



THE AMERICAN ACADEMY OF NEUROLOGICAL SURGERY

80TH ANNUAL SCIENTIFIC MEETING
THE BREAKERS PALM BEACH
PRELIMINARY SCIENTIFIC PROGRAM

THURSDAY, OCTOBER 25, 2018

7:30 – 7:35 Welcoming Remarks: Howard Riina, 2018 Scientific Program Chair

7:35 – 8:45 ABSTRACT SESSION: SELECT REPORTS
MODERATOR: CARGILL ALLEYNE

7:35 – 7:45 Cerebrovascular

Two-year safety and clinical outcomes in chronic Ischemic stroke patients after implantation of modified bone marrow-derived mesenchymal stem cells (SB623): a phase 1/2a study - Gary K. Steinberg, MD

7:45 – 7:55 Functional

Closed-loop deep brain stimulation for essential tremor - Kelly Foote, MD,

7:55 – 8:05 Spine

The Safety and Efficacy of Riluzole in Enhancing Functional Outcomes in Patients Undergoing Surgery for Cervical Spondylotic Myelopathy: Results of the CSM-Protect Prospective, Multi-Center Randomized Controlled Trial in 300 Patients - Michael G. Fehlings, MD, PhD, FRCS

8:05 – 8:15 Trauma

Bioengineered SMaRT Human Neural Stem Cells to Degrade Scar and Enhance Regeneration in Chronic Spinal Cord Injury - Christopher Ahuja, MD

8:15 – 8:25 Tumor

Combinatorial Platform for CART Cell Therapy for Glioblastoma - Donald M. O'Rourke, MD

8:25 – 8:35 Pediatric

Rationale for a clinical trial of neoadjuvant pembrolizumab and autologous tumor lysate dendritic cell vaccination for recurrent high-grade glioma in children -
Anthony C. Wang, MD

8:35 – 8:45 History

Psychosurgery Reconsidered, and the Legacy of Walter Freeman - Michael Schulder, MD

8:45 – 9:25 - SPECIAL SESSION: WHY DO NEUROSURGERY TRIALS FAIL?

8:45 – 8:55 - INTRODUCTION - Frederick G. Barker, II, MD

8:55 – 9:05 - EQUIPOISE AND FEASIBILITY RCTs - Z Ghogawala

9:05 – 9:15 - HOW TO TRAIN FUTURE TRIALISTS - Aviva Abosch, MD, PhD

9:15 – 9:25 - Panel Discussion

9:25 – 9:40 | Break

9:40 – 10:50 ABSTRACT SESSION: TUMOR SCIENCE
MODERATOR: NADER SANAI

9:40 – 9:50

Liquid Biopsy for Identification of Newly Diagnosed Glioma -
Steven N. Kalkanis, MD

9:50 – 10:00

A Phase 0/2 Clinical Trial of Ribociclib for Recurrent Atypical and Malignant Meningioma - Nader Sanai, MD

10:00 – 10:10

ABC Transporter Inhibition Plus Dexamethasone Enhances the Efficacy of Convection Enhanced Delivery in H3.3K27M Mutant Diffuse Intrinsic Pontine Glioma - Eric M. Thompson

10:10 – 10:20

ZEB1-driven invasive mesenchymal transition at the single cell level promotes anti-angiogenic therapy resistance - Manish K. Aghi, MD

10:20 – 10:30

Using heterologous helper epitopes to enhance immune and antitumor responses of neoantigen vaccines - John H. Sampson, MD, PhD

10:30 – 10:40

Atypical teratoid rhabdoid tumor: The promise of novel genetically engineered models and high throughput drug screening - James T. Rutka, MD, PhD

10:40 – 10:50

A novel risk model to define the relative benefit of maximal extent of resection within prognostic groups in newly diagnosed glioblastoma - Mitchel S. Berger, MD, FACS

10:50 – 12:00 ABSTRACT SESSION: VASCULAR SCIENCE
MODERATOR: SEPIDEH AMIN-HANJANI

10:50-11:00

Imaging Structural and Biological Markers of Carotid Plaque Vulnerability with a New High-Resolution Multimodal Platform: Laser Angioscopy - Luis E Savastano, MD

