RICHARD LENDE
WINTER
NEUROSURGERY
CONFERENCE

February 2 – 6, 2018
CLIFF LODGE
SNOWBIRD, UTAH

Jointly Provided by the AANS
The original founders of this meeting included prominent neurosurgeons from around the country. This group included Chairs of Neurosurgery from Albany (Richard Lende), Minnesota (Shelley N. Chou), Utah (Ted Roberts), Washington (Arthur Ward), UC Irvine (Eldon Foltz), Chicago (Howard Reichman), and two Utah neurosurgeons Peter Heilbrun (who later became Chair at Utah) and Chester Powell. Unfortunately, Dr. Lende sustained a serious ankle fracture at that first meeting that later lead to his untimely death during a subsequent surgical procedure. With full support of Dr. Lende’s family, he became the namesake of this yearly neurosurgical meeting. From 1975 forward the meeting was sponsored by the University of Utah and carried the name of the Richard Lende Winter Neurosurgery Conference. The meeting became increasingly popular and had an international attendance. A second tragedy took place in 1987 when a frequent supporter of the meeting, Dr. David L. Kasdon died in a scuba diving accident. The following year a special lecture was named after Dr. Kasdon, with Dr. Vinko Dolenc serving as the inaugural named lecturer. Since that time many prominent neurosurgeons (the list is found in this program) have continued this tradition with Dr. James M. Markert serving as this year’s Kasdon lecturer.

Dr. Ted Roberts organized the first meeting and Dr. Peter Heilbrun served as the director for the next 10 years. In 1983, Dr. Robert Hood took over as organizer of the meeting for the next 22 years. I have organized it since 2005, at which time we have added a biannual Neuro Oncology Update at the Huntsman Cancer Institute the day before the beginning of the Snowbird meeting. Dr. Peter Heilbrun continued to be a major supporter of this meeting until his untimely death in October of 2010. Since that time a Saturday family dinner with accompanying non-neurosurgical lecture was instituted to honor his legacy of neurosurgical innovation and love of adventure. The meeting has changed over the years but continues to be an excellent outlet for discussion of relevant neurosurgical topics and scientific discovery.

Randy Jensen M.D., Ph.D.
DAVID L. KASDON

This and all Lende meetings since 1988 are dedicated to the memory of “Deel”, whose untimely passing shocked all of us who were privileged to know and love him. The void, which we feel, cannot be filled, for he was so much a part of the vitality of this unique yearly gathering. His ability to enjoy life, to make work seem like play, is truly the spirit embodied in the Lende meeting.

PAST KASDON LECTURERS

1988  VINKO V. DOLENC, M.D., Ph.D.
1989  BENNETT M. STEIN, M.D.
1990  JOHN M. JACOBS, M.D.
1992  MADJID SAMII, M.D.
1993  RUDOLF FAHLBUSCH, M.D.
1994  ROBERT F. SPETZLER, M.D.
1996  AXEL PERNECZKY, M.D.
1997  NICHOLAS de TRIBOLET, M.D.
1998  BERNARD GEORGE, M.D.
1999  M. PETER HEILBRUN, M.D.
2000  L. NELSON HOPKINS, M.D.
2001  PETER W. CARMEL, M.D.
2002  JAMES T. RUTKA, M.D., Ph.D.
2003  STEVEN L. GIANNOTTA, M.D.
2004  DAVID G. PIEPGRAS, M.D.
2005  EDWARD H. OLDFIELD, M.D.
2006  VOLKER K.H. SONNTAG, M.D.
2007  ROY A. PATCHELL, M.D.
2007  MICHAEL P. POWELL, M.D.
2008  WARREN R. SELMAN, M.D.
2009  MANFRED WESTPHAL, M.D.
2010  RONALD I. APFELBAUM, M.D.
2011  E. ANTONIO CHIOCCA, M.D.
2012  FREDRIC MEYER, M.D.
2013  CHRISTOPHER SHAFFREY, M.D.
2014  ROBERTO C. HEROS, M.D.
2015  TAKANORI FUKUSHIMA, M.D.
2016  KIM J. BURCHIEL, M.D.
2017  ROBERT H. ROSENWASSER, M.D.

THE 2018 KASDON LECTURER

JAMES M. MARKERT, M.D.

