Wednesday, March 6		
2:00–5:00 pm 3:00–5:00 pm	Executive Council Meeting Registration Opens	
Thursday, Ma	arch 7	
7:00 am	Registration, Continental Breakfast and Exhibit Viewing	
Session I	Sustainability: Sustaining a Career in Neurosurgery Moderators: A. Kim and P. Fecci	
7:30 am	Welcome	K. Riley, MD
7:40 am	Sustaining an Academic Career	J. Markert, MD, PhD
7:55 am	Sustaining a Career in Private Practice	A. Brown, MD
8:10 am	Sustaining Education in Neurosurgery	J. Osbun, MD
8:25 am	Discussion	
8:37 am	Sustaining Neurosurgery Globally	C. Bonfield, MD
8:49 am	Sustaining Women in Neurosurgery	B. Grunch, MD
9:01 am	Sustaining Innovation in Neurosurgery	E. Leuthardt, MD
9:13 am	Sustaining a Career through Adversity and Adapting	K. New, MD
9:28 am	Discussion	
9:40 am	Refreshment Break with Exhibitors	
Session II	Abstracts, Invited Talks, & Downing Lecture Moderators: E. Nottmeier, MD, V. Rossi, MD	
10:00 am	Abstracts & Discussion Part A	
10:00 am	Abstract 1: Combined Mastoidectomy and Middle Fossa Craniotomy for Tegmen Defect Repair: Long-term Outcomes of a Multidisciplinary Approach Kara A. Parikh, MD; Jordan Roach; Emal Lesha, MD; Jon H. Robertson, MD; and L. Madison Michael, MD	
10:06 am	Abstract 2: Critical Neighbors: Reading and Naming Representations in Ver Cortex Oscar Woolnough; Nitin Tandon	ntral Occipitotemporal
10:12 am	Abstract 3: Primary CNS Lymphoma in Elderly Patients: A Critical Investigat and Chemotherapy Outcomes in A Prospective, Comparative, Clinical Studenters M. Alvarez-Pinzon, MD, PhD; Maria P. Fernandez Gomez, MD; Pene MD; and Jose Valerio, MD, MBA	y

10:18 am	Discussion
10:22 am	Abstract 4: Remission Recipe for Prolactinomas: Mixing Dopamine, Gender, And A Dash of Scalpels (A Multicenter Production) Harshvardhan Iyer, M.B.B.S; Ogechukwu Ariwodo; Chase Mckevitt, D.O; Juan Medina Colon; Saurav Das; and Kaisorn Chaichana, M.D.
10:28 am	Abstract 5: McCravey Clinical Science Award Winner: Identifying Risk Factors for Adverse Surgical Outcomes Following Lumbar Disc Arthroplasty: A Multi-institutional Analysis Of 473 Patients James Mooney, MD; Karim Nathani, MBBS; Giorgos Michalopoulos, MD; Anil Mahavadi, MD; Rick Sasso, MD; Jonathan Parish, MD; Sheetal Vinayek; Ousman Jallow, BS Mia Mazer; Todd Lanman, MD; Hyun Bae, MD; Michael Kropf, MD; Jason Cuellar, MD; Patrick Johnson, MD; Mohamad Bydon, MD; and Corey Walker, MD
10:34 am	Abstract 6: Optimal Timing of Cervical Fracture Fixation After Trauma in The United States Christian Joel Quinones, MD and Darwin Ang, MDHCA
10:40 am	Discussion

10:45 am Invited Talk: "Navigated Prone / Lateral Spine Surgery"

