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- Benign Brain Tumors
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- Neurotrauma
- Neurocritical Care
- Pain Management
- Craniofacial & Cranioplasty
- Peripheral Nerve
- Pediatric Neurosurgery
- Pediatric Cerebrovascular Surgery
- General Neurosurgery

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  Official Twitter feed of the *Journal of Neurosurgery (JNS)*

- **@neurosurger**  
  Legislative, advocacy and policy-related news from the Washington, D.C. Office

- [facebook.com/AANSneuro](http://facebook.com/AANSneuro)  
- [youtube.com/AANSneurosurgery](http://youtube.com/AANSneurosurgery)
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<tr>
<td>10 a.m.-6 p.m.</td>
<td>AANS Badge Pick-up</td>
<td>Studio 3 Foyer, Level 3; JW Marriott</td>
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<td>5-7 p.m.</td>
<td>AANS Registration</td>
<td>South Lobby</td>
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<td><strong>SATURDAY, APRIL 22</strong></td>
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<tr>
<td>6:30 a.m.-5 p.m.</td>
<td>Speaker Ready Room</td>
<td>409A</td>
</tr>
<tr>
<td>6:30 a.m.-5:30 p.m.</td>
<td>AANS Registration</td>
<td>South Lobby</td>
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<tr>
<td>8 a.m.-6 p.m.</td>
<td>AANS Badge Pick-up</td>
<td>Studio 3 Foyer, Level 3; JW Marriott</td>
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<tr>
<td>8 a.m.-5 p.m.</td>
<td>All-day Practical Clinics</td>
<td>(001-003)</td>
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<tr>
<td>8 a.m.-5 p.m.</td>
<td>International Symposium</td>
<td>502AB</td>
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<tr>
<td>8 a.m.-12 p.m.</td>
<td>Morning Practical Clinics</td>
<td>(004-009)</td>
</tr>
<tr>
<td>1-4 p.m.</td>
<td>Neurosurgeon-scientist Career Development Course</td>
<td>309</td>
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<tr>
<td>1-5 p.m.</td>
<td>Afternoon Practical Clinics</td>
<td>(010-016)</td>
</tr>
<tr>
<td>1-5 p.m.</td>
<td>Leadership Development Course — Mid Career</td>
<td><em>Non-CME Event</em></td>
</tr>
<tr>
<td>6-8 p.m.</td>
<td>Dinner Symposium: Advanced Practice Providers (APPs): Preventive Care – Planning Strategies for Your Long Term Retirement Goals</td>
<td><em>Non-CME Event</em></td>
</tr>
<tr>
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<td>Triple 8 China Bar and Grill</td>
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</table>
SUNDAY, APRIL 23

6:30 a.m.-5 p.m. Speaker Ready Room 409A

6:30 a.m.-6:30 p.m. AANS Registration South Lobby

7 a.m.-4:30 p.m. Society of Neurological Surgeons (SNS) Chief Resident Course 407

7:30 a.m.-4:30 p.m. All-Day Practical Clinics (017-019)

7:30 a.m.-4:30 p.m. International Symposium 502AB

7:30 a.m.-4:30 p.m. Advanced Practice Providers Plenary Session 404AB

7:30-11:30 a.m. Morning Practical Clinics (020-027)

8 a.m.-8 p.m. AANS Badge Pick-up Studio 3 Foyer, Level 3; JW Marriott

12:30-4:30 p.m. Afternoon Practical Clinics (028-035)

12:30-4:30 p.m. Leadership Development Course — Senior Resident Non-CME Event 309

1-4:30 p.m. Young Neurosurgeons Research Forum Osler Lecture Roberto C. Heros, MD, FAANS(L) 411
WEEK-AT-A-GLANCE

5-6:30 p.m.  AANS Opening Ceremonies
            Exhibit Hall K
            Paul Farmer, MD, PhD
            Michael M. Haglund, MD, PhD, FAANS, FAC (ECSA)
            Walter D. Johnson, MD, FAANS(L)
            Vanessa Kerry, MD, MSc
            Moderator: Sanjay K. Gupta, MD, FAANS

7-9 p.m.    AANS Opening Reception
            Microsoft Square at L.A. LIVE

MONDAY, APRIL 24

6:30 a.m.–4 p.m.  AANS Registration
                  South Lobby

6:30 a.m.–5 p.m.  Speaker Ready Room
                  409A

7-9 a.m.    Breakfast Seminars
            (101-120)

9 a.m.-4:15 p.m.  AANS Exhibit Hall and Learning Center
                  Exhibit Hall GHJ

9-9:45 a.m.  Morning Beverage Break in the AANS Exhibit Hall
             Exhibit Hall GHJ

9:35 a.m.-1 p.m.  Plenary Session I
                  Exhibit Hall K
                  *Historical Film — The History of Hollywood
                  Non-CME Event
                  *Hunt-Wilson Lecture
                  Salman Khan
                  *Non-CME Event
                  *Theodore Kurze Lecture
                  David B. Agus, MD
                  Distinguished Service Award
                  Volker K. H. Sonntag, MD, FAANS(L)
AANS Cushing Award for Technical Excellence and Innovation in Neurosurgery
Fady T. Charbel, MD, FAANS

AANS Presidential Address
Frederick A. Boop, MD, FAANS

1-2 p.m.  Lunch in the AANS Exhibit Hall
Exhibit Hall GHJ

1:10-1:55 p.m.  Lunch-and-learn Seminars
Non-CME Events

1:10-2 p.m.  Neurosurgery “In Press”: Latest Results of Clinical Trials in Neurosurgery and Allied Fields
501BC

1:15-2:45 p.m.  Advanced Practice Providers (APPs) Luncheon
Platinum Ballroom Salon AB; JW Marriott

2-3:30 p.m.  Operative Nuances I: Handling Difficult Intraoperative Moments 3-D Video Presentation
152/153

2-5:30 p.m.  Scientific Sessions I-VII
Scientific Session I: Tumor 408AB
Scientific Session II: Spine 403AB
Scientific Session III: Stereotactic and Functional Surgery 406AB
Scientific Session IV: Pediatrics 404AB
Scientific Session V: Cerebrovascular 502AB
Scientific Session VI: Neurotrauma and Critical Care 411
Scientific Session VII: AANS/CSNS Socioeconomic 402AB
Afternoon Beverage Break in the AANS Exhibit Hall Exhibit Hall GHJ

Joint Annual Business Meeting of the American Association of Neurological Surgeons (AANS) and the American Association of Neurosurgeons (ANN)

Dinner Symposium: Novel Techniques and Strategies to Treat Spine Disease in the Aging Population
Drago Centro

Dinner Symposium: Surgical Microscopy: New Techniques and Technologies
Fleming’s

Dinner Symposium: Advanced Practice Providers (APPs): Advances in Wound Closure: Improving Patient Outcomes with New Products and Techniques
Rosa Mexicana

NREF Donor Reception
Olympic 3 Ballroom; JW Marriott
By invitation only

AANS Section on the History of Neurological Surgery Annual Dinner
Cicada Restaurant and Club

AANS International Reception
GRAMMY Museum and Target Terrace

TUESDAY, APRIL 25

AANS Registration
South Lobby

Speaker Ready Room
409A

Breakfast Seminars
[201-220]

AANS Exhibit Hall and Learning Center
Exhibit Hall GHJ
WEEK-AT-A-GLANCE

9-9:45 a.m.  Morning Beverage Break in the AANS Exhibit Hall
             Exhibit Hall GHJ

9:35 a.m.-1 p.m. Plenary Session II
                 Exhibit Hall K
                 *Historical Film — Neurosurgeons in the Movies*
                 Non-CME Event
                 *Richard C. Schneider Lecture*
                 Kevin J. Tracey, MD
                 *Cushing Medalist*
                 Robert F. Spetzler, MD, FAANS
                 *Cushing Orator*
                 Meg Whitman
                 Non-CME Event

1-2 p.m.  Lunch in the AANS Exhibit Hall
           Exhibit Hall GHJ

1:10-1:55 p.m. Lunch-and-learn Seminars
               Non-CME Events

1:15-2:45 p.m. Young Neurosurgeons Luncheon
                Platinum Ballroom Salon FGH; JW Marriott

2-3:30 p.m.  Operative Nuances II: How to Stay Out of Trouble During Microsurgery 3-D Video Presentation
              152/153

2-5:30 p.m.  Section Sessions
              AANS/CNS Section on Disorders of the Spine and Peripheral Nerves — Spine Section Session
              403AB
              AANS/CNS Section on Pain
              406AB
              AANS/CNS Section on Pediatric Neurological Surgery
              404AB
              AANS/CNS Section on Tumors I
              408AB
              AANS Section on the History of Neurological Surgery
              402AB
WEEK-AT-A-GLANCE

2-5:30 p.m.  Advancements in Neurotrauma Care  
             501BC

3:30-4 p.m.  Afternoon Beverage Break in the 
             AANS Exhibit Hall  
             Exhibit Hall GHJ

6:30-8:30 p.m.  Dinner Symposium: Career 
                Advancement to Health System 
                Leadership  
                The Palm

                Dinner Symposium: New Solutions 
                for Aneurysm Treatment  
                Faith & Flower

WEDNESDAY, APRIL 26

6:30 a.m.-3:30 p.m.  AANS Registration  
                     South Lobby

6:30 a.m.-5 p.m.  Speaker Ready Room  
                  409A

7-9 a.m.  Breakfast Seminars (301-319)

7-8:30 a.m.  AANS/CNS Section on Women in 
             Neurosurgery (WINS) Breakfast  
             Platinum Ballroom Salon FG; 
             JW Marriott

9 a.m.-2:15 p.m.  AANS Exhibit Hall and Learning 
                  Center  
                  Exhibit Hall GHJ

9-9:45 a.m.  Morning Beverage Break in the AANS 
             Exhibit Hall  
             Exhibit Hall GHJ

9:35 a.m.-1 p.m.  Plenary Session III  
                  Exhibit Hall K

                  Historical Film - Los Angeles History of 
                  Neurosurgery  
                  Non-CME Event

                  Louise Eisenhardt Lecture  
                  Amy Cuddy, PhD

                  Rhoton Family Lecture  
                  Evandro Oliveira, MD, PhD, IFAANS
WEEK-AT-A-GLANCE

Humanitarian Award
John Ragheb, MD, FAANS

Van Wagenen Lecture
Prof. Dr. Magdalena Goetz

1-2 p.m. Lunch in the AANS Exhibit Hall
Exhibit Hall GHJ

12-1 p.m. NEW Rapid Fire Abstract Session:
Tumor and Cerebrovascular
409B

NEW Rapid Fire Abstract Session:
Pediatrics and Stereotactic and Functional
410

2-5 p.m. Section Sessions
AANS/CNS Cerebrovascular Section
502AB
AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Peripheral Nerves Section Session
402AB
AANS/CNS Section on Neurotrauma and Critical Care
403AB
AANS/CNS Section on Stereotactic and Functional Surgery
406AB
AANS/CNS Section on Tumors II
408AB

Please note: All abstracts are published as submitted by their authors. The AANS is unable to make any changes to the abstracts.