Jointly Provided by the AANS
“This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the AANS and Richard Lende Winter Neurosurgery Conference. The AANS is accredited by the ACCME to provide continuing medical education for physicians.”

The AANS designates this live activity for a maximum of 28.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANS JOINT PROVIDERSHIP DISCLAIMER**

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This will be a live presentation with interactive discussion and abstract presentations. The purpose of this meeting is to present unbiased presentations by medical professionals. The abstracts are related to current research and surgical procedures. Participants will have the opportunity to present abstracts in a friendly, casual environment.
2018 ANNUAL MEETING LEARNING OBJECTIVES

Upon completion of this CME activity, participants should be able to:

1. Distinguish the molecular biology of brain tumors and available clinical trials based on this knowledge.

2. Employ appropriate surgical and medical management of patients with oncological disease involving the spinal axis.

3. Modify participant understanding of management of patients with brain and spinal trauma.

4. Demonstrate an understanding of how current open surgical and endovascular techniques are applied to patients with neurovascular disease.

Future Meeting Dates

February 1st - February 5th, 2019
DISCLOSURES
The AANS and the Richard Lende Winter Neurosurgery Conference controls the content and production of this CME activity and attempts to ensure the presentation of balanced, objective information. In accordance with the Standards for Commercial Support established by the Accreditation Council for Continuing Medical Education (ACCME), faculty, abstract reviewers, paper presenters/authors, co-authors, planning committee members, staff and any others involved in planning the educational content and the significant others of those mentioned must disclose any relationships they or their co-authors have with commercial interests which may be related to their content. The ACCME defines “relevant financial relationships” as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

The following persons planned or contributed to the planning of this CME activity:
Randy L. Jensen, M.D., Ph.D., University of Utah School of Medicine, Salt Lake City, UT
William T. Couldwell, M.D., Ph.D., University of Utah School of Medicine, Salt Lake City, UT

FACULTY DISCLOSURE LISTING
Those who have disclosed a relationship* with commercial interests are listed below:

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Disclosure</th>
<th>Type of Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark Bilsky</td>
<td>Varian Medical, Brainlab, Globus Depuy/Johnson &amp; Johnson</td>
<td>Honorarium, Other Financial</td>
</tr>
<tr>
<td>Howard Colman</td>
<td>Huntsman Cancer Institute and Foundation, Newlink Genetics, Plexxikon, Kadmon, Orbus, Merck, DNATrix, AbbVie, Roche, Novocure, Foundation Medicine</td>
<td>University Grants/Research Support, Industry Grant Support, Consultant Fee, Honorarium</td>
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<tr>
<td>Jeffrey Florman</td>
<td>Stryker</td>
<td>Consultant Fee</td>
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<tr>
<td>Randy Jensen</td>
<td>Medtronic</td>
<td>Consultant Fee</td>
</tr>
<tr>
<td>James Markert</td>
<td>NIH, Gateway Foundation, Aettis, Inc., UAB, UABHSF, Catherex, Inc.</td>
<td>University Grants, Industry Grant Support, Stock or Shareholder, Scientific Advisor, Fiduciary Position</td>
</tr>
<tr>
<td>Henry Schroeder</td>
<td>Karl Storz GmbH &amp; Co. KG,</td>
<td>Consultant Fee, Stock or Shareholder, Fiduciary Position</td>
</tr>
<tr>
<td>Roger Stupp</td>
<td>AbbVie, Celgene</td>
<td>Consultant Fee, Stock or Shareholder, Honorarium, Speaker Bureau, Employee (Spouse), Fiduciary Position, Other Financial</td>
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<tr>
<td>Phil Taussky</td>
<td>Medtronic</td>
<td>Consultant Fee</td>
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*Relationship refers to receipt of royalties, consultanship, funding by research grant, receiving honoraria for educational services elsewhere, or any other relationship to a commercial interest that provides sufficient reason for disclosure.
Those who have reported they do not have any relationships with commercial interests:

Hussam Abou-Al-Shaar  
Gmaan Alzhrani  
Kenan Arnautovic  
Al-Wala Awad  
Jacqueline Bello  
Christian Bowers  
Andrea Brock  
Douglas Brockmeyer  
Peter Carmel  
Adam Cohen  
Michael Cohen  
Nicole Colwell  
William Couldwell  
Celina Crisman  
Jose Dominguez  
Lanette Dunbar  
Ilyas Eli  
Daniel Fults  
Yair Gozal  
Jian Guan  
Jonathan Harper  
Sheri Holman  
Evan Joyce  
Michael Karsy  
Michael Kim  
Robert Kim  
Bornali Kundu  
Vijay Ravindra  
Timothy Matthew Robinson  
Jonathan Scoville  
Aatman Shah  
Walavan Sivakumar  
Kris Smith  
Catherine Suen  
Patricia Tiburcio  
Christopher Winfree  
Juneyoung Yi
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**Stryker**
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Portage, MI  49002
269-323-7700
SOCIAL PROGRAM

FRIDAY  
February 2\textsuperscript{nd}  
7:00 pm - 8:30 pm  
Opening Reception, Ballroom I, Level B/Cliff

SATURDAY  
February 3\textsuperscript{rd}  
12:30 pm - 2:00 pm  
Family Ski Lunch in Golden Cliff, Level B/Cliff  
7:00 pm - 9:00 pm  
Heilbrun Lecturer with Family Dinner  
Ballroom I, Level B/Cliff

SUNDAY  
February 4\textsuperscript{th}  
9:00 am  
Physician’s Group Photo  
12:30 pm - 2:00 pm  
Family Ski Lunch in Golden Cliff, Level B/Cliff

MONDAY  
February 5\textsuperscript{th}  
12:30 pm - 2:00 pm  
Family Ski Lunch in Golden Cliff, Level B/Cliff  
7:30 pm - 9:00 pm  
Closing Family Reception, Atrium Level B/Cliff

TUESDAY  
February 6\textsuperscript{th}  
12:30 pm - 2:00 pm  
Family Ski Lunch in Golden Cliff, Level B/Cliff

Locations for Events:

- Lende Meeting Registered Participant’s Breakfast (7:00 am - 8:30 am)  
  Ballroom II, Level B/Cliff
- Lende Sessions Begin @ 8:00 am  
  Ballroom I, Level B/Cliff
- Exhibitors  
  Ballroom II, Level B/Cliff
- Opening Family Reception  
  Ballroom I, Level B/Cliff
- Family Ski Lunches  
  Golden Cliff, Level B/Cliff
- Heilbrun Lecturer/Family Dinner  
  Ballroom I, Level B/Cliff
- Closing Family Reception  
  Atrium Level B/Cliff
HUNTSMAN RESEARCH SOUTH CONFERENCE ROOM

12:30 pm  Welcome
Randy Jensen M.D., Ph.D.

12:35 pm  Brain Tumor Clinical Trials
Howard Colman M.D. Ph.D.

12:55 pm  Questions

1:00 pm  Oncolytic HSV virotherapy for Glioma
James Markert M.D. Ph.D.

1:40 pm  Questions

1:45 pm  IDH-1 Mutation in Gliomagenesis
Sheri Holmen Ph.D.

2:05 pm  Questions

2:10 pm  Management of glioma – standard of care and beyond
Roger Stupp M.D.

2:50 pm  Questions

2:55 pm  HCI Brain Tumor Trials--RAMBO and D-TERMINED
Adam Cohen M.D.

3:15 pm  Questions

3:30 pm  BREAK

3:30 pm  Separation Surgery and adjuvant stereotactic radiosurgery in the treatment of spine metastases: Why less is more.
Mark Bilsky M.D.

4:10 pm  Questions

4:15 pm  Clinical Trails and Image Analysis for Intraoperative MR
Randy Jensen M.D. Ph.D.

4:35 pm  Questions

4:40 pm  Endoscopic Endonasal Skull Base Tumor Surgery
Henry Schroeder M.D.
5:20 pm Questions
5:25 pm Questions and Closing remarks
Randy Jensen, M.D., Ph.D.
5:30 pm Adjourn

INVITED FACULTY

Mark Bilsky, M.D.
Professor of Neurological Surgery
Weill Medical College of Cornell University,
Memorial Sloan-Kettering Cancer Center

James Markert, M.D., Ph.D.
Professor and James Garber Galbraith Endowed Chair of Neurosurgery
University of Alabama

Henry Schroeder, M.D., Ph.D.
Professor and Chairman of Neurological Surgery
University Medicine Greifswald, Germany