P. Park, MD

10:57 am Abstracts & Discussion Part B

10:57 am	Abstract 7: Clopidogrel Is Associated with Reduced Likelihood of Aneurysmal Subarachnoid Hemorrhage: A Multi-center Matched Retrospective Analysis Brandon Lucke-Wold, MD, PhD
11:00 am	Abstract 8: Motor Outcomes Among Patients with Ballistic Neurologic Injuries Managed Expectantly: A 13-year Single Institution Retrospective Review Tyler X. Giles; Nicholas P. Derrico; Rebekah J. Kimball; Benjamin W. Carroll; Katherine E. Baker; Evan Bowen; John H. Wilkinson; Gregory R. Vance; Zachary S. Smalley; and Jared J. Marks
11:03 am	Abstract 9: Dysembryoplastic Neuroepithelial Tumor Outcomes After Surgical Resection, A Multicenter Mayo Clinic Experience Jesus Emiliano Sanchez-Garavito, MD; Harshvardhan Iyer; Ariwodo Ogechukwu, MD; Saurav Das, MD; Chase McKevitt, MD; Siddarth Chitta; Juan Pablo Navarro Garcia de Llano, MD; Alfredo Quinones-Hinojosa; and Sanjeet Grewal, MD
11:06 am	Abstract 10: Mechanisms Of BBB Permeability Changes Triggered by Laser Interstitial Thermal Therapy Ryan Cleary, MD ; Alicia Yang; Rowland Han, MD; Timothy Woodiwiss, MD; and Albert H. Kim, MD, PhD
11:09 am	Abstract 11: Predicting Anastomosis Occlusion in Moyamoya Disease: The Bypass Angiographic Scoring System (BASS) Jorge Rios Zermeno, MD; Iman Ahrari, MD; Jeyan S. Kumar, MD; and Rabih G. Tawk, MD

11:12 am	Discussion	
11:16 am	Abstract 12: Does Pelvic Incidence Incline Towards Adjacent Segment Disease in Standalone Lateral Lumbar Interbody Fusion? Bryan Clampitt, BS; Molly Monsour, BS; Richard Rivera, BS; Maryam Kazelka, BS; Samantha Schimmel, BS; Leila Azari, BS; John Kim, MS; Nicholas Alford, BS; Kelly Gassie, MD; Adolfo Viloria Hidalgo, MD; and Puya Alikhani, MD, FAANSUSF	
11:19 am	Abstract 13: Skull Base Registries: Building Consensus Kara A. Parikh, MD; Mustafa Motiwala, MD; Furlan A. Beer, MD; Dhruv S. Khotari, MD; Garret W. Choby, MD; Varun R. Kshettry, MD; Debraj Mukherjee, MD; Corinna G. Levine, MD, MPH; Donato R. Pacione, MD; Claudia Kirsch, MD; Erin McKean, MD; Sanjeet V. Rangarajan, MD; L. Madison Michael, MD; and Jeffrey M. Sorenson, MD	
11:22 am	Abstract 14: Parity in Functional Outcomes Following Laser Interstitial Thermal Therapy Versus Resection for Primary Motor Cortex Brain Metastases Aden P. Haskell-Mendoza, MS; Ethan S. Srinivasan, MD; Emily C. Lerner, MHS; Ann Marie Flusche, BS; Ariel T. Gonzalez, BS; Ellery Hepburn Reason, BS; Ryan Edwards, MD; Joshua D. Jackson, MD, PhD; David Huie, MD, MS; and Peter E. Fecci, MD, PhD	
11:25 am	Abstract 15: Probing Cerebral Metabolism Change With In Vivo Magnetic Resonance Spectroscopy After Experimental Traumatic Brain Injury Yujiao Lu, PhD; Asamoah Bosomtwi, PhD; Nicholas Moore; Abbas Jarrahi, MD; Roxan Ara; Fengchong Kong; John Vender, MD; Fernando Vale, MD; and Krishnan Dhandapani, PhD	
11:28 am	Abstract 16: Antigen Presentation by Tumor-Associated Macrophages Mediates Progenitor to Terminal Exhaustion Transition in GBM And Other Solid Tumors Jessica Waibl-Polania; Xanne Hoyt-MIggelbrink; Luke Wachsmuth; Selena Lorrey; Daniel Wilkinson; Emily Lerner; Karolina Woroniecka; Peter E. Fecci	
11:31 am	Discussion	
11:35 am 11:40 am	Introduction to Ned Downing Lecture Ned Downing Lecture P. Fecci, MD, Phl Haley Fortie	
12:05 pm	Adjourn	
12:15 – 1:15	Resident, Fellow, and Young Surgeon Workshop & Lunch	