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- Watch the latest 3-D video lecture from the *Rhoton Lecture Series*®, the free online repository of legendary teaching materials from Albert L. Rhoton Jr., MD, FAANS (L).
Speakers listed are those who accepted the invitation to speak by March 25, 2017.

6:30 a.m.–5 p.m.
**Speaker Ready Room**
Location: 409A

6:30 a.m.–5:30 p.m.
**AANS Registration**
Location: South Lobby

8 a.m.–6 p.m.
**AANS Badge Pick-up**
Location: Studio 3 Foyer, Level 3; JW Marriott

8 a.m.–5 p.m.
**All-day Practical Clinics**

001 Introduction to Cerebrovascular Neurosurgery for Residents
*Non-CME Event*
Location: Didactic in 411 and Hands-on in 408 B
A. Arthur; M. Binning; G. Colby; J. Davies; C. Griessenauer; B. Gross; J. Howington; C. Kellner; W. Mack IV; J. Mascitelli; J. Mocco; C. Ogilvy; C. Schirmer; D. Sigounas; R. Starke; R. Turner IV; E. Veznedaroglu; S. Wolfe
Supported by Medtronic, Penumbra and Stryker.

6:30–9:30 p.m.
**Resident’s Dinner** *(A continuation of 001 Practical Clinic)*
Location: Karl Strauss Brewing Company — 600 Wilshire Blvd.
No Transportation Provided

002 Current Treatments and Controversies in Traumatic Brain Injury
Location: 404AB
K. Gibbons; G. Hawryluk; J. Jallo; R. Kitagawa; D. Okonkwo; H. Park; R. Rodgers; U. Samadani; M. Stippler; S. Timmons
Supported by an educational grant from Codman Neuro, part of the Johnson & Johnson family of companies.

003 Stereotactic and Functional Neurosurgery: Hands-on Workshop
Location: 403
A. Abosch; C. Haupert; P. House; W. Kason; W. Lake; S. Ojemann; J. Schwalb; K. Sillay; N. Tandon; J. Thompson
It is with great pleasure that the leaders of the AANS welcome the Asian-Australasian Society of Neurological Surgeons (AASNS) and the European Association of Neurosurgical Societies (EANS) to the 2017 AANS Annual Scientific Meeting as the collaborating continental societies.

8 a.m.-5 p.m.
International Symposium
Location: 502AB

STEREOTACTIC AND FUNCTIONAL SESSION
Moderators: C. Hamani; N. Pouratian; K. Slavin

8-8:05 a.m.
Introduction
B. Iskandar; D. Michael; K. Slavin

8:06-8:21 a.m.
Imaging and Targeting for Deep Brain Stimulation Surgery
S. Horisawa

8:22-8:37 a.m.
Neuromodulation for Axial Symptoms in Parkinsonism
E. Fonoff

8:38-8:53 a.m.
Focal Hand Dystonia, a New Indication of Stereotactictic Surgery
S. Horisawa

8:54-9:09 a.m.
Neurosurgery for Addiction an Experimental Model
J. Regis

9:10-9:25 a.m.
Occipital Nerve Stimulation in Chronic Refractor Cluster Headache
D. Fontaine

9:26-9:41 a.m.
Complications of EEG Monitoring
K. Fountas
9:42-9:57 a.m.
Anterior Thalamic DBS and Bilateral Radiofrequency Lesions for Treatment of Intractable Epilepsy: 5 Year Experience
A. Sitnikov

9:58-10:13 a.m.
Gamma Knife Radiosurgery in Singapore: 20 Year Experience
Y. Tsai

10:14-10:29 a.m.
Beverage Break

10:29-10:53 a.m.
Stereotactic and Functional Session/Case Discussions

PEDIATRIC SESSION
Moderators: S. Bhatia; J. Blount; B. Iskandar

10:54-11:09 a.m.
Threshold Concepts and Its Role in Pediatric Neurosurgery Training
S. Wan Tew

11:10-11:25 a.m.
Epilepsy In The First 3 Years of Life
D. Muzumdar

11:26-11:41 a.m.
Role of Endoscopy in Intraventricular Tumors
C. Deopujari

11:42-11:57 a.m.
Decision-making in Pediatric Neurocritical Care
A. Figaji

11:58 a.m.-12:13 p.m.
Fetal Neurosurgery — MMC Repair
S. Cavalheiro

12:14-12:29 p.m.
Surgical Treatment and Long Time Follow-up of Children with Moyamoya Disease
R. Shirane
12:30-12:45 p.m.  
Telemetric ICP Monitoring in Children  
M. Juhler

12:46-1:01 p.m.  
Pediatric Neurosurgery Around the World  
W. Harkness

1:02-1:47 p.m.  
Lunch Break  
Concessions will be available to purchase at the Compass Café in the South Building

1:48-2:11 p.m.  
Pediatric Panel/Case Discussions

NEUROTRAUMA SESSION
Moderators: M. R. Bullock; D. Michael

2:12-2:27 p.m.  
Early and Delayed Neurodegeneration Following Traumatic Brain Injury and Sports-related Concussion  
N. Marklund

2:28-2:43 p.m.  
Cerebral Microdialysis in Traumatic Brain Injuries: Research or Prognostic Tool for a Neurosurgeon  
D. Gupta

2:44-2:59 p.m.  
Management of TBI: A Worldwide Perspective  
F. Servadei

3-3:15 p.m.  
Decompressive Craniectomy for Severe Traumatic Brain Injury: Ethical Considerations  
S. Honeybul

3:16-3:31 p.m.  
TBI Guidelines in India  
R. Narayan
3:32–3:47 p.m.
**To Operate or Not: How to Decide**
Aggressive Surgical Care of TBI in Limited Resources Settings
A. Rubiano

3:48–4:03 p.m.
**Current Insight into a Non-invasive Assessment of Post Traumatic Cerebral Vasculature by TCD Ultrasonography**
B. Splavski

4:04–4:19 p.m.
**Beverage Break**

4:20–5 p.m.
**Neurotrauma Panel/Case Discussions**

8 a.m.–12 p.m.
**Morning Practical Clinics**

004 Pediatric Endoscopic Craniosynostosis Repair
*Location: 501AB*
T. Hankinson; D. Jimenez; M. Proctor; A. Ritter; M. Smyth

005 Integrating Pain Management Into Your Neurosurgical Practice
*Location: Red Surgical Lab in AANS Learning Center; Exhibit Hall G*
S. Falowski; J. Miller; A. Mogilner; J. Pope; J. Rosenow; J. Sweet; A. Viswanathan
*Supported by an educational grant from Abbott, Boston Scientific Neuromodulation and Nevro.*

006 Zen and the Art of Posterior Fossa Surgery
*Location: 152/153*
W. Couldwell; A. Kaye; J. Landeiro; L. M. Michael II; A. Nanda; M. Niemela; D. Prevedello; V. Seifert

007 Basics of Spinal Stabilization — Advanced Practice Providers/Medical Students/Residents
*Location: 304ABC*
V. Chang; K. Das; A. Demetriades; V. Hillard; L. Holly; S. Khairi; N. Patel; K. Than
*Supported by an educational grant from DePuy Synthes, part of the Johnson & Johnson family of companies.*
008 Update on the Management of Spine and Spinal Cord Injury
Location: 306AB
A. El Shawarby; M. Fehlings; J. Harrop; D. Hoh; W. B. Jacobs; J. LaFuente; N. Theodore; C. Thome

009 Emerging Technologies in Spine Surgery
Location: 408A
J. Chapman; J. Cheng; D. Drazin; P. Grunert; J. P. Johnson; R. Oskouian; B. Roitberg; N. Theodore; M. Wang

9:45-10:45 a.m.
Practical Clinic Morning Beverage Break

12-1 p.m.
Practical Clinic Lunch*
Location: 151
* For medical attendees participating in an all-day Practical Clinic or in a morning AND afternoon Practical Clinic only.
Concessions will be available to purchase at the Compass Café in the South Lobby

1-4 p.m.
Neurosurgeon-scientist Career Development Course
Location: 309
S. Amin-Hanjani; B. Carter; E. Chiocca; D. Limbrick Jr.; G. Zipfel

1-5 p.m
Leadership Development Course — Mid Career
Non-CME Event
Location: 407
A. Abosch; H. Batjer; M. Berger; J. Bruce; W. Couldwell; R. Fessler; R. Harbaugh; N. Martin; P. McCormick; F. Meyer; R. Narayan; D. Quest; J. Robertson; S. Timmons
1-5 p.m.
Afternoon Practical Clinics

010 Spinal Alignment: Cervical to Pelvis...What EVERY Surgeon Needs to Know; With Case Discussions
Location: 501ABC
D. Coric; R. Haid Jr.; A. Kanter; P. Mummaneni; P. Park; E. Potts; C. Shaffrey; J. Smith; V. Traynelis; J. Uribe

011 Comprehensive Interventional Facial Pain Management
Location: Red Center; Exhibit Hall G
K. Burchiel; J. Miller; B. Pollock; J. Rosenow; R. Sekula Jr.; A. Viswanathan

012 Rhoton Lecture Series: 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base
Location: 152/153
E. de Oliveira; J. Fernandez-Miranda; P. Rubino; J. Sorenson

013 Brain Mapping and Awake Mapping Techniques
Location: 304ABC
N. Barbaro; G. Barnett; H. Duffau; K. Fountas; J. Gonzalez-Martinez; G. Grant; G. McKhann; N. Sanai; U. Ture; F. Vale

014 Neurosurgical Care of Athletes — Concussion, Spine, Peripheral Nerve and Return-to-play
Location: 306AB
J. Maroon; M. Oppenlander; A. Sills; R. Spinner

015 Update on Spinal Radiosurgery
Location: 402
L. Angelov; M. Sheehan; J. Weaver; K. Yao

CANCELLED

CANCELLED
016 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management

Location: 515A

D. Barrow; R. Dacey Jr.; A. Day; S. Giannotta; Y. Mao; P. Pandey; R. Replogle; B. Welch

2:30-3:30 p.m.
Practical Clinic Afternoon Beverage Break

6-8 p.m.
Advanced Practice Providers: Preventive Care — Planning Strategies for Your Long Term Retirement Goals

Non-CME Event
Location: Triple 8 China – 800 W. Olympic Blvd.

M. Langlois; C. Matthews; D. Naftzger

Ticket Required: $75
No Transportation Provided

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• **77** Young Clinician Investigator Awards
• **139** Medical Student Summer Research Fellowships

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IN-PERSON
onPeak Desk
Desk Location: South Lobby, Los Angeles Convention Center
Friday, 4/21: 5–7 p.m.
Saturday, 4/22: 8 a.m.–5 p.m.
Sunday, 4/23: 8 a.m.–6 p.m.
Monday, 4/24: 8 a.m.–4 p.m.
Tuesday, 4/25: 8 a.m.–4 p.m.
Wednesday, 4/26: 8 a.m.–3:30 p.m.