Roger Stupp, M.D.
Professor of Neurological Surgery
Northwestern University

HUNTSMAN CANCER INSTITUTE LOCAL FACULTY

Adam Cohen, M.D., M.S.
Assistant Professor of Medical Oncology

Howard Colman, M.D., Ph.D.
Professor of Neurosurgery and Medical Oncology

Sheri Holmen, Ph.D.
Associate Professor of Surgery and Oncological Sciences

Randy Jensen, M.D., Ph.D.
Professor of Neurological Surgery, Oncological Sciences and Radiation Oncology
RICHARD LENDE PROGRAM — SNOWBIRD
SATURDAY MORNING

TUMOR

8:00-8:20 am An Analysis of Intraoperative MRI Imaging Tumor Volumes Compared with Immediate and 3 Month Postoperative Volumes Correlated with Glioma Tumor Biology and Patient Outcome. RANDY L. JENSEN, M.D., Ph.D., Salt Lake City, UT
Randy Jensen

8:20-8:25 am Discussion

8:25-8:45 am Prognostic Role of Mitochondrial Pyruvate Carrier in Isocitrate Dehydrogenase–Mutant Glioma. MICHAEL KARSY, M.D., Salt Lake City, UT
Michael Karsy, Jian Guan, L. Eric Huang

8:45-8:50 am Discussion

8:50-9:10 am Hypertonic Saline Versus Mannitol: A Characterization and Comparison of Measured Characteristic. JONATHAN PERRY SCOVILLE, M.D., Salt Lake City, UT
Jonathan Scoville, Greg Hawryluk

9:10-9:15 am Discussion

9:15- 9:35 am Hereditary Predisposition to Medulloblastoma - Results of an International Genome Sequencing Project. DANIEL W. FULTS, M.D., Salt Lake City, UT
Dan Fults

9:35-9:40 am Discussion

9:40-10:00 am Technical Nuances in Removal of a Subependymoma and Colloid Cyst via the Transcallosal Interforniceal Approach: Dual Pathology in the Intraventricular System Causing Obstructive Hydrocephalus. CELINA M. CRISMAN, M.D., Salt Lake City, UT
Celina M. Crisman, Elena Solli, James K. Liu

10:00-10:05 am Discussion

10:05-10:25 am Costs and Lessons Learned in Implementing a Minimally Invasive Trans-Sulcal Approach. MICHAEL KIM, M.D., Valhalla, NY
Michael Kim, Christian Bowers, Justin Santarelli, Chirag Gandhi, Meic Schmidt

10:25-10:30 am Discussion
10:30-11:00 am  **KASDON LECTURER**  
Immunotherapy for Glioma.  
**JAMES M. MARKERT, M.D., Birmingham, AL**  
James Markert

11:00-11:05 am  Discussion

11:05 am  Adjourn

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**SATURDAY AFTERNOON**

**TUMOR**

4:00-4:15 pm  Synergistic Meningioma Treatment with PARP Inhibitors, Temozolomide and Radiotherapy.  
**JONATHAN HARPER, Salt Lake City, UT**  
Jonathan Harper; Michael Karsy, David Gillespie, Randy Jensen

4:15-4:20 pm  Discussion

4:20-4:40 pm  IDH1 Mutation Drives Tumor Initiation in an RCAS Glioma Model.  
**HOWARD COLMAN, M.D., Ph.D., Salt Lake City, UT**  
Howard Colman, Sheri Holman

4:40-4:45 pm  Discussion

4:45-5:05 pm  Functional Requirement of a Wild-Type Allele for Mutant IDH1 to Suppress Anchorage-Independent Growth Through Redox Homeostasis.  
**PATRICIA D.B. TIBURCIO, Ph.D., Salt Lake City, UT**  
Patricia D. B. Tiburcio, Hai Yan, L. Eric Huang

5:05-5:10 pm  Discussion

5:10-5:30 pm  Brachytherapy Seeds and Ketogenic Diet: A Better up-front Treatment for GBMs?  
**KRIS A. SMITH, M.D., Phoenix, AZ**  
Kris A. Smith

5:30-5:35 pm  Discussion

5:35-6:05 pm  From Temozolomide to Tumor Treating Fields, from Immunohistochemistry NGS. Clinical and Translational Research in Glioma.  
**ROGER STUPP, M.D., Chicago, IL**  
Roger Stupp