Chairs: S. Pirris, MD

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THUAY, Maich C	Friday,	March	8
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Session III	Sustainability: Using Technology to Sustain Patient and Surgeon (CME + Non-CME Session) Moderators: W. Gump, MD, A. Patel, MD, G. Grant, MD	
7:30 am 7:30 am 7:38 am 7:46 am 7:54 am	VISUALIZE Visualize Networks: Applying Connectomics to Intracranial Surgery Novel uses of endoscopy for spinal decompression and motion preservation. Visualize the Tumor: 5-ALA (Non CME - Medexus) Visualization - Discussion	M. Sughrue, MD D. Bhowmick, MD R. D'Amico,MD
8:06 am 8:06 am 8:14 am 8:22 am 8:30 am	MINIMIZE Minimize Surgeon and Patient Exposures in the OR Minimize Surgical Exposure: Robotic Spine Surgery Minimize the Surgeon: Fully Autonomous Robots Minimize - Discussion	R. Isaacs, MD M. Abd-el-Barr, MD P. Codd, MD
8:42 am 8:42 am 8:50 am 8:58 am 9:06 am 9:14 am	ZAP Zap: Laser (LITT) and Nanotechnologies (Non-CME - Monteris) Zap: Ultrasonic Bone Aspiration Zap: Focused ultrasound Zap: Sonobiopsy – Using ultrasound to obtain molecular diagnoses Zap - Discussion	A. Kim, MD, PhD S. Pirris, MD S. Harward, MD, PhD E. Leuthardt, MD
9:30 am 9:35 am	Introduction to Presidential Address Presidential Address	N. Bentley, MD K. Riley, MD
10:05 am	Break with Exhibitors	
Session IV	Abstracts, Invited Talks, & Hudson Lecture Moderators: Steve Harward, Min Park	
10:35 am	Abstracts & Discussion Part A	
10:35 am	Abstract 17: Multi-center Prospective Cohort of Intractable Chronic Low Back Pa with Restorative Neurostimulation - Outcomes From 5-year Data Christopher Shaffrey, MD	in Patients Treated
10:41 am	Abstract 18: Radiographic Predictors of Spinal Column Instability After Gunshot Wounds: A Pragmatic Score Nicholas P. Derrico ; Tyler X. Giles; Benjamin W. Carroll; Katherine E. Baker; Evan Bowen; John Henley W. Wilkinson; Gregory R. Vance; Chad W. Washington; Zachary S. Smalley; and Jared J. Marks	
10:47 am	Abstract 19: Targeted Neuromodulation for Chronic Pain Via Patient-specific Lea Programming of a Motor Cortex Stimulator Andreas Seas, BS; Grace Futch, BS; Pranav I. Warman, BS; Vishal Venkatraman, N PA-C; Stephen Harward, MD PhD; and Shivanand P. Lad, MD PhD	

10:53 am	Discussion
10:57 am	Abstract 20: Comparative Analysis of Anterior Temporal Lobectomy Versus Laser Ablation for Temporal Lobe Epilepsy - Long Term Cognitive and Seizure Outcomes Ellery Wheeler; Kathryn Snyder; Oscar Woolnough; Yosefa Modiano; Nitin Tandon
11:03 am	Abstract 21: Implementing Regional Criteria for Neurosurgical Triage of Traumatic Brain Injury and Intracerebral Hemorrhage: Three Year Experience of a Large Tertiary Care Center Trent VanHorn, MD ; Daniel Zetouni, MD; and Joe Bernard, MD
11:09 am	Abstract 22: Is Screw Loosening an Issue with Facet Replacement in The Treatment of Degenerative Lumbar Spondylolisthesis. Results of a Randomized FDA Trial Stephen Pirris, MD; Domagoj Coric; William C. Welch; Ali Chahlavi; Mark Gerber; and Michael Steinmetz
11:15 am	Discussion