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SUNDAY, APRIL 23

6:30 a.m.-6 p.m.
AANS Registration
Location: South Lobby

7 a.m.-4:30 p.m.
Society of Neurological Surgeons (SNS)
Chief Resident Course
Location: 407
D. Benzil; R. Byrne; A. Cohen-Gadol; W. Couldwell; S. Fronczak; M. Link; J. Liu; J. Ratliff; J. Rosman; M. Shah; E. Smith; A. Stroink
Supported by Stryker.

7 a.m.-5 p.m.
Speaker Ready Room
Non-CME Event
Location: 409A

7:30 a.m.-4:30 p.m.
All-day Practical Clinics

017 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example
Location: 409B
P. Angevine; M. Caron; J. Cheng; A. Dsai; R. Johnson; K. Pollock; J. Ratliff; C. Schirmer; S. Simon; K. Swartz; L. Tumialan

019 You Are Never Too Old for Surgery: Spine Management in an Aging Population
Location: 150BC
P. Anderson; N. Brooks; D. Dirisio; D. Hoh; D. Josiah; A. Krishnaney; K. Petronis; S. Rajpal; S. Schmoller; J. Shin; M. Steinmetz; A. Strayer; S. Tharin; G. Trost; E. Tsai

www.aans.org/AANS2017
SPINE SESSION
Moderators: M. Hadley; P. Hitchon; N. Theodore

7:30-7:35 a.m.
Introduction
P. Hitchon; J. Morcos; A. Nanda

7:36-7:51 a.m.
Thoracic Disc Herniation
(eg. Approaches, Advantages, Risks, Etc.)
A. Demetriades

7:52-8:07 a.m.
The Role of the Neurosurgeon in Scoliosis and Deformity
J. LaFuente

8:08-8:23 a.m.
Long Term Outcome of Surgery for Spondylodiscitis in a Recent Cohort of 282 Patients: Risk Factors and Patient Characteristics
B. Meyer

8:24-8:39 a.m.
Complications, Clinical and Radiological Outcome of Pedicle Subtraction Osteotomies
C. Thome

8:40-8:55 a.m.
New Developments in CSF Physiology
M. Vukic

8:56-9:11 a.m.
MIS Spinal Surgery
A. El Shawarby

9:12-9:27 a.m.
Correction of Severe Cranio-Vertebral Junction Deformity, Atlanto-Axial Dislocation and Basilar Invagination Through a Posterior Only Approach — The DCER Principle
P. Chandra
9:28-9:43 a.m.
Spinal AVM/AVF
S. Yamaguchi

9:44-9:59 a.m.
Beverage Break

9:59-10:23 a.m.
Spine Panel/Case Discussions

CEREBROVASCULAR SESSION
Moderators: M. Baskaya; F. Charbel; J. Morcos

10:24-10:39 a.m.
Microsurgery of Complex Aneurysms
B. Misra

10:40-10:55 a.m.
Treatment Strategies for Giant Aneurysm
Y. Tu

10:56-11:11 a.m.
Distal Outflow Occlusion: a Measure of Last Resort in Complex Intracranial Aneurysms
L. Regli

11:12-11:27 a.m.
Strategies for Preventing Secondary Brain Injury After Subarachnoid Hemorrhage
P. Vajkoczy

11:28-11:43 a.m.
Characteristics, Treatment and Long-term Prognosis of Pediatric Aneurysm Patients
M. Niemela

11:44-11:59 a.m.
AVM Surgery Without Embolization
M. Morgan

12-12:15 p.m.
Surgery for Cerebral AVMs: Lessons in Technique
K. Hongo
12:16-12:31 p.m.
Challenges in the Treatment of Cranial DAVFs
F. Goncalves-Llanos

12:32-1:17 p.m.
Lunch Break
Concessions will be available to purchase in the Compass Café in the South Lobby

1:18-1:44 p.m.
Cerebrovascular Panel/Case Discussions

TUMOR SESSION
Moderators: L. Liau; A. Nanda

1:45-1:58 p.m.
Early Maximal Safe Resection in Diffuse Low-grade Glioma: Role of Neuroplasticity and Brain Connections
H. Duffau

1:59-2:12 p.m.
Insular Gliomas: Two Potential Threats — MCA Branch Injury and Fiber Tract Disruption: Guidelines to Maximal Safe Resection
K. Turel

2:13-2:26 p.m.
Microsurgical Removal of Precentral Gyrus Tumors
U. Ture

2:27-2:40 p.m.
Molecular and Imaging Biomarkers in Neuro-oncology: Impact for Neurosurgical Management
J. Tonn
2:41-2:54 p.m.
Endoscopic Endonasal Treatment of Meningioma’s
P. Cappabianca

2:55-3:08 p.m.
Aggressive Surgery of Craniopharyngiomas Based on an Anatomical Sub-classification
K. Ohata

3:09-3:22 p.m.
Approaches to Unusual Posterior Fossa Lesions
I. Omerhodzic

3:23-3:36 p.m.
Acoustic Neuroma: Hearing Preservation
A. Kaye

3:37-3:50 p.m.
Auditory Midbrain Implants for Hearing Restoration in Neurofibromatosis II Patients
A. Samii

3:51-4:05 p.m.
Beverage Break

4:06-4:30 p.m.
Tumor Panel/Case Discussions
# Advanced Practice Providers Plenary Session

**Location:** 404AB  
**Moderators:** M. Langlois; C. Matthews  

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>7:30-7:44 a.m.</td>
<td>Welcome</td>
<td>F. Boop</td>
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<tr>
<td>7:45-8:35 a.m.</td>
<td>Cerebrovascular Trauma</td>
<td>A. Amar</td>
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<tr>
<td>8:36-9:16 a.m.</td>
<td>Pediatric Spinal Dysraphism</td>
<td>I. Tarasiewicz</td>
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<tr>
<td>9:17-9:32 a.m.</td>
<td>Beverage Break</td>
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<tr>
<td>9:33-10:31 a.m.</td>
<td>Spinal Orthoses: Considerations and Controversies</td>
<td>K. Shultz</td>
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<tr>
<td>10:32-11:30 a.m.</td>
<td>Infectious Disease Principles for the Neurosurgical Provider</td>
<td>D. Wong</td>
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<tr>
<td>11:31 a.m.-12:30 p.m.</td>
<td>Lunch Break</td>
<td>Concessions will be available to purchase in the Compass Café in the South Lobby</td>
</tr>
<tr>
<td>12:31-1:21 p.m.</td>
<td>Novel Innovations in Brain Tumor Surgery and Precision Medicine</td>
<td>S. Kalkanis</td>
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<tr>
<td>1:22-2:07 p.m.</td>
<td>Functional Neurosurgery</td>
<td>S. Ojemann</td>
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<tr>
<td>2:08-2:28 p.m.</td>
<td>Beverage Break</td>
<td></td>
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</tbody>
</table>
2:29-2:59 p.m.
NP Management of Cranial Post-Operative Complications
D. Lally-Goss

3-3:30 p.m.
Outpatient Dilemmas - Complications in the Postsurgical Spine Patient
K. Kilbourn

3:31-3:40 p.m.
645 Enhanced Preoperative Prediction of Discharge Disposition for Neurosurgical Patients
N. Sharma

3:41-3:50 p.m.
501 A Different Look: Increased Charge Requirement of Spinal Cord Stimulators
E. Green

3:51-4 p.m.
969 Triage Patterns of Traumatic Subarachnoid Hemorrhage: Is Referral to a Tertiary Care Center Necessary?
M. Gates

4:01-4:10 p.m.
503 In the United States, Lack of Parent/Caregiver Compliance Interferes with the Pediatric Neurosurgery Patient Care Sequence
H. James

4:11-4:20 p.m.
504 A Single Center Experience of Patient Outcomes and Length of Stay Following Endoscopic Assisted, Neuronavigation Guided Evacuation of Intracerebral Hemorrhage using the Apollo Aspiration System
R. Ryan

4:21-4:30 p.m.
695 Moyamoya Disease and Pregnancy: A Single Institutional Experience in the USA
R. Qaiser
020 Endoscopic Lumbar Spinal Surgery: Cadaveric Hands-on Course  
Location: Red Surgical Lab in AANS Learning Center; Exhibit Hall G  
C. Hofstetter; D. Laich; W. Taylor; A. Telfeian; M. Wang; P. Witt

021 Rhoton Lecture Series: 3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base  
Location: 152/153  
E. de Oliveira; J. Fernandez-Miranda; P. Gardner; P. Rubino; J. Sorenson

022 Update on Tumors for the General Neurosurgeon I: Adult Gliomas and Metastases  
Location: 301AB  
M. Berger; S. Chang; P. Fecci; S. Kalkanis; N. Sanai; J. Sheehan; A. Sloan; C. Watts; J. Weinberg

023 How to Launch a Career in Tumor Neurosurgery  
Location: 308AB  
M. Aghi; F. Barker; G. Barkhoudarian; C. Bettegowda; D. Cahill; S. Chang; W. Curry Jr.; C. Farrell; S. Kalkanis; R. Komotar; J. Kuo; L. Liau; J. Moliterno Gunel; J. Sheehan; M. Vogelbaum

024 Negotiating Strategies in Neurosurgery  
Location: 306AB  
E. Dyer; M. Grady; L. Michael; T. Payner; J. Slotkin

025 Laser Thermocoagulation — How, When and Why  
Location: 402AB  
V. Chiang; J. Jagid; M. Schuldor; J. Willie
026 Deep Brain Stimulation: Update and New Directions
Location: 408A
A. Abosch; E. Air; C. Halpern; P. House; M. Kaplitt; B. Kopell; P. Larson; N. Pouratian; J. Rosenow; S. Sheth; D. Whiting

027 Goodman Oral Board Review
Location: 406AB
J. Harrop; R. Komotar; T. Leipzig; A. Levi; R. Spinner

9:15-10:15 a.m.
Practical Clinic Morning Beverage Break

11:30 a.m.-12:30 p.m.
Practical Clinic Lunch*
Location: 151
* For medical attendees participating in an all-day Practical Clinic or in a morning AND afternoon Practical Clinic only.
Concessions will be available for purchase in the Compass Café in the South Lobby.