11:00-11:10

Anti-Inflammatory Inhibition of Aneurysm Rupture: Is a Protective Cocktail Possible? - Michael T. Lawton, MD

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| 11:10-11:20 | Final ten-year analysis of saccular aneurysms in the Barrow Ruptured Aneurysm Trial (BRAT) - Robert F. Spetzler, MD |
| 11:20-11:30 | Status update on the ESCAPE-NA1 and FRONTIER Phase 3 trials - Michael Tymianski, MD PhD FRCS |
| 11:30-11:40 | Improved Outcomes of Combined Modality Management of Unruptured Intracranial Aneurysms: Lower Morbidity Alters Treatment Recommendations - Christopher S. Ogilvy, MD |
| 11:40-11:50 – Academy Award Honorable Mention Winner | Artificial Intelligence based Radiobiomarker Identification of EGFR Expression in Glioblastoma with High Memory Multi-stage Convolutional Neural Networks - Eric Karl Oermann, MD |
| 11:50-12:00 | Fatal Hemorrhage from Previously Undiagnosed AVMs in Pediatric Patients - R. Michael Scott, MD |
| 12:00 – 12:15 Break | |
| 12:00 – 12:05 - Special Lecture Introduction | Sanjay Gupta |
| 12:05 – 12:35 | Special Lecture - <i>Blue Zones - Longevity</i> David McLain |
| 1:30-4:30 | Academy Scholars Program Fred Barker, MD |

7:30 – 7:35 Welcome: Howard Riina, 2018 Scientific Program Chair

7:30 – 8:40 ABSTRACT SESSION: NEUROSCIENCE FRONTIERS
MODERATOR: ALEXANDRA GOLBY

7:35-7:45

Progressive improvements of hand motor function in quadriplegia with brain-computer interface - Ali R. Rezai, MD

7:45-7:55

Investigating Deep Brain Stimulation for Alzheimer's Disease - Andres M. Lozano, MD, PhD, FAANS, FRCS(C), FRSC

7:55-8:00

Mapping mathematical processing in the human brain using direction intracranial recordings - Bradley Charles Lega, MD

8:00-8:10

Continuous and dynamic mapping of the motor pathways during surgery of supratentorial brain tumors - Andreas Raabe, MD

8:10-8:20

Preoptic area cooling increases the sympathetic outflow to brown adipose tissue (BAT) and BAT thermogenesis. - Kim J. Burchiel, MD

8:20-8:30

Brain Network Dynamics in the Learning of a Brain-Computer Interface - Jeffrey G. Ojemann, MD

8:30-8:40

Multiplex Immunohistochemistry and Cytokine Microdialysis for Predictive Immune Therapy in Glioblastoma Patients - Edjah Kweku-Ebura Nduom, MD

8:40 – 9:20 – SPECIAL SESSION: POINT/COUNTERPOINT: GLOBAL NEUROSURGERY

8:40 – 8:45 Introduction - Jacques Morcos, MD

8:45 – 8:55 THE IMPACT OF AMERICAN NEUROSURGERY WORLDWIDE - William T. Couldwell, MD, PhD

8:55 – 9:05 NEUROSURGERY IN THE DEVELOPING WORLD: CHALLENGES, OPPORTUNITIES AND OBLIGATIONS - Robert Dempsey, MD

9:05 – 9:15 MEDICAL TOURISM - Allan Levi, MD

9:15 – 9:20 Discussion

9:20 – 9:30 | Break

9:30 – 10:20 ABSTRACT SESSION: SPINAL SCIENCE
MODERATOR: ANDREW JEA

9:30-9:35

Enhanced Recovery After Surgery (ERAS) decreases postoperative opioid use in elective spinal and peripheral nerve surgery – a single-institution, one-year study - Zarina S. Ali, MD