11:20 am Invited Talk: "A novel wearable ear-mounted vagal nerve stimulator for vasospasm in SAH"

E. Leuthardt, MD

11:32 am Abstracts & Discussion Part B

11:32 am	Abstract 23: Summary Findings of a Surgical Window-of-opportunity Clinical Trial Evaluating the Pcsk9 Inhibitor Evolocumab in Patients with Glioma Kirit Singh, MBBS; Matthew Foster, PhD; Kelly Hotchkiss, PhD; Chelsea Railton; Emily Blandford; David Ashley, MBBS, PhD; Annick Desjardins, MD; Henry Friedman, MD; Margaret O. Johnson, MD; Allan Friedman, MD; Allan Friedman, MD; Stephen Keir, PhD; James E. Herndon, PhD; John Sampson, MD, PhD; Chuan Yuan-Li, DSc; Anoop Patel, MD; Peter E. Fecci, MD, PhD; and Mustafa Khasraw, MD
11:35 am	Abstract 24: Risk of Kyphoplasty Failure in the Treatment of Cancer Associated Compression Fractures: A Retrospective Analysis. Bassel El Sayed, BS; Vishnu V. Iyer, BS; Samantha Schimmel, BA; Amber Valeri, DO; and Nam D. Tran, MD, PhD
11:38 am	Abstract 25: The Tipping Point in Middle Meningeal Artery Embolization: A Cost Effectiveness Analysis Luca Debs, MD; Scott Rahimi, MD; and Fernando Vale, MD
11:41 am	Abstract 26: Racial Disparities in Overall Survival for Newly Diagnosed IDH-Wildtype Glioblastoma Patients During the Covid Pandemic Stephen Garrett Whipple, MD; Sungho Lee, MD, PhD; and Charles Ronkon, MD
11:44 am	Discussion

11:48 am	Abstract 27: Metabolomic Profiling of Human Meningi Hashim S. Syed, MD; Mark Dougherty, MD; Jeremy Gre Hansen, MD	
11:51 am	Abstract 28: Combined Gpi+vim Deep Brain Stimulatio Disease Anshit Goyal, MBBS, MS; Nirea Martin Del-Campo; Lui:	
	Uitti, MD; Erik Middlebrooks, MD; and Sanjeet Grewal	
11:53 am	Abstract 29: Connectomics of Chronic Vim Vs Rescue \ Tremor	
	Vyshak Chandra, MD; Anna Fusco; Yusuf Mehkri; Joshu	ла Wong; Justin Hilliard; and Kelly Foote
11:56 am	Discussion	
12:00 pm	Washington Update	K. Orrico, J.
12:10 pm	Business Meeting	K.Riley, MD & C. Adamson, M
12:15 pm	Introduction to the Hudson Lecture	P. Fecci, MD, PhD & P. Grossi, M
12:20 pm	Hudson Lecture	J. Sampson, MD, Ph
12:55 pm	Adjourn	
Saturday, N Session V	Sustaining the Argument: Showdowns Moderators: M. Abd-el-Barr, MD (spine), C. David, MD (vascular/skull base), S. Blackburn, MD (vascular/skull base), N. Au Yong, MD (functional), D. Higgins, MD (tumor), H. Akbari, MD (peds)	
	(vascular/skull base), N. Au Yong, MD (functional), D. Hi	ggins, MD (tulliol), H. Akbull, MD (peus)
7:30 am	(vascular/skull base), N. Au Yong, MD (functional), D. Hi Tumor Showdown: "To Tile or Not to Tile: The Role of G	
7:30 am		
	Tumor Showdown: "To Tile or Not to Tile: The Role of G 7:30 "Tile the Tumor!" 7:35 "Save the Tile for the Bathroom Wall"	Gamma Tile in Brain Tumor Treatment" K. Hoang, MD C. Deibert, MD
7:30 am 7:48 am	Tumor Showdown: "To Tile or Not to Tile: The Role of Government of Tile the Tumor!" 7:35 "Save the Tile for the Bathroom Wall" 7:40 Debate Spine Showdown: "How Long is Your Fuse?: Elderly Pate	Gamma Tile in Brain Tumor Treatment" K. Hoang, MD C. Deibert, MD tient with Lumbar Kyphosis