12-4:30 p.m.
Afternoon Practical Clinics

028 State-of-the-art: Cranial Endoscopy
Location: Blue Surgical Lab in the AANS Learning Center; Exhibit Hall G
K. Chaichana; A. Cohen; I. Dunn; J. Grotenhuis; D. Guillaume; T. Herrada-Pineda; R. Iyer; Y. Jeelani; S. Manjila; H. Schroeder; T. Vogel

029 How to Tackle Difficult Cranial Cases: A Step-by-step 3-D Case-based Presentation
Location: 152/153
F. Goncalves-Llanos; K. Hongo; M. Lawton; J. Morcos; B. Thompson Jr.; H. van Loveren

030 Update on Tumors for the General Neurosurgeon II: Skull Base, Pediatric and Spine Tumors
Location: 301AB
M. Aghi; S. Bhatia; I. Dunn; Z. Gokaslan; J. Landeiro; M. Link; I. Pollack; T. Schwartz; J. Shin
031 Neurotrauma and Neurocritical Care for the Practicing Neurosurgeon: MOC Review and Update
Location: 303AB
P. Ball; P. Hutchinson; J. Medow; D. Michael; D. Okonkwo; P. Raksin; P. Villanueva

032 Practical and Technical Aspects of Transsphenoidal Surgery
Location: 306AB
D. Banerji; G. Barkhoudarian; D. Baskin; J. Grotenhuis; J. Jane Jr.; E. Laws Jr.; J. Liu; I. McCutcheon

033 Alternatives to Transpedicular Approaches to Achieving Arthrodesis
Location: 408A
E. Benzel; C. Branch Jr.; B. Frankel; N. Malhotra; M. Steinmetz; J. Voyadzis

034 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation
Location: 406AB
A. Hanna; M. Hebert-Blouin; L. Jacques; R. Midha; V. Prabhu; L. Rasulic; R. Spinner; E. Zager

035 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches
Location: 501ABC
R. Anderson; D. Brockmeyer; A. Dailey; H. Deutsch; W. Gluf; A. Goel; T. Hankinson; M. Kaiser; J. LaFuente; D. Resnick; C. Sansur; C. Thome

12:30-4:30 p.m.
Leadership Development Course — Senior Residents
Non-CME Event
Location: 309
F. Barker II; E. Benzel; E. Bisson; C. Branch Jr.; J. Cheng; Z. Ghogawala; A. Quinones-Hinojosa; G. Rao; W. Ray; M. Schmidt; N. Selden; K. Tomei

2-3 p.m.
Practical Clinic Afternoon Beverage Break
1:03-1:30 p.m.  
**Osler Lecture**  
Mentorship and Ethics  
R. Heros

1:31-1:40 p.m.  
**Medical Student Summer Research Fellowship Award**  
Iron Nanoparticle Contrast Enhanced Microwave Tomography for Emergent Stroke: A Pilot Study  
J. Hudson

1:41-1:50 p.m.  
506 Prospective Study of the Use of Intraoperative Neuromonitoring in Determining Post-Operative Energy Requirements and Physiologic Midline in Spinal Cord Stimulation  
C. Collison

1:51-2 p.m.  
507 History of Bone Morphogenetic Protein (BMP) and its Application in Spine Surgery  
L. Chieng

2:01-2:10 p.m.  
508 Brain repair and neural network remodeling by hematopoietic growth factors in subacute phase of traumatic brain injury in animal model  
G. Toshkezi
2:11-2:20 p.m.
509 Palliative Care and Communication Training in Neurosurgery Residency
S. Miranda

2:21-2:30 p.m.
510 The Long-Term Outcomes of Octogenarians with Aneurysmal Subarachnoid Hemorrhage: A National Minimum Data Set Analysis
H. Dasenbrock

2:31-2:40 p.m.
511 Diminishing returns in successive thrombectomy attempts for revascularization in acute ischemic stroke
J. Kosty

2:41-2:50 p.m.
512 A Quantitative Analysis of Craniopharyngioma Cyst Expansion during and after Radiation Therapy and Surgical Implications
K. Lamiman

2:51-3 p.m.
513 T2-Weighted MRI is Superior to Other Sequences to Determine Intratumoral Heterogeneity in DIPG
S. Farber

3:01-3:10 p.m.
Beverage Break

3:11-3:20 p.m.
514 Investigating IGF2BP1 as an Oncogenic Driver in Infant Ependymoma
V. Mahadev

3:21-3:30 p.m.
515 Phase I Trial of Laser Interstitial Thermal Therapy Treatment for Cerebral Radiation Necrosis
R. Rammo
3:31-3:40 p.m.
516 Pedicle Screw Placement Accuracy with Ultra-Low Radiation Imaging — a randomized controlled trial
G. Nayar

3:41-3:50 p.m.
517 Effect of Segmental Lordotic Angle after a Single Level Interbody Fusion on Lumbar Lordosis and Development of Adjacent Level Disease
T. Urakov

3:51-4 p.m.
518 Expandable vs Static Inter-body Grafts Reduce Operative Time, Improve Lordosis and Accelerate Return to Work after Fusion for Lumbar Stenosis and Spondylolisthesis
V. Rossi

4:01-4:10 p.m.
519 Using Telomere Length to Help Determine Amygdala Function for potential use in the Setting of Mesial Temporal Sclerosis
J. Jennings

4:11-4:20 p.m.
520 Military Neurosurgery Socioeconomic Data; Benefits, Challenges, and Opportunities
R. Menger

4:21-4:30 p.m.
Presentation of Quest Award Winners
Introduced By: M. Ivan
### SUNDAY, APRIL 23

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<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
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<tr>
<td>5-6:30 p.m.</td>
<td><strong>AANS Opening Ceremonies</strong></td>
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<td><strong>Location:</strong> Exhibit Hall K</td>
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<td><strong>Moderator:</strong> S. Gupta</td>
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<tr>
<td>5-5:05 p.m.</td>
<td><strong>Welcome</strong></td>
<td>F. Boop</td>
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<tr>
<td>5:06-5:08 p.m.</td>
<td><strong>Introduction</strong></td>
<td>S. Gupta</td>
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<td>5:09-5:16 p.m.</td>
<td><strong>P. Farmer</strong></td>
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<td>5:17-5:24 p.m.</td>
<td><strong>W. Johnson</strong></td>
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<td>5:25-5:32 p.m.</td>
<td><strong>M. Haglund</strong></td>
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<td>5:33-5:40 p.m.</td>
<td><strong>V. Kerry</strong></td>
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<tr>
<td>5:41-6:19 p.m.</td>
<td><strong>Round Table Discussion</strong></td>
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<td>6:19-6:30 p.m.</td>
<td><strong>J. Johnston</strong></td>
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</table>
7-9 p.m.

**AANS Opening Reception.**

*Location: Microsoft Square at L.A. LIVE*

Microsoft Square at L.A. LIVE is a 5 minute walk from the Los Angeles Convention Center.

**Bussing will be provided from the following official**

**AANS Hotels from 6:30-9:30 p.m.:**

- Doubletree by Hilton Hotel Los Angeles Downtown
- Hilton Checkers Los Angeles
- Millennium Biltmore Hotel Los Angeles
- Omni Los Angeles Hotel at California Plaza
- Sheraton Grand Los Angeles
- The L.A. Hotel Downtown
- The Westin Bonaventure Hotel & Suites, Los Angeles
- LEVEL Furnished Living
- The Los Angeles Athletic Club
- Hotel Indigo Los Angeles Downtown

**The following hotels are within walking distance:**

- JW Marriott Los Angeles L.A. LIVE
- Courtyard Los Angeles L.A. LIVE
- Luxe City Center Hotel
- Residence Inn Los Angeles L.A. LIVE
- Ritz-Carlton Los Angeles

**Ticket required: $250**

One ticket is included in attendees, spouse and guest registrations.

**Microsoft Square at L.A. LIVE Policies**

- Smoking (including electronic cigarettes) is not permitted anywhere on the campus.
- Everyone entering a private event space is subject to metal detector screening, visual inspection and a bag inspection.
- This campus is not responsible for any unattended, lost or stolen items.
- No markers, pens or spray paint.
- No large backpacks.
- No large purses or bags (anything over 14” x 14”)

Guests who choose not to adhere to these provisions will be subject to ejection. Venue Management reserves the right to approve, adjust or enforce any policy at their discretion.
The American Association of Neurological Surgeons (AANS) in collaboration with the Neurosurgery Research & Education Foundation (NREF) invites you to attend the Second International Brain Mapping Course, hosted the two days immediately prior to the 2018 AANS Annual Scientific Meeting in New Orleans.

Led by a faculty from major brain mapping centers in Europe, North America and Asia, the Second International Brain Mapping Course presents advances, advantages and practical issues in contemporary pre-operative and intra-operative brain mapping applications in brain tumor and functional neurosurgery.

**Course Directors**

Mitchel S. Berger, MD, FAANS, University of California, San Francisco (UCSF)

Richard W. Byrne, MD, FAANS, Rush University, Chicago

Hugues Duffau, MD, Hôpital Gui de Chauliac
6:30 a.m.-4 p.m.
AANS Registration
Location: South Lobby

6:30 a.m.-5 p.m.
Speaker Ready Room
Location: 409A

7-9 a.m.
Breakfast Seminars
Ticket Required: $100
Candidate and Medical Student Ticket: $65
Breakfast will be available in the room of the session for Breakfast Seminar attendees.

101 Practice Pearls for the Outpatient Neurosurgical Advanced Practice Provider
Location: 301AB
K. Kilbourn; M. Langlois; C. Matthews; D. Purviance; S. Stratford; T. Wilson

102 Skating to Where the Puck Will Be: Strategies for Neurosurgery Practices and Programs to Compete in Health Care’s Future
Location: 402AB
D. Coric; J. Ecklund; R. Friedlander; D. Kim; J. Ratliff; K. Swartz

103 Surgical Approaches to the Lateral Skull Base
Location: 501BC
J. Ciporen; J. Golfinos; J. Olson; L. Poulsgaard; H. van Loveren; W. Vandergrift III

104 Challenging Spinal Cases: Pearls and Pitfalls
Location: 411
Y. Caglar; A. Demetriades; A. El Shawarby; A. Falavigna; D. Hoh; F. Jian

105 Cervical Spondylotic Myelopathy
Location: 304AB
R. Heary; M. Kaiser; I. Kalfas; J. LaFuente; P. Mummaneni; H. Nakagawa

106 Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery
Location: 406AB
M. Aziz-Sultan; M. Baskaya; A. Krisht; E. Peterson; B. Tranmer
107 Return-to-play After Sports Injury I: Concussion
Location: 404AB
J. Bailes Jr.; D. Gonda; M. Krieger; J. Maroon; M. Proctor; A. Sills

108 If I Could Do That Case Over Again: Discussion of Complications of Cranial Surgery
Location: 507
O. Bozinov; P. Camarata; T. Joerg-Christian; P. Nakaji; M. Pamir

109 Resective Strategies for Epilepsy
Location: 304C
S. Bhatia; G. Grant; B. O’Neill; M. Sather; N. Tandon

110 Open vs. Endoscopic Approaches to the Anterior Skull Base
Location: 150A
O. Al-Mefty; C. David; F. Gentili; T. Schwartz; C. Sen; J. Steno

111 Peripheral Nerve Entrapment Syndromes
Location: 501A
A. Belzberg; L. Jacques; L. Rasulic; E. Zager

112 Adult Low-grade Gliomas
Location: 309
D. Cahill; S. Chang; A. Kaye; L. Liau; U. Ture; M. Westphal

113 Complication Management and Avoidance in Vascular Neurosurgery
Location: 410
C. Alleyne Jr.; S. Amin-Hanjani; N. Bambakidis; L. Kim; C. Loftus; R. Rosenwasser

114 Fluorescence Technologies in Tumor Neurosurgery: Present and Future Directions
Location: 303AB
K. Aziz; A. Cohen-Gadol; C. Hadjipanayis; I. Nakano; A. Raabe; N. Sanai

115 European Traditions in Neurosurgery: Origins, Differences, Similarities, Parallels, and Interplay with American Neurosurgery
Location: 506
T. Dagi; S. Greenblatt; C. Prestigiacomo; M. Preul; B. Skeie; M. Zerah
116 Neurosurgery Resident Wellness
Location: 407
K. Fargen; R. Jones; B. Kennedy; A. Spiotta; R. Turner IV; N. Vyas

117 CSNS — Adapting Your Practice for 2017 and Beyond
Location: 409B
S. Eden; B. Nahed; M. Radomski; J. Ratliff; J. Rosman; A. Stroink

118 Multidisciplinary Management of Brain Metastases
Location: 505
M. Ahluwalia; A. Asher; M. Ivan; F. Lang Jr.; T. Ryken; V. Tabar

119 Advanced Lateral Transpsoas MIS Techniques: Expanding LLIF Indications
Location: 306AB
D. Chou; A. Kanter; J. Liu; J. O’Toole; C. Prusmack; J. Uribe

120 Emerging Indications in Neuromodulation Surgery
Location: 150BC
K. Foote; C. Halpern; A. Lozano; A. Machado; S. Sheth

9 a.m.-4:15 p.m.
AANS Exhibit Hall and Learning Center
The AANS Exhibit Hall brings together over 200 companies who offer innovative products and services to the neurosurgical space.