6:05-6:10 pm  Discussion
SUNDAY MORNING

TUMOR/SKULL BASE

8:00-8:20 am Outcomes of Decompressive Surgery for Cavernous Sinus Meningiomas: An Effective Management Strategy.
YAIR GOZAL, M.D., Salt Lake City, UT
Gozal YM, Alzhrani G, Azab MA, Abou-Al-Shaar H, Walsh MT, Couldwell WT

8:20-8:25 am Discussion

8:25-8:45 am Extended Pericranial Flap for Anterolateral Skull Base Reconstruction.
MICHAEL COHEN, M.D., Newark, NJ
Michael Cohen, Nitesh Patel, James Liu

8:45-8:50 am Discussion

8:50-9:10 am Increasing Neuronavigation Accuracy through a Novel Tooth-Based Registration Technique.
MICHAEL COHEN, M.D., Newark, NJ
Michael Cohen, Alexander Evins, Philip Steig, Antonio Bernardo

9:10-9:15 am Discussion

9:15-9:35 am The Occipitoatlantal Capsular Ligaments are the Primary Stabilizers of the Occipitoatlantal Joint in the Craniocervical Junction: A Finite Element Analysis.
DOUGLAS L. BROCKMEYER, M.D., Salt Lake City, UT
Rinchen Phuntsok, Michael Herron, Chase W Provost, Benjamin J Ellis, Andrew T. Dailey, Douglas L. Brockmeyer

9:35-9:40 am Discussion

9:40-10:00 am Extreme Lateral Transodontoid (ELTO) Approach to the Ventral Craniocervical Junction (CCJ).
GMANN ALZHRANI, M.D., Salt Lake City, UT
Gmaan Alzhrani, Yair M. Gozal, Ilyas Eli, Walavan Sivakumar, Amol Raheja, , Douglas L. Brockmeyer, William T. Couldwell
10:00-10:05 am  Discussion
**WALAVAN SIVAKUMAR, M.D., Santa Monica, CA**
10:25-10:30 am  Discussion
10:30-11:00 am  Management of Craniopharyngioma.
**HENRY SCHROEDER, M.D. Ph.D., Greifswald, Germany**
Henry Schroeder
11:00-11:05 am  Discussion
11:05 am  Adjourn

**SUNDAY AFTERNOON**

**TUMOR**

4:00-4:20 pm  Monitored Anesthesia Care for Pipeline Embolization of Posterior Circulation Pathology: Technical Note from a Single Center.
**VIJAY M. RAVINDRA, M.D., Salt Lake City, UT**
Vijay Ravindra, Julius Griaudze, Jonathan Scoville, Craig Kilburg, William Couldwell, Phillip Taussky
4:20-4:30 pm  Discussion
4:30-7:00 pm  Neurosurgical Jeopardy.
MONDAY MORNING

SPINE/PERIPHERAL NERVE

8:00-8:20 am  Preliminary Return to Work Data from the Multi-Center Prospective, Randomized CSM-S Study: Approach Matters.
JIAN GUAN, M.D., Salt Lake City, UT

8:20-8:25 am  Discussion

8:25-8:45 am  Impact of Resident Participation on Outcomes After Single-Level Anterior Cervical Diskectomy and Fusion: An Analysis of 3265 Patients from the American College of Surgeons National Surgical Quality Improvement Program Database.
ROBERT KIM, M.D., Salt Lake City, UT
Robert Kim

8:45-8:50 am  Discussion

8:50-9:10 am  Impact of Mindfulness-Based Stress Reduction (MBSR) on Postoperative Patient Reported Pain, Disability, Quality of Life, and Prescription Opioid use in Adult Degenerative Lumbar Surgery Patients: A Pilot Study.
JUNEYOUNG YI, M.D, MSPH, Salt Lake City, UT
Juneyoung Yi, Christina Porucznik, Lisa Gren, Jian Guan, Andrew Dailey, Mark Mahan, Robert Hood, Darrel Brodke, Brandon Lawrence, William Spiker, Nicholas Spina, Erica Bisson

9:10-9:15 am  Discussion

9:15-9:35 am  Spinal Cord Tumors: Personal Experience over 14 years.
KENAN ARNAUTOVIC, M.D., Memphis, TN
Kenan Arnautovic