8:30 am	8:12 "Don't Poke the Bear" 8:17 "Everyone Deserves a Treat!" 8:22 Debate Functional Showdown: "Probing the Depths: Neurostimulation for Epilepsy: Where Do We Go Beyond VNS?"	T. Lau, MD C. Ogilvy, MD
	8:30 "No Need to Respond – just DBS" 8:35 "Staying Responsive with RNS" 8:40 Debate	J. Gerrard, MD D. Southwell, MD
8:48 am	Skull-base Showdown: "Looking for an Angle: Unilateral vs. Bilateral Approach Olfactory Groove, and Tuberculum Meningiomas"	ch for Planum,
	8:48 "A One-sided Argument" 8:53 "Two Sides to Every Story" 8:58 Debate	A. Patel, MD T. Garzon-Muvdi, MD
9:06 am	Pediatrics Showdown: "Closing Time: Postnatal vs. Prenatal Myelomeningoc	ele Repair"
	9:06 "A Womb with a View" 9:11 "Awaiting Delivery" 9:16 Debate	J. Strahle, MD B. Rocque, MD
9:24 am 9:20 am	Introduction to Distinguished Practitioner Lecture Distinguished Practitioner Lecture	J. Wilson, MD D. Coric, MD
9:50 am	Final Refreshment Break with Exhibitors	
Session VI	Abstracts, Invited Talks, & Semmes Lecture Moderators: Ryan Jafrani, W. Gump	
10:10 am	Abstracts & Discussion Part A	
10:10 am	Abstract 30: McCravey Basic Science Award Winner: Impact Of Aspirin on D Formation and Rupture in Male Mice Compared to Female Mice Via the Effe Samantha Spellicy, MD, PhD; Basel Musmar; Kendall Reitz, BS; Jihad Abdelga Eduardo Chaparro, MD, PhD; Ali Zomorodi, MD; and David Hasan, MD	ect of 15-PGDH And EP
10:16 am	Abstract 31: Il12-secreting Car-t Cells Eradicate Heterogeneous Brain Tumor Spreading Via Local Antigen Presenting Cells Without Host Lymphodepletion Steven Hacohen Shen, Ph.D.; Aditya Mohan; Anoop Patel, MD	
10:22 am	Abstract 32: A Transcriptome-wide Association Study of Meningioma Using and Mendelian Randomization Robert J. Dambrino, MD, MPH; Phillip Lin, BA; Xavier Bledsoe, BA; Cambpell Chambless, MD; Reid C. Thompson, MD; and Eric R. Gamazon, PhD, MS	

10:28 am	Discussion
10:32 am	Abstract 33: Adropin Protects Against Subarachnoid Hemorrhage-associated Brain Injury Through Activation of Endothelial Nitric Oxide Synthase Brandon Lucke-Wold, MD, PhD
10:38 am	Abstract 34: Type I Interferon Signaling Within Glioblastoma Tumor Cells Promotes T Cell Exhaustion and Resistance to Checkpoint Inhibitors Joshua Jackson, MD, PhD; Xiuyu Cui, PhD; and Peter Fecci, MD, PhD
10:44 am	Abstract 35: Adoptive Lymphocyte Transfer Increases Intra-tumoral T Cell Counts During Lymphocytic Sequestration and Augments Immunostimulatory Therapy in The Cns of Mice with Established Glioma Kirit Singh, MBBS; Bhairavy Puviindran, MBBS; Shannon Wallace; Pamela Noldner; Ying Zhou; Mustafa Khasraw, MD; John Sampson, MD PhD; and Peter E. Fecci, MD PhD
10:50 am	Discussion