Presented this year for the first time is the AANS Learning Center. Located near the AANS Resource Center, it offers educational opportunities to neurosurgeons at every stage of their career from Neurosurgical Top Gun for residents/fellows, to surgical labs for practical clinics, and kiosks for viewing e-posters presenting research from your peers.
Location: Exhibit Hall GHJ

9-9:45 a.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ
MONDAY, APRIL 24

9:35 a.m.-1 p.m.
Plenary Session I
Location: Exhibit Hall K
Moderators: A. Abosch; H. Batjer

9:35-9:44 a.m.
Historical Film: The History of Hollywood — Narrated by M. Krieger
Non-CME Event

9:45-9:46 a.m.
Video Presentation: Support Neurosurgery Through NREF
Non-CME Event

9:47-9:48 a.m.
Welcome
A. Abosch

9:49-9:51 a.m.
Introduction of the Hunt Wilson Lecture
F. Boop

9:52-10:26 a.m.
Hunt Wilson Lecture
Non-CME Event
S. Khan

10:27-10:37 a.m.
600 Four-year Cost Analysis for the Spinal Laminectomy versus Instrumented Pedicle Screw (SLIP) Trial
V. Ravindra

10:38-10:39 a.m.
Assessment of the Trial Design/Level of Evidence
R. Harbaugh

10:40-10:42 a.m.
Discussant
C. Shaffrey

10:43-10:53 a.m.
Mahaley Clinical Award
601 Olig2 as a novel target for IDH1mutant tumors
M. Garrett
10:54-10:55 a.m.
Assessment of the Trial Design/Level of Evidence
R. Harbaugh

10:56-10:58 a.m.
Discussant
C. Bettegowda

10:59-11:09 a.m.
602 The utility of platelet function testing prior to Pipeline Embolization Device placement for the treatment of intracranial aneurysms: A multicenter cohort study
C. Griessenauer

11:10-11:11 a.m.
Assessment of the Trial Design/Level of Evidence
R. Harbaugh

11:12-11:14 a.m.
Discussant
A. Arthur

11:15-11:25 a.m.
Vesalius Award
603 Cheating Death: A Neurosurgical History of Human Resuscitation, Reanimation, and the Pursuit of Immortality
M. Bohl

11:26-11:28 a.m.
Discussant
F. Barker

11:29-11:31 a.m.
Introduction of Theodore Kurze Lecture
F. Boop

11:32 a.m.-12:12 p.m.
Theodore Kurze Lecture
D. Agus

12:13-12:14 p.m.
Introduction of AANS Cushing Award for Technical Excellence and Innovation in Neurosurgery Award
J. Morcos
12:15-12:17 p.m.  
**AANS Cushing Award for Technical Excellence and Innovation in Neurosurgery**  
F. Charbel

12:18-12:19 p.m.  
**Introduction of Distinguished Service Award**  
F. Boop

12:20-12:23 p.m.  
**Distinguished Service Award**  
V. Sonntag

12:24-12:28 p.m.  
**Introduction of AANS President**  
K. Arnautovic

12:29-1 p.m.  
**AANS Presidential Address**  
F. Boop

1-1:01 p.m.  
**Introduction of Lunch-and-learn Seminars**  
A. Abosch

12:45-2:15 p.m.  
**Lunch in the AANS Exhibit Hall**  
*Location: Exhibit Hall GHJ*
1:10-1:55 p.m.  
**Lunch-and-learn Seminars**  
*Non-CME Events*

**How Expandable Technology Has Changed My Practice**  
*Location: 306AB*  
N. Theodore  
*Presented by Globus Medical*

**Skull Base Microsurgery in the Era of Endoscopy**  
*Location: 303AB*  
D. Prevedello  
*Presented by Codman Neuro*

**PRESTIGE LP™ Cervical Disc Adjacent Two-Level Arthroplasty: Design Rationale, Surgical Technique, and 7-Year Data**  
*Location: 304AB*  
T. Traynelis  
*Presented by Medtronic*

**Advanced Techniques in Achieving Integrated Spinal Alignment**  
*Location: 309*  
R. Haid Jr.; C. Shaffrey; J. Uribe  
*Presented by NuVasive, Inc.*

**Tritanium®: A Novel Highly Porous Titanium Alloy for Interbody Fusion Procedures**  
*Location: 301AB*  
M. McGirt  
*Presented by Stryker*

**Novalis Circle Symposium: Technology Developments for Primary Brain Tumors**  
*Location: 150BC*  
*Presented by Brainlab*
MONDAY, APRIL 24

1:10-2 p.m.
**Neurosurgery “In Press”: Latest Results of Clinical Trials in Neurosurgery and Allied Fields**
*Location: 501BC*
A. Abosch; S. Amin-Hanjani; F. Barker; D. Cahil; Z. Ghogawala; U. Samadani

1:15-2:45 p.m.
**Advanced Practice Providers Luncheon**
*Location: Platinum Ballroom Salon AB; JW Marriott*
M. Langlois; C. Matthews

More Than Self-care: Strategies for Understanding and Addressing the Impact of Compassion Fatigue on Neurosurgical Practice
E. Godena
Ticket Required $25

2-3:30 p.m.
**3-D Session**
**Operative Nuances I: Handling Difficult Intraoperative Moments**
*Location: 152/153*
A. Cohen-Gadol; W. Couldwell; J. Fernandez-Miranda

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**SCIENTIFIC SESSION II: TUMOR**
*Location: 408AB*
Moderators: W. Curry Jr.; D. Orringer

2-2:04 p.m.
**Introduction of the Ronald L. Bittner Lecture**
S. Kalkanis

2:05-2:39 p.m.
**Ronald L. Bittner Lecture**
R. Lonser

2:40-2:49 p.m.
**Stryker Neuro-oncology Award**
632 Discovery of A Novel Integrin/Tyrosine Kinase Complex That Drives Brain Metastases
A. Jahangiri
2:50-2:59 p.m.
**Preuss Award**
637 Detection of wtEGFR Amplification and EGFRVIII Mutation in CSF-Derived Extracellular Vesicles of High-Grade Glioma Patients
J. Figueroa

3-3:09 p.m.
643 In Situ Tumor Vaccination Against Melanoma Prevents Intracranial Growth of Melanoma Cells
J. Kuo

3:10-3:19 p.m.
648 Nanoclinic in the Brain. Nanoconjugates for MRI Virtual Biopsy and Treatment of Brain Metastatic Tumors
V. Ljubimov

3:20-3:29 p.m.
**American Brain Tumor Association Young Investigator Award**
655 Desmoplastic infantile ganglioglioma/astrocytoma
A. Wang

3:30-4 p.m.
**Beverage Break in the AANS Exhibit Hall**
*Location: Exhibit Hall GHJ*

4:01-4:10 p.m.
662 Multimodal Characterization of Supratentorial Gliomas: Relationship Among Morphological, Metabolic and Molecular features
M. Riva

4:11-4:20 p.m.
668 MRI FLAIR Hyperintensity in Labyrinth is a Predictive Biomarker for Hearing Loss in Neurofibromatosis Type 2 Patients with Small Vestibular Schwannoma
R. Walker III
4:21-4:30 p.m.
674 Expression of PDL-1 on Pituitary Adenomas: A Role for Immunotherapy
A. Elsamadicy

4:31-4:40 p.m.
680 Optimizing Near-Infrared Optical Contrast Via “Second-Window ICG” for Glioma with both Intracranial Murine Model and Human Clinical Trial
R. Zeh

4:41-4:50 p.m.
685 Improvement of Frontline Therapy for GBM by Targeting the DNA Damage Response.
A. Cohen-Gadol

4:51-5 p.m.
691 NF2 Disruption by Genomic Rearrangements drives a Subset of Radiation-induced meningiomas
S. Suppiah

5:01-5:10 p.m.
697 Individual variation in the ventral and dorsal language pathways: implications for insular tumor resection
G. Banks

5:11-5:20 p.m.
704 Combination Immunotherapy With Whole Tumor Cell Vaccination and OX40 Stimulation Overcomes Tumor-Associated Immunosupression and Prolongs Survival In Mice with Intracranial Glioma
W. Curry Jr.

5:21-5:30 p.m.
Ronald L. Bittner Award on Brain Tumor Research
711 Multisector Whole-exome Sequencing of Glioblastoma Reveals Profound Intratumoral Diversity: Implications for Precision Medicine
A. Vellimana, Presented by A. Kim
SCIENTIFIC SESSION II: SPINE

**Location:** 403AB
**Moderators:** P. Park; M. Steinmetz
**Supported by an educational grant from DePuy Synthes, part of the Johnson & Johnson family of companies.**

2-2:05 p.m.

**606 Current MIS Techniques Fail to Optimize Spinopelvic Parameters in Patients with High Pelvic Incidence**
R. Fessler

2:06-2:11 p.m.

**Sanford J. Larson, MD, PhD Award**

**610 Optical Topographic Imaging for Intra-Operative Three-Dimensional Navigation in the Cervical Spine: Accuracy Validation and Initial Clinical Feasibility**
D. Guha

2:12-2:17 p.m.

**Brian D. Silber Award**

**615 Laser Thermotherapy for Spinal Metastatic Disease provides Comparable Local Control, Reduced Morbidity and Shorter Delay to Systemic Therapy Compared to Open Surgery**
R. Everson

2:18-2:23 p.m.

**Stewart B. Dunsker, MD Award**

**617 Assessment of Sagittal Balance Following TLIF — Are We Kyphosing the Lumbar Spine?**
K. Madhavan

2:24-2:29 p.m.