9:35-9:45

Spinal column shortening for secondary tethered cord syndrome associated with spinal dysraphism in children and young adults - Andrew H. Jea, MD

9:45-9:55

Direct employer-purchased Center of Excellence spinal care: Experience with Walmart, Lowe's, and McKesson - Jonathan R. Slotkin, MD

9:55-10:05

Addition of Fusion to Decompression is Associated with Superior 12-Month Disability Following Surgery for Grade 1 Degenerative Lumbar Spondylolisthesis - Praveen V. Mummaneni, MD

10:05-10:15

Novel Osteogenic Spinal Instrumentation in an Ovine Model - Eric Claude Leuthardt, MD

10:15-10:20

Unlocking the mechanisms of DBS: Establishing causality through non-regular stimulation patterns - Justin Hilliard, MD

10:20 – 11:45 ABSTRACT SESSION: CLINICAL TUMOR CARE
MODERATOR: COSTAS HADJIPANAYIS

10:20-10:30

OX40 Ligation in Brain Cancer Immunotherapy: A Missing Piece? - William T. Curry, Jr., MD

10:30-10:35

Mutation Status Impacts Survival Following Craniotomy in Lung Adenocarcinoma Patients - Marie Roguski, MD

10:35-10:45

Growth Rates of Untreated Vestibular Schwannomas - Douglas S. Kondziolka, MD

10:45-10:55

Correlation Of Intraoperative, Immediate Postop And 3 Month Postop Flair, T2, DWI And Enhanced MRI Volumes Of Gliomas With Tumor Biology And Patient Outcome. - Randy Lynn Jensen, MD, PhD

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| 10:55-11:05 | Predictors of Survival in Patients with Leptomeningeal Dissemination from Metastatic Melanoma - Ian E. McCutcheon, MD |
| 11:05-11:15 | Glioblastoma: Genetically heterogeneous but driven by common epigenetic mechanisms - Albert H. Kim, MD, PhD |
| 11:15-11:25 | Preoperative versus Post-Operative Stereotactic Radiosurgery for Resected Brain Metastases: Updated Analysis of a Novel Treatment Paradigm and Review of Current Evidence - Anthony L. Asher, MD, FAANS, FACS |
| 11:25-11:35 | Magnetic hyperthermia therapy of glioblastoma in combination with chemoradiation - Costas G. Hadjipanayis, MD, PhD |
| 11:35-11:45 | In Situ Bioprinting of Bone Tissue Constructs For Craniomaxillofacial Repair - Elias B. Rizk, MD |
| 11:45 – 12:00 Break | |
| 12:00 – 12:05 - Special Lecture Introduction | Daniel L. Barrow, MD |
| 12:05 – 12:40 | Special Lecture – <i>The Best Kept Secret in Professional Sports</i> Fran Tarkenton – Former NFL Quarterback |
| 12:40 – 12:45 - Presidential Introduction | Nelson Oyesiku, MD, PhD, Emory University, Atlanta, GA |
| 12:45 – 1:40 | Presidential Address - <i>A BRIEF HISTORY OF THE FUTURE</i> Daniel L. Barrow, MD |
| 1:40 – 5:00 | Academy Emerging Investigator Program |
| 1:40 – 2:00 - Introduction – (Zipfel, Church, Lonser, Korn) | |
| 2:00 – 5:00 - Meetings with Established Investigator Faculty | |

7:30 – 8:25 SPECIAL LECTURE: THE OLDFIELD LECTURESHIP

7:30 – 7:35 - Introduction

Daniel L. Barrow, MD

7:35 – 8:05 - Oldfield Lecture

Russel Lonser, MD

8:05 – 8:25 - NIH Funding Overview

Steve Korn

8:25 – 9:00

- ★ SPECIAL LECTURE: ACADEMY AWARD WINNER
- ★ AMERICAN ACADEMY YOUNG CLINICIAN INVESTIGATOR AWARD
- ★ AMERICAN ACADEMY RESEARCH FELLOWSHIP GRANT