9:35-9:40 am  Discussion

9:40-10:00 am  A clinical and Radiographic Score to Assess Malignant Potential in Peripheral Nerve Sheath Tumor.
CHRISTOPHER WINFREE, M.D., F.A.A.N.S., New York, NY
Jonathan Yun, Justin Neira
10:00-10:05 am Discussion

10:00-10:20 am Spinal Cord Injury in the Intermountain Region: A Geographic Cohort Study Utilizing the National Inpatient Sample.
**NICOLE COLWELL, M.D., Salt Lake City, UT**
Nicole A. Colwell, Brandon Sherrod, Michael Karsy, Jian Guan, Andrea A Brock, Ilyas Eli, Erica F. Bisson, Andrew T. Dailey

10:20-10:25 am Discussion

10:25-10:45 am Human Neuromas: An Immunohistochemical Study.
**HUSSAM ABOU-AL-SHAAR, M.D., Salt Lake City, UT**
Hussam Abou-Al-Shaar, Michael Karsy, Cheryl Palmer, Mark Mahan

10:45-11:05 am Discussion

11:05 am Adjourn

**MONDAY AFTERNOON**

**SPINE/PERIPHERAL NERVE**

4:00-4:20 pm Selective Neurotomy for Spasticity: A Single Center Experience.
**ILYAS ELI, M.D., Salt Lake City, UT**
Ilyas Eli, Hussam Abou-Al-Shaar, Mark Mahan

4:20-4:25 pm Discussion

4:25-4:45 pm Independent Risk Factors Associated with Longer Hospital Stays in Patients Undergoing Primary Lumbar Spine Surgery.
**CHRISTIAN BOWERS, M.D., Valhalla, NY**
Jose Dominguez, Piyush Kalakoti, Meic Schmidt, Kaisen Yao, Nam K. Lee, Chad Cole, Chirag Ghandi, Justin Santarelli, Christian Bowers

4:45-4:50 pm Discussion

4:50-5:10 pm Analysis of Anterior Cervical Discectomy and Fusion (ACDF) and Lumbar Interbody Fusion Healthcare Costs via the Value-Driven Outcomes Database.
**MICHAEL KARSY, M.D., Salt Lake City, UT**
Spencer Twitchell, Michael Karsy, Jared Reese, Jian Gian, William T. Couldwell, Andrew Dailey, Erica F. Bisson

5:10-5:15 pm Discussion

5:15-5:35 pm Modified Frailty Index as a Predictor of Mortality in Intracerebral Hemorrhage.
**MICHAEL KIM, M.D., Valhalla, NY**
Michael Kim, Nam Lee, Justin Santarelli, Chirag Gandhi, Christian Bowers
5:35-5:40 pm  Discussion
5:40-6:00 pm  A Cost Analysis of using Stereotactic Neuronavigation and Neuroendoscopy for Placement of Ommaya Reservoirs.  
**JOSE DOMINGUEZ, M.D., Valhalla, NY**  
Arthur Wang, John V Wainwright, Jose Dominguez, Meic Schmidt, Christian Bowers

6:00-6:05 pm  Discussion
**HUSSAM ABOU-AL-SHAAR, M.D., Salt Lake City, UT**  
Hussam Abou-Al-Shaar, Mohammed A. Azab, Michael Karsy, Jian Guan, William T. Couldwell, Randy L. Jensen

6:25-6:30 pm  Discussion
6:30-6:50 pm  Physician Survey: TBI Care Thresholds.  
**CATHERINE G. SUEN, Salt Lake City, UT**  
Catherine G. Suen, Gregory W.J. Hawryluk

6:50 pm  Adjourn
7:30 pm  Closing Family Reception, Atrium

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**TUESDAY MORNING**

**GENERAL NEUROSURGERY**

8:00-8:20 am  Attitudes and Opinions of US Neurosurgical Residents towards Research and Scholarship: A National Survey.  
**MICHAEL KARSY, M.D., Salt Lake City, UT**  
Michael Karsy, Fraser Henderson Jr., Steven Tenny, Jian Guan, Jeremy W. Amps, Allan H. Friedman, Alejandro Spiotta, Sunil Patel, John R. Kestle, Randy L. Jensen, William T. Couldwell