**622 Prediction of 30-Day Morbidity and Mortality Following Resection of Epidural Tumors of the Lumbar Spine in 300 Patients: An ACS NSQIP Analysis**
C. Sarkiss
2:30-2:35 p.m.
625 Treatment of Chronic Low Back Pain via Ablation of the Basivertebral Nerve: Results of a Multicenter, Randomized, Double Blinded, Sham Controlled FDA IDE Trial (SMART Trial)
B. Meyer

2:36-2:41 p.m.
628 Potential of human nucleus pulposis like cells derived from human umbilical cord to treat degenerative disc disease
M. Perez-Cruet

2:42-2:47 p.m.
633 Comparison of the Long Term Results of One-Level vs Two-level Cervical Total Disc Replacement vs Anterior Cervical Discectomy and Fusion
J. McConnell

2:48-2:53 p.m.
634 Combinatorial Surgical and Neuroprotective Therapy for Cervical Spondyloptic Myelopathy Results in Improved Neurological Function: from Preclinical Proof of Concept to a Phase III Randomized Controlled Trial
M. Fehlings

2:54-2:59 p.m.
638 Lumbar Spine Surgical Site Infection Prevention with a Systematized Peri-operative Protocol: A Propensity Matched Multidepartmental Multiyear Retrospective Cohort Study
V. Yanamadala

3-3:05 p.m.
640 A Comparison of the Nationwide Inpatient Sample and the MarketScan Databases for Trends and Outcomes of Spine Surgery in Octogenarians
D. Drazin
3:06-3:11 p.m.
644 Treatment of Unstable Thoracolumbar Junction Fractures: Short-Segment Pedicle Fixation with Inclusion of the Fracture Level versus Long-Segment Instrumentation
M. Iacoangeli

3:12-3:17 p.m.
649 Comparison of 1 vs. 2 year Oswestry Disability Index Outcomes in Lumbar Spine Surgery from a Prospective Registry
A. Sivaganesan

3:18-3:23 p.m.
650 EVOLVE: A Prospective Multicenter Evaluation of Outcomes following Kyphoplasty for Vertebral Compression Fractures
J. Amburgy

3:24-3:29 p.m.
656 Lumbar Fusion for Symptomatic Mechanical Disc Collapse without Stenosis Improves Pain, Disability, and Quality of life: Rethinking the debate on degenerative disc disease (DDD)
S. Chotai

3:30-3:54 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

3:55-4:24 p.m.
Sonntag Lecture
The Importance of Alignment in Degenerative Cervical Disc Disease
V. Traynelis

4:25-4:30 p.m.
676 Toll-like Receptor 9 Antagonism Inhibits Spinal Cord Astrocyte Proliferation and Migration
L. Li
4:31-4:36 p.m.
677 Anterior Cranio-Vertebral Junction Lesions: Can Endoscopy Expand the Indications for Surgery or Improve the Standard Technique?
M. Iacoangeli

4:37-4:42 p.m.
682 Frail Patients Achieve Greater Health Related Quality of Life Improvement Following Adult Spinal Deformity Surgery
E. Miller

4:43-4:48 p.m.
686 Efficacy of Intraoperative Epidural Triamcinolone Application in Lumbar Microdiscectomy: a Matched-control Study
H. Joswig

4:49-4:54 p.m.
688 The effect of smoking status on instrumentation success after rhBMP-2 supplemented lumbar fusion constructs
M. Bydon

4:55-5 p.m.
693 Motorcycle Helmets and Cervical Spine Injuries: A Five Year Experience at a Level One Trauma Center
P. Page

5:01-5:06 p.m.
696 A Novel Tool for Deformity Surgery Planning: Determining the Magnitude of Lordotic Correction Required to Achieve a Desired Sagittal Vertical Axis
E. Goldschmidt

5:07-5:12 p.m.
700 Outpatient versus inpatient ACDF: a population-level analysis of outcomes and cost
A. Pendharkar

5:13-5:18 p.m.
705 Does Myelopathy or Alignment Improvement Drive Acute Post-Operative Outcomes in Cervical Deformity Patients?
P. Passias
5:19-5:24 p.m.
708 Laminoplasty vs. Laminectomy-fusion For the Treatment of Cervical Myelopathy: Preliminary Data from the CSM-Study Comparing Cervical Sagittal Alignment and Clinical Outcomes
V. Ravindra

5:25-5:30 p.m.
713 Genetic Predisposition to Lumbar Disk Herniation in Pediatric Patients
C. Goodwin

SCIENTIFIC SESSION

SCIENTIFIC SESSION III: STEREOTACTIC AND FUNCTIONAL SURGERY
Location: 406AB
Moderators: R. Gross; S. Sheth

2-2:09 p.m.
Philip L. Gildenberg, MD Resident Award
607 Caudate Stimulation Enhances Human Associative Learning
S. Bick

2:10-2:19 p.m.
612 Contextual Differences in Motor Cortical Neural Firing Patterns When Controlling Multiple Effector Devices Using an Intracortical Brain-computer Interface (iBCI)
V. Chavakula

2:20-2:29 p.m.
619 Survival and integration of human stem cell-derived cerebral organoids in rat secondary visual cortex
H. Chen

2:30-2:39 p.m.
626 Modulating Large-Scale Epileptic Networks by SEEG Guided-Laser Ablations
L. Ross

2:40-2:49 p.m.
631 A Distinct dorsolateral pre-motor essential language site
N. Tandon

www.aans.org/AANS2017
2:50-2:59 p.m.
635 Characterization of synchronization between globus pallidus neurons and motor cortex in Parkinson’s disease
D. Wang

3-3:09 p.m.
641 Connectivity Disturbances of the Brainstem Ascending Reticular Activating System in Epilepsy and Implications for Surgical Therapy
D. Englot

3:10-3:19 p.m.
646 Connectivity-based parcellation of the anterior limb of the internal capsule: targeting applications in psychiatric neurosurgery
P. Nanda

3:20-3:29 p.m.
653 High Resolution Micro-ECoG Studies of Human Sensorimotor Cortex during Finger Movements
C. Kuo

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:10 p.m.
660 Intraoperative Provocation Delineates Nucleus Accumbens Subregions in DBS Surgery for OCD
K. Miller

4:11-4:20 p.m.
666 Real-time MRI-guided delivery of AAV2-AADC gene therapy for Parkinson’s Disease: Infusion strategies and their impact on coverage of the putamen
P. Larson

4:21-4:30 p.m.
673 Evaluation of brain tumor regrowth in relation to motor areas — a multimodal approach
S. Krieg
4:31–4:40 p.m.
678 A novel tractography-based targeting method for focused ultrasound thalamotomy: Clinical outcomes
V. Krishna

4:41–4:49 p.m.
683 Hold that thought: Human subthalamic nucleus beta oscillations are coherent with lateral cortex during working memory inhibition.
B. Zavala

4:50–4:58 p.m.
689 Noninvasive neuromodulation and thalamic mapping with low intensity focused ultrasound
R. Dallapiazza

4:59–5:02 p.m.
694 Insights from Sham Surgery: Observer Bias and Placebo Response in Essential Tremor and Parkinson’s Disease
A. Bond

5:03–5:06 p.m.
698 Beta Oscillations and Bicoherence of Local Field Potentials in the Human Parkinson’s Disease OFF State Recorded During Deep Brain Stimulation
R. Kochanski

5:07–5:10 p.m.
701 Mammillary Body Changes After Laser Interstitial Thermal Therapy of the Mesial Temporal Lobe
S. Grewal

5:11–5:14 p.m.
703 Limbic Leucotomy for Severe Self-injurious Behavior: Long Term Follow-up of 2 Cases
E. Chen

5:15–5:18 p.m.
706 Stereotactic Radiosurgery for Spetzler-Martin Grade IV and V Arteriovenous Malformations: An International Multicenter Study
M. Patibandla
**MONDAY, APRIL 24**

5:19-5:22 p.m.
709 Acute clinical effects of stimulation in a patient with Nucleus Accumbens DBS — Insights from a structural connectivity study
V. Krishna

5:23-5:26 p.m.
712 Brief Electrical Stimulation to the Human Amygdala Enhances Recognition Memory for Neutral Images
C. Inman

5:27-5:30 p.m.
714 Hippocampal RNA Expression Varies According to Seizure Outcome and Seizure Frequency following Anterior Temporal Lobectomy with Amgydalohippocampectomy
R. Bina

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**SCIENTIFIC SESSION IV: PEDIATRICS**

**Location**: 404AB

Moderators: S. Gaskill; T. Hankinson

2-2:03 p.m.
605 Radiographic outcomes in patients with Chiari Type 1 malformation and increased pB-C2 distance without fusion
T. Minasian

2:04-2:07 p.m.
609 Vancomycin And Tobramycin Powder Use In Intrathecal Baclofen Pump Implantation: Reducing Surgical Site Infections
A. Jamshidi

2:08-2:11 p.m.
Question and Answer Session

2:12-2:15 p.m.
614 Stimulated Raman scattering microscopy provides histopathologic images for accurate intraoperative diagnosis of pediatric brain tumors
T. Hollon
2:16-2:19 p.m.
616 Alterations in Cerebral Ventricle Size Over Time in Children with Congenital Heart Disease
L. Ackerman

2:20-2:23 p.m.
Question and Answer Session

2:24-2:27 p.m.
621 Moderate-Grade Intraventricular Haemorrhage activates Cell Division in the Neonatal Mouse Subventricular one.
W. Dawes

2:28-2:31 p.m.
623 Unplanned Readmission after Craniotomy for Tumor: A National Surgical Quality Improvement Program-Pediatric Analysis
H. Dasenbrock

2:32-2:35 p.m.
Question and Answer Session

2:36-2:38 p.m.
Award Announcement: Schulman and Hydrocephalus Awards
S. Gaskill

2:39-2:42 p.m.
Introduction of Matson Lecture
S. Gaskill

2:43-3:29 p.m.
Donald D. Matson Lecture
Perception of Quality
A. Marlin

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:04 p.m.
659 Perioperative Antibiotic Use In Vagus Nerve Stimulator Implantation — A Clinical Series
J. Raskin
4:05-4:08 p.m.  
663 Early Apparent Diffusion Coefficient Changes in Normal-Appearing Brain in Pediatric Moyamoya Disease  
J. Quon

4:09-4:12 p.m.  
Question and Answer Session

4:13-4:16 p.m.  
669 Psychiatric Disorders in Children with Chiari Malformation Type I: Prevalence and Risk Factors  
D. Frim

4:17-4:20 p.m.  
670 Oberlin Neurotization Improves Early Supination Compared to Nerve Graft Repair in Neonatal Brachial Plexus Palsy  
K. Chang

4:21-4:24 p.m.  
Question and Answer Session

4:25-5 p.m.  
What I Have Seen  
W. Oakes

5:01-5:11 p.m.  
Face-off: Cystic Craniopharyngioma: Intracystic Therapy  
D. Fulkerson

5:12-5:22 p.m.  
Face-off: Cystic Craniopharyngioma: Resection  
L. Baird

5:23-5:30 p.m.  
Question and Answer Session
SCIENTIFIC SESSION V: CEREBROVASCULAR
Location: 502AB
Moderators: B. Jankowitz; H. Woo
Supported by an educational grant from Codman Neuro, part of the Johnson & Johnson family of companies.

