelet Aggregates after Subarachnoid Hemorrhage. Fatima A. Sehba, PhD, Rowena Flores, MBBS, Artur Muller, MS, Victor Friedrich, PhD, and Joshua B. Bederson, MD. This study found that platelets contribute to structural injury in microvessels after SAH and, for the first time, demonstrated escape of platelets into the brain parenchyma after an ischemic injury. The research was supported by an RO1 NS050576 from the NIH, NINDS to Fatima A. Sehba, PhD.

Role of Adenosine 2A Receptor (A2AR) in Autoregulation Induced by Acute Hypotension. German Echeverry, BS, Yoshikazu Kusano, MD, Greg Miekisiak, MD, Tobias Kulik, MD, PhD, and H. Richard Winn, MD. This study tested the hypothesis that adenosine 2a receptors are involved in regulation of vascular resistance during autoregulation induced by acute hypotension. The study was supported by grant NS-21074 from the NIH to H. Richard Winn, MD.

Frequency and Predictors of Recurrent Vasospasm after Endovascular Treatment in Subarachnoid Hemorrhage. Jennifer A. Frontera, MD, Arjun Gowda, BA, Christina Grilo, Errol Gordon, MD, David Johnson, MD, H. Richard Winn, MD, Joshua B. Bederson, MD, and Aman Patel, MD.

Efficacy of Simultaneous Intraparenchymal and Intraventricular ICP Monitoring at the Same Site. Jamie S. Ullman, MD, and Hang S. Byun, MD.

Microsurgical Anatomy of Extended Endoscopic Endonasal Approaches to the Skull Base. Dali Wu, MD, and Chun Siang Chen, MD.

Afterhyperpolarization in Dopamine Neurons: H2O2 and KATP Channels. Marat Avshalumov, PhD.

Observer Bias in Bio-Surgical Trials for Advanced Parkinson’s Disease. Ron L. Alterman, MD.
Selected Publications, 2007-2009

FACULTY

JOSHUA B. BEDERSON, MD

KALMON D. POST, MD
Post KD. Commentary. Surg Neurol. 2009 July 14 [Epub ahead of print]

RON ALTERMAN, MD

continued on page 5


MARC ARGINTEANU, MD


MARAT AVSHALUMOV, PhD


Avshalumov MV, Patel JC, Rice ME. AMPA Receptor-Dependent H$_2$O$_2$ generation in striatal medium spiny neurons but not dopamine axons: one source of a retrograde signal that can inhibit dopamine release. J Neurophysiol. 100:1590-1601, 2008.


MARTIN B. CAMINS, MD


YUANGEN CHEN, PhD


LIUNI EMDAD, MBBS, PhD


**JENNIFER A. FRONTERA, MD**

Frontera JA. How I manage the adult potential organ donor: donation after cardiac death (Part 2). Neurocrit Care. 2009 Oct 27. [Epub ahead of print]


**ELIZA GEER, MD**


**ISABELLE M. GERMANO, MD**


Binello E, Germano IM. Tonsillar carcinoma after temozolomide treatment for glioblastoma multiforme: treatment-related or dual-pathology? Neurooncol 2009 Feb 7. [Epub ahead of print]


ERROL GORDON, MD

ARTHUR L. JENKINS III, MD
Meyer SA, Singh H, Jenkins AL. Treatment of metastatic spine tumors. Mount Sinai Journal of Medicine, accepted for publication.

FRANK M. MOORE, MD

AMAN B. PATEL, MD

FATIMA A. SEHBA, PhD

SATHISH J. SUBBAIAH, MD, MS
ALFRED A. STEINBERGER, MD


JAMIE S. ULLMAN, MD


NIRIT WEISS, MD


DONALD J. WEISZ, PhD


H. RICHARD WINN, MD


HONGYAN (JENNY) ZOU, MD, PHD


RESIDENTS

SHARONA BEN-HAIM, MD


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EMANUELA BINELLO, MD, ScD, PhD

Binello E, Germano IM. Tonsillary carcinoma after temozolomide treatment for glioblastoma multiforme: treatment-related or dual pathology? Neurooncol. 2009. Feb 7 {Epub ahead of print}


JAIME GOGOLGORSKY, MD


FARID HAMZAI-SICHANI, MD, PhD


ABILASH HARIDAS, MD


SCOTT MEYER, MD


Meyer SA, Singh H, Jenkins AL. Treatment of metastatic spine tumors. Mount Sinai Journal of Medicine, accepted for publication.


HARSHPAL SINGH, MD


Meyer SA, Singh H, Jenkins AL. Treatment of metastatic spine tumors. Mount Sinai Journal of Medicine, accepted for publication.
**Full Time Faculty Practice Associate Neurosurgeons**

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