8:20-8:25 am  Discussion
8:25-8:45 am  From Dandy to Uganda: The Punctuated History of Endoscopic Third Ventriculostomy.  
**EVAN JOYCE, MD, MS, Salt Lake City, UT**  
Evan Joyce, Vijay Ravindra, John Kestle

8:45-8:50 am  Discussion
8:50-9:10 am  Repair of Anterior Spinal Dural Defects Using Autologous Morselized Fat Graft.  
**AL-WALA AWAD, M.D., Salt Lake City, UT**  
Al-Wala Awad, Richard Schmidt
9:10-9:15 am  Discussion
9:15-9:35 am  Gadolium Deposition: What we Know, What we don’t Know, and Where We Need To Go.  
JACQUELINE BELLO, M.D., New York, NY
Jacqueline Bello
9:35-9:40 am  Discussion
9:40-10:05 am  The Founding of the NYU Neurosurgical Department.  
PETER W. CARMEL, M.D., Newark, NJ
Peter Carmel
10:05-10:10 am  Discussion
10:10-10:30 am  Functional Targeting for Deep Brain Stimulation in Movement Disorders.  
ANDREA BROCK, M.D., Salt Lake City, UT
Andrea A. Brock, Johannes Vorwerk, Gordon Duffley, Andrew Janson, Christopher R. Butson
10:30-10:35 am  Discussion
10:35-10:55 am  Are Spreading depolarizations Connected to Transient Aphasia in subdural hematoma patients?  
BORNALI KUNDU, M.D., Salt Lake City, UT
Bornali Kundu, Lee Chung, Ryan Carlson, K.C. Brennan, John D. Rolston
10:55-11:00 am  Discussion
11:00 am  Adjourn

TUESDAY AFTERNOON

TRAUMA/VASCULAR NEUROSURGERY

4:00-4:20 pm  Protein Phosphatase 2A Inhibition Enhances Radiation Sensitivity and Reduces Tumor Growth in Chordoma.  
NICOLE COLWELL, M.D., Salt Lake City, UT
Shuyu Hao, Hua Song, Wei Zhang, Ashlee Seldomridge, Jinkyu Jung, Amber J. Giles, Marsha-Kay Hutchinson, Xiaoyu Cao, Nicole A. Colwell, Adrian Lita, Mioara Larion, Dragan Maric, Mones Abu-Asab, Martha Quezado, Tamalee Kramp, Kevin Camphausen, Zhengping Zhuang1, Mark R. Gilbert, Deric M. Park
4:20-4:25 pm  Discussion
4:25-4:45 pm  Mild Traumatic Brain Injury in Patients on Warfarin for Atrial Fibrillation.
JEFFERY FLORMAN, M.D., Portland, Maine
Florman J, Rughani A, Grindlinger G, Ackerman A, Hicks A, Hess K

4:45-4:50 pm  Discussion

4:50-5:10 pm  Preoperative Embolization of Skull Base Meningiomas.
AATMAN SHAH, M.D., Salt Lake City, UT
Aatman Shah, Phil Taussky, William Couldwell

5:10-5:15 pm  Discussion

5:15-5:35 pm  Surgical Revascularization for Moyamoya Disease/Syndrome in a Central Texas Cohort: Demographics, Methods, and Short-Term Results.
T. MATTHEW ROBINSON M.D, Temple, TX
T. Matthew Robinson, Ethan A Benardete

5:35-5:40 pm  Discussion

5:40-6:00 pm  Interhospital Stabilization Protocol for Hemorrhagic Stroke.
ROBERT ECKER, M.D., Scarborough, ME
Robert Ecker

6:05-6:10 pm  Discussion

6:10-6:30 pm  Skill Acquisition and Expert Performance in Endovascular Neurosurgery.
PHILIPP TAUSSKY, M. D., Salt Lake City, UT
Nam K. Yoon, Jonathan P. Scoville, Philipp Taussky

6:30-6:35 pm  Discussion

MICHAEL KARZY, M.D., Salt Lake City, UT
Spencer Twitchell, Hussam Abou-Al-Shaar, Jared Reese, Michael Karsy, Ilyas Eli, Jian Guan, MD, Philipp Taussky, William T. Couldwell

6:55-7:00 pm  Discussion

7:00 pm  Business Meeting

7:15 pm  Meeting Adjourn

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