2-2:09 p.m.
DePuy Synthes Award
604 White Blood Cell Count and Neutrophil-lymphocyte Ratio Improve Prediction of Delayed Cerebral Ischemia in Good-grade Subarachnoid Hemorrhage.
F. Al-Mufti

2:10-2:19 p.m.
611 Reduction in Mortality & Morbidity after Subarachnoid Hemorrhage between 2002-2011: A Nationwide Inpatient Sample Analysis
H. Dasenbrock

2:20-2:29 p.m.
618 Seizure Response after Radiosurgery for Cerebral Arteriovenous Malformations
A. Niranjan

2:30-2:39 p.m.
624 Dissociation of Early and Delayed Cerebral Infarction after Aneurysmal Subarachnoid Hemorrhage
O. Ayling

2:40-2:49 p.m.
629 The Benefit of Radiosurgery for ARUBA-Eligible AVMs: A Practical Analysis Over an Appropriate Follow-Up Period
D. Tonetti

2:50-2:51 p.m.
Introduction of the Yasargil Lecture
K. Cockroft

2:52-3:19 p.m.
Yasargil Lecture
Stroke: The Next Horizon in Medicine — The Game has Changed!
L. Hopkins
3:20 - 3:29 p.m.
651 Predicting Thromboembolism after Pipeline Embolization: The Importance of Assay Selection in the Interpretation of Pre-Procedural Dual Antiplatelet Inhibition
A. Malek

3:30 - 4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01 - 4:10 p.m.
658 A Pilot Study on the Safety and Efficacy of Stenting Superior Sagittal Sinus Stenosis and a New Angiographic Naming System
T. Buell

4:11 - 4:20 p.m.
664 Predictors of Hospital-Associated Complications Prolonging ICU Stay in Low-Grade aSAH Patients
N. Mouchtouris

4:21 - 4:30 p.m.
671 Transcranial Doppler Emboli Monitoring Prevents Stroke after Deployment of Flow Diverting Stents: Single Center Results from 108 Aneurysm Cases
N. Jaleel

4:31 - 5 p.m.
Innovation: from concept to clinical relevance — lessons learned
F. Charbel

5:01 - 5:10 p.m.
695 Moyamoya Disease and Pregnancy: A Single Institutional Experience in the USA
R. Qaiser

5:11 - 5:20 p.m.
702 Small Aneurysms Account for Majority and Increasing Percentage of Aneurysmal Subarachnoid Hemorrhage: a 25-Year Study
M. Bender
5:21-5:30 p.m.
710 Neurodegenerative CSF-biomarkers Tau and Amyloid Beta Predict Neurological, Neuropsychological, and Quality of Life Outcomes after Aneurysmal Subarachnoid Hemorrhage
H. Joswig

SCIENTIFIC SESSION VI: NEUROTRAUMA
Location: 411
Moderators: S. Hoffer; P. Raksin
Supported by an educational grant from Codman Neuro, part of the Johnson & Johnson family of companies.

2:09 p.m.
608 A Comparison of Digital Subtraction Angiography and CT Angiography for the Diagnosis of Penetrating Cerebrovascular Injury
W. Ares

2:10-2:19 p.m.
613 Health Care Disparities in Traumatic Brain Injury: The Effect of Insurance on Severity of Presentation
P. Kerezoudis

2:20-2:29 p.m.
620 Predicting Prognosis of Chronic Subdural Haematoma Patients — A New Scoring System
C. Kwon

2:30-2:39 p.m.
627 Clinical Correlates of Quantitative Cerebral Blood Flow using Xe-CT after Decompressive Craniectomy in Traumatic Brain injury
A. Vedantam

2:40-2:49 p.m.
630 Vascular foramina of the odontoid process: Application to better understanding type II odontoid fractures
F. Alonso

2:50-2:59 p.m.
636 Operative vs Non-operative Management of Civilian Gunshot Wounds to the Spine
P. McCunniff
3-3:09 p.m.
642 Analysis of High-Frequency PbtO2 Measures: Insights into the Treatment Threshold from “Big Data”
R. Hirschi

3:10-3:19 p.m.
647 The Utility of Preoperative Laboratory Values in Patients Undergoing Craniotomy for Subdural Hematoma
N. Lakomkin

3:20-3:29 p.m.
654 Interhemispheric Subdural Hygromas Predict Shunt-Dependent Hydrocephalus after Decompressive Craniectomy for Traumatic Brain Injury
A. Vedantam

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:10 p.m.
661 Neurological Recovery in Patients with Favorable Outcomes after Severe Traumatic Brain Injury: Implications for Decisions on Withdrawal of Care in Patients with Severe TBI
A. Vedantam

4:11-4:20 p.m.
667 Examination of the Current Role of Closed Reduction in the Management of Cervical Fracture-Dislocations
M. Branche

4:21-4:30 p.m.
672 Risk of Head and Neck Trauma in Patients with Parkinson’s Disease: A Nationwide Population-Based Study
W. Lo
4:31-4:40 p.m.  
679 Flow, Liver, Flow: The Interplay of Liver Disease and Coagulopathy in Chronic Subdural Hematoma  
J. Gernsback

4:41-4:50 p.m.  
684 Carbamylated Erythropoietin (CEPO) Promotes Neuroplasticity after Traumatic Brain Injury in Rats  
A. Mahmood

4:51-5 p.m.  
690 Electrical Modulation of the Trigeminal Nerve as a Novel Resuscitation Strategy for Acute Blood Loss  
A. Chiluwal

5-5:30 p.m.  
Miller Lecture  
Guidelines for Head Injury Management: How Can We Proceed?  
F. Servadei

SCIENTIFIC SESSION VII: SOCIOECONOMIC  
Location: 402AB  
Moderators: M. Babu; G. Murad

2-2:28 p.m.  
J. Hinsdale

2:29-2:57 p.m.  
B. Haynes

2:58-3:08 p.m.  
AANS International Travel Scholarship  
639 Minimally expensive Neurosurgery. State of the art at the public hospital of a developing country  
E. Carrasco

3:09-3:19 p.m.  
645 Enhanced Preoperative Prediction of Discharge Disposition for Neurosurgical Patients  
N. Malhotra
MONDAY, APRIL 24

3:20-3:30 p.m.
Young Neurosurgeons Abstract Award
652 Factors Associated with Burnout Among Neurosurgical Residents: A National Survey Study
F. Attenello

3:31-3:59 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4-4:10 p.m.
657 Validation of Frailty for Preoperative Risk Assessment in Neurosurgical Oncology Patients Using a National Registry
B. Youngerman

4:11-4:21 p.m.
Byron Cone Pevehouse Young Neurosurgeons Award
665 Transition-to-Practice Curriculum in Graduate Medical Education
M. Gephart

4:22-4:32 p.m.
675 Effect of an immersive preoperative virtual reality experience on patient reported outcomes: a Randomized Controlled Trial
K. Bekelis

4:33-4:43 p.m.
681 Effects of Employment Status on Surgical Effectiveness, 30-Day Readmission and Patient Reported Outcomes
O. Adogwa

4:44-4:54 p.m.
687 Postoperative Emergency Department Utilization After 7,294 Cranial Neurosurgery Procedures at a Tertiary Neuroscience Center
D. Hardesty
692 Impact of Gender Disparities on Short- and Long-Term Patient Reported Satisfaction and Outcome Measures After Elective Spine Surgery: A Single Institutional Study of 384 Patients
A. Elsamadicy

5:06-5:16 p.m.
699 Managing Concurrent Surgery: An Analysis of 1018 Neurosurgical and Spine Cases
J. Guan

5:17-5:27 p.m.
Louise Eisenhardt Travel Scholarship
707 Tracking Career Paths of Women in Neurosurgery
J. Renfrow

5:28-5:30 p.m.
Question and Answer Session

6:30-8:30 p.m.
Dinner Symposia

Novel Techniques and Strategies to Treat Spine Disease in the Aging Population
Location: Drago Centro – 525 S. Flower Street
D. Chou; D. Hoh; P. Mummaneni; P. Park; M. Wang
Ticket Required: $195
No transportation provided
Supported by an educational grant from DePuy Synthes, part of the Johnson & Johnson family of companies.
Advanced Practice Providers (APPs): Advances in Wound Closure: Improving Patient Outcomes with New Products and Techniques  
**Location:** Rosa Mexicano – 800 W. Olympic Boulevard  
**Moderators:** M. Langlois; C. Matthews  
**Ticket Required:** $85  
No transportation provided  
*Supported by an educational grant from Ethicon.*

Navigating the Basics and Innovations of Wound Healing  
V. Capasso

Surgical Microscopy: New Techniques and Technologies  
**Location:** Fleming’s — 800 W. Olympic Boulevard  
C. Charalampaki; W. Couldwell; C. David; J. Morcos  
**Ticket Required:** $195  
No transportation provided  
*Supported by an educational grant from Leica Microsystems.*

6:30–8 p.m.  
**NREF Donor Reception**  
**Location:** Olympic 3 Ballroom; JW Marriott  
By invitation only

6:30–9:30 p.m.  
**AANS Section on the History of Neurological Surgery Annual Dinner**  
**Location:** Cicada Restaurant and Club — 617 S. Olive Street  
Setti S. Rengachary, MD Memorial Lecture  
M. Zerah  
**Ticket Required:** $150  
No transportation provided

8–9:30 p.m.  
**AANS International Reception**  
**Location:** GRAMMY Museum and Target Terrace — 800 W. Olympic Boulevard  
All Attendees/Guests Must Reserve a Ticket in Advance.  
**Ticket Required:** Complimentary for International Attendees  
$25 for U.S. or Canadian Attendees  
No transportation provided
TUESDAY, APRIL 25

6:30 a.m.–4 p.m.
AANS Registration
Location: South Lobby

6:30 a.m.–5 p.m.
Speaker Ready Room
Location: 409A

7–9 a.m.
Breakfast Seminars
Ticket Required: $100
Candidate and Medical Student Ticket: $65
Breakfast will be available in the room of the session for Breakfast Seminar attendees.