8:25 – 8:40 – ACADEMY AWARD WINNER Pierpaolo Peruzzi, MD

The Functional Synergism of microRNA Clustering Provides Therapeutically Relevant Epigenetic Interference in Glioblastoma - Pierpaolo Peruzzi, MD, PhD

8:40 – 8:50 - ACADEMY YOUNG CLINICIAN INVESTIGATOR AWARD

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8:50 – 9:00 - ACADEMY RESEARCH FELLOWSHIP GRANT

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9:00 – 10:20 ABSTRACT SESSION: SELECT REPORTS

MODERATOR: DAVID OKONKWO

9:00-9:05

Interneuron Transplantation Creates New Network States and Rescues Social Behavior Deficits in a Mouse Model of Autism - Derek Southwell, MD

9:05-9:15

Point-of-Care Blood-Based Biomarker Testing for Traumatic Brain Injury Diagnosis - David O. Okonkwo, MD, PhD

9:15-9:20

Reversible von Willebrand Factor Inhibitor Demonstrates Effective Arterial Thromboprophylaxis Compared to Control - Shahid Mehdi Nimjee, MD, PhD

9:20-9:30

Rapid Fluctuations in Motor Symptoms Reveal Short-Timescale Neurophysiological Biomarkers of Parkinson's Disease - Wael F. Asaad, MD, PhD

9:30-9:40

Trigeminal Nerve Stimulation - A Novel Treatment Paradigm for Traumatic Brain Injury - Raj K. Narayan, MD

9:40-9:50

Impaired Cerebral Structural and Functional Connectivity in Post-Hemorrhagic Hydrocephalus of Prematurity - David Delmar Limbrick, Jr., MD, PhD

9:50-10:00

Factors within the nerve endoneurial microenvironment act to suppress tumorigenesis of MPNST - Rajiv Midha, MD, MS, FRCSC

10:00-10:10

The Role of Fibrinogen-Like Protein 2 on Immunosuppression and Malignant Progression in Glioma. - Ganesh Rao, MD

10:10-10:20

Retrospective GBM molecular profiling and transcriptional activity using ChRO-seq - Lawrence S. Chin, MD, FACS

10:20- 10:35 | Break

10:35 – 11:45 ABSTRACT SESSION: FUTURE DIRECTIONS
MODERATOR: MICHAEL McDERMOTT

10:35-10:40

Evidence of CNS Response to Pembrolizumab for Leptomeningeal Carcinomatosis at a Single Cell Resolution - Christopher Alvarez-Breckenridge, MD

10:40-10:50

Long-term outcomes of Parkinson's disease patients treated with deep brain stimulation - Gordon Hirsh Baltuch, MD, PhD

10:50-11:00

Delayed Thrombectomy in Patients Beyond 6 Hours: A New Frontier in Cerebrovascular Surgery - Mohammad Ali Aziz-Sultan, MD

11:00-11:05

Wnt Pathway - a Regulator of Neuronal-Network Remodeling in Temporal Lobe Epilepsy? Kunal Gupta, MB ChB PhD

11:05-11:15

Genome-wide Analysis in Inbred Mice Identifies Single Nucleotide Polymorphisms Associated with Cerebral Vasospasm and Neurological Outcome Following Subarachnoid Hemorrhage - Rose Du, MD, PhD

11:15-11:25

Comprehensive Anatomical Spinal Osteotomy and Anterior Column Realignment Classification - Juan Santiago Uribe, MD

11:25-11:30

Development and Validation of a DNA Methylome-Based Predictor of Meningioma Recurrence and Meningioma Recurrence Score - Farshad Nassiri, MD

11:30-11:35

Characterizing The Over-Expression of Yki/YAP/TAZ Transcription Factors in Gliomagenesis and Results of a Phase 0 Clinical Trial with Verteporfin Treatment in Recurrent Glioblastomas - Krish Vigneswaran, MD

11:35-11:45

A Novel endovascular stroke model: do new drugs fail in humans due to lack of adequate model? - Luis Fernando Gonzalez, MD

11:45

Closing Remarks Meeting Adjourn: Michael McDermott