10:55 am Invited Talk: Window of Opportunity Trials in Neuro-Oncology

M. Vogelbaum, MD, PhD

11:07 am Abstracts & Discussion Part B

11:07 am	Abstract 36: Analysis of Penetrating Cerebrovascular Injuries with Computed Tomographic Angiography at a Singe Institution
	Tyler Warner, MD; Alec Clark, MD; Nicholas P. Derrico, MD; Tyler X. Giles, MD; Benjamin W. Carroll,
	MD; Katherine E. Baker, MD; Evan Bowan, MD; John Wilkinson, MD; Gregory Vance, MD; Zachary S.
11.10	Smalley, MD; and Jared J. Marks, MD
11:10 am	Abstract 37: Refractory Primary CNS T-cell Lymphomas: Evaluation of Stereotactic Radiosurgery as A
	Second Line Treatment Jose Valerio, MD, MBA ; Maria P. Fernandez Gomez, MD; Penelope Mantilla
	Farfan, MD; and Andres M. Alvarez-Pinzon, MD, PhD
11:13 am	Abstract 38: Approach, Complications, and Outcomes for 37 Consecutivepediatric Patients
	Undergoing Laser Ablation for Medically Refractory Epilepsy
	Gerald Grant, MD
11:16 am	Abstract 39: Awake Robotic Minimally invasive Transforaminal Lumbar Interbody Fusion Under Spinal
	Anesthesia: A Prospective Study With 1-year Follow-up
	Gaetano De Biase, MD; Oluwaseun Akinduro, MD; Ian Buchanan, MD; Elird Bojaxhi, MD; Shaun
	Gruenbaum, MD; Teodoro Forcht Dagi, MD, MPH; Alfredo Quinones-Hinojosa, MD; and Kingsley
	Abode-Iyamah, MD
11:19 am	Discussion
11:23 am	Abstract 40: Multicenter Study of Prolactinoma Patients with Prior Dopamine Agonist Therapy and
	Subsequent Transsphenoidal Surgery: Insights into Demographics, Treatment, And Outcomes
	Ogechukwu Ariwodo; Harshvardhan Iyer, M.B.B.S; Chase McKevitt; Saurav Das; Juan Medina Colon;
	and Kaisorn Chaichana, M.D.
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11:26 am	Abstract 41: Social Determinants and Adjuvant Radiotherapy After Resection of Atypical Meningioma Zvipo Mutsa Chisango ; Obiadada Ugochukwu; Xiaojie J. Zhi; Jim Zhong, MD; Bree Eaton, MD; Hui-Kuo Shu, MD PhD; Arman Jahangiri, MD PhD; David Bray, MD; and Kimberly Hoang, MD	
11:29 am	Abstract 42: Minimally Invasive Parafascicular Surgical Approaches Versus Traditional Techniques for Supratentorial Intraventricular Tumors Wade Pingel, B.A.; Gabrielle Gray, B.S.; Timothy Woodiwiss, M.D.; Juan Vivanco Suarez, MD; and Jeremy Greenlee, MD	
11:32 am	Abstract 43: Intracranial Tumors Elicit Systemic Sympathetic Hyperactivity That Limits Immunotherapeutic Responses Selena Lorrey; Luke Wachsmuth; Jessica Waibl-Polania; Alexandra Hoyt-Mlggelbrink; Xiuyu Cui; Emily Lerner; Daniel Wilkinson; Kyle Walsh; Quinn Ostrom; Peter E. Fecci, MD, PhD	
11:35 am	Discussion	
11:40 am	Introduction to the Semmes Lecture E. Leuthardt, MD	

11:40 am 11:45 am	Introduction to the Semmes Lecture Semmes Lecture	E. Leuthardt, MD D. Limbrick, MD
12:20 pm	Raffle Drawing & Closing Comments	
12:25 pm	Meeting Adjourns	