201 So I Want to Write a Neurosurgical Manuscript and Make Sure it Gets Published.
Location: 402AB
E. Benzel; T. Mathiesen; A. Nanda; N. Oyesiku; J. Rutka

202 Return-to-play After Sports Injury II: Spine Injury
Location: 301AB
D. Brockmeyer; M. Groff; D. Lu; C. Notarianni; S. Prasad

203 Chiari Malformations: Diagnosis, Treatments and Failures
Location: 150BC
U. Batzdorf; D. Brockmeyer; G. Guinto-Balanzar; M. Iantosca; D. Limbrick Jr.; K. Muraszko

204 Intracranial Endoscopy
Location: 304C
A. Cohen; J. Drake; D. Jimenez; H. Schroeder; A. Wang

205 Management of Acute Spinal Cord Injury
Location: 406AB
R. Anderson; M. Fehlings; G. Hawryluk; F. Jian; A. Levi; E. Tsai

206 Pituitary Tumors
Location: 505
M. Aghi; D. Banerji; L. Cavallo; W. Couldwell; D. Prevedello; A. Suri
207 New Innovations in Epilepsy Surgery  
Location: 304AB  
D. Adelson; N. Barbaro; P. Chandra; R. Gross; J. Willie

208 Endovascular vs. Microsurgical Techniques for the Optimal Treatment of Intracranial Aneurysms  
Location: 501BC  
R. Armonda; A. Arthur; M. Baskaya; M. Bruneau; C. Cawley; J. Laidlaw

209 Cavernous Malformation: Current Controversies in Management  
Location: 409B  
M. Gunel; K. Hongo; A. Krisht; M. Lawton; R. Scott; G. Steinberg

210 Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications  
Location: 404AB  
C. Branch Jr.; R. Fessler; K. Foley; D. Hart; P. Park; L. Tumialan

211 Remove, Radiate or Just Observe: Acoustic Tumors  
Location: 407  
P. Camarata; M. Link; S. Nair; J. Regis; A. Samii; M. Schwartz

212 Controversies in the Management of Intracerebral Hematomas  
Location: 411  
I. Awad; E. Connolly Jr.; N. Martin; I. Ng; R. Thompson

213 Contemporary Management for Adult Hydrocephalus  
Location: 410  
M. Johnson; M. Juhler; P. Klinge; M. Luciano; G. McKhann II; M. Vukic; J. White

214 Contemporary Management of Spinal Fractures  
Location: 150A  
S. Casha; B. Meyer; C. Sansur; N. Theodore; C. Thome; G. Trost
215 Attaining a Solid Fusion: Evidence Review and Suggestions for Success
Location: 303AB
P. Angevine; R. Fessler; K. Fu; A. Levi; M. Oppenlander

216 Functional Mapping of the Cerebral Cortex: Advantages and Limitations
Location: 501A
W. Boling; R. Byrne; E. Chang; I. Germano; D. Silbergeld

217 Malignant Brain Tumors: State-of-the-art Treatment
Location: 306AB
G. Dunn; P. Fecci; M. Ivan; L. Liau; C. Watts; G. Woodworth

218 Measuring Outcomes and Safety in Neurosurgery
Location: 507
A. Asher; A. Boulos; M. Bydon; J. Knightly; J. Slotkin

219 Global Neurosurgery
Location: 309
R. Dempsey; B. Green; M. Haglund; P. Nakaji; J. Rock

220 Management of Cranial Incidental Imaging Findings
Location: 506
S. Amin-Hanjani; S. Haines; T. Joerg-Christian; S. Kuroda; C. Maher; M. Niemela

9 a.m.–4:15 p.m.
AANS Exhibit Hall and Learning Center
Location: Exhibit Hall GHJ

9 a.m.–9:45 a.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ
9:35 a.m.-1 p.m.
**Plenary Session II**
*Location: Exhibit Hall K*
*Moderators: F. Boop; J. Morcos*

**9:35-9:44 a.m.**
**Historical Film: Neurosurgeons in the Movies — Narrated by F. Boop**
*Non-CME Event*

**9:45-9:47 a.m.**
**Introduction of the Schneider Lecture**
A. Abosch

**9:48-10:26 a.m.**
**Richard C. Schneider Lecture**
**Bioelectronic Medicine: Implantable Devices to Replace Drugs**
K. Tracey

**10:27-10:35 a.m.**
**Late Breaking Abstract**
842 Prospective Randomized 10-Year Trial Results from BRYAN Cervical Disc Arthroplasty versus Anterior Cervical Fusion
A. Levi

**10:36-10:44 a.m.**
**Late Breaking Abstract**
843 Deep Brain Stimulation for Hypertension: A Proof-of-Concept Study in Five Patients
J. Miller

**10:45-10:53 a.m.**
**Best International Abstract Award**
800 A Pilot Study of Deep Brain Stimulation in Treatment Resistant Schizophrenia
L. Salgado Lopez

**10:54-10:55 a.m.**
**Assessment of the Trial Design/Level of Evidence**
F. Barker
10:56-10:58 a.m.
Discussant
S. Sheth

10:59-11:01 a.m.
Introduction of International Lifetime Recognition Award
C. Loftus

11:02-11:04 a.m.
International Lifetime Recognition Award
J. Grotenhuis

11:05-11:15 a.m.
AANS Featured Speaker
J. Grotenhuis

11:16-11:24 a.m.
801 Southwestern Aneurysm Severity Index (SASI) for Predicting Outcomes in Unruptured Intracranial Aneurysms treated with Microsurgery
V. Ban

11:25-11:26 a.m.
Assessment of the Trial Design/Level of Evidence
F. Barker

11:27-11:29 a.m.
Discussant
F. Charbel

11:30-11:32 a.m.
NREF Update
F. Boop

11:33-11:41 a.m.
ThinkFirst Injury Prevention Award
802 Internal Jugular Vein Compression: A Novel approach to mitigate blast induced hearing injury
B. Sindelar

11:42-11:43 a.m.
Assessment of the Trial Design/Level of Evidence
F. Barker
11:44-11:46 a.m.
**Discussant**
S. Timmons

11:47-11:50 a.m.
**CNS Update**
A. Scarrow

11:51-11:53 a.m.
**Introduction of Cushing Medalist**
J. Morcos

11:54-11:56 a.m.
**Cushing Medalist**
R. Spetzler

11:57-11:59 a.m.
**Introduction of Cushing Orator**
F. Boop

12-1 p.m.
**Cushing Oration**
*Non-CME Event*
M. Whitman

1:01-1:02 p.m.
**Introduction of Lunch-and-learn Seminars**
A. Abosch

1-2 p.m.
**Lunch in the AANS Exhibit Hall**
*Location: Exhibit Hall GHJ*

1:10-1:55 p.m.
**Lunch-and-learn Seminars**
*Non-CME Events*

**What is the Next Evolution of Multi-Modality Imaging and Robotics in Neurosurgery?**
*Location: 306AB*
J. Bederson; C. Hadjipanayis; M. Lawton; P. Nakaji
*Presented by Carl Zeiss Meditec, Inc.*
Spinal Cord Stimulation — High Dose? Low Dose? Apply the Right Dose for the Right Patient
Location: 304AB
A. El-Naggar; S. Falowski
Presented by Medtronic

Location: 303AB
B. Kopell; P. Larson; J. Vesper
Presented by Abbott

Minimally Invasive Sacroiliac Joint Fusion, Radiofrequency Denervation and Conservative Management for Sacroiliac Joint Pain: Six Year Comparative Study
Location: 301AB
V. Vanaclocha
Presented by SI-BONE, Inc.

Deep Brain Stimulation: Combining Speed and Precision
Location: 309
Presented by Siemens Healthineers

1:15-2:45 p.m.
Young Neurosurgeons Luncheon
Location: Platinum Ballroom Salon FGH; JW Marriott

Concussion: Perfect Storm
R. Ellenbogen
Ticket Required: $10

2-3:30 p.m.
3-D Session
Operative Nuances II: How to Stay out of Trouble During Microsurgery
Location: 152/153
A. Cohen-Gadol; M. Lawton; C. Maher; R. Spetzler
AANS SECTION ON THE HISTORY OF NEUROLOGICAL SURGERY

Location: 402AB

Moderators: C. Prestigiacomo; M. Preul

2-2:40 p.m.
Horsley History Lecture
From Prometheus to Apollo — Phantasmatic Imagery in Neurosurgery

M. Zerah

2:41-2:56 p.m.
Question and Answer Session

2:47-3:07 p.m.
803 Brachial Plexus Injury and the Road to World War I

Z. Hubbard

3:08-3:18 p.m.
804 From Hippocrates to Shunts and Neuroendoscopy: the History of Hydrocephalus and its Treatment

A. Amr

3:19-3:29 p.m.
805 Niccolò Massa (1485–1569), a Renowned Anatomist of Medical Renaissance in Sixteenth Century and Discovery of Cerebrospinal Fluid in Brain

S. Bir

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:11 p.m.
806 Charles E. Locke Jr. (1895-1929): Ohio’s First Neurosurgeon

P. Soni
4:12-4:22 p.m.
809 Winston Churchill: The Effect of his Health on his Leadership and of his Leadership on his Health
G. Rosseau

4:23-4:33 p.m.
811 The First Successful Primary Brain Tumor Removal: “An Idea Whose Time Has Come”
T. Maiti

4:34-4:44 p.m.
815 Neurosurgery-ENT hand shake in the 20th century: Catalyst for the Modern Day Skull Base Evolution
J. Thakur

4:45-4:55 p.m.
820 Extraordinary Measures: Harvey Cushing’s Early Struggle with Patient Mortality and End-of-Life Care
C. Pendleton

4:56-5:06 p.m.
825 Origins of “HHH” Therapy for SAH Vasospasm: Thoralf M. Sundt Jr., MD
K. Gassie

5:07-5:17 p.m.
830 The Leg Injury of Philip II of Macedon with a Focus on Peripheral Nerve Injuries and Contemporary Treatment
N. Brandmeir

5:18-5:30 p.m.
Question and Answer Session
AANS/CNS SECTION ON PAIN

Location: 406AB
Moderator: J. Schwalb

2-2:34 p.m.
John Loeser Lecture
Peripheral Nerve Stimulation: History, Present and Future
K. Slavin

2:35-2:39 p.m.
Question and Answer Session

2:40-2:56 p.m.
Dorsal Column Stimulation
S. Nagel

2:57-3:13 p.m.
Dorsal Root Ganglion Stimulation
E. Petersen

3:14-3:29 p.m.
Deep Brain Stimulation
A. Machado

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:15 p.m.
Motor Cortex Stimulation
C. Hamani

4:16-4:30 p.m.
Debate With all Speakers

4:31 - 4:40 p.m.
William H. Sweet Young Investigator Award
813 Misdiagnosis is a Prevalent Cause of Inappropriate Lumbar Spine Surgery
V. Yanamadala, MD
4:41-4:50 p.m.
817 Prospective comparison of long-term pain relief rates after first-time microvascular decompression and stereotactic radiosurgery for trigeminal neuralgia
D. Wang

4:51-5 p.m.
822 Prediction of Clinical Outcomes after Transforaminal Lumbar Interbody Fusions Based on Preoperative Opioid Use
A. Villavicencio

5:01-5:04 p.m.
841 The Effects of Anterior Cingulotomy on Pain, Cognition and Sensory Pathway
G. Wang

5:05-5:08 p.m.
828 Spinal Cord Stimulation (SCS) Infection Rate and Incremental Annual Expenditures: Results from a US Payer Database
S. Falowski

5:09-5:12 p.m.
831 Adverse Events, Readmission, & Reoperation after Microvascular Decompression: A National Surgical Quality Improvement Program Analysis
H. Dasenbrock

5:13-5:16 p.m.
834 Mice with experimental autoimmune encephalomyelitis manifest increased pain: role of plasma membrane calcium ATPase 2
E. Mirabelli

5:17-5:20 p.m.
836 Ovarian Hormones Differentially Affect Pain Responsiveness in Plasma Membrane Calcium ATPase 2 (PMCA2) Heterozygous Mice
V. Khariv
5:21-5:24 p.m.  
837 Microvascular decompression and tractotomy in cases of intractable and recurrent trigeminal neuralgia  
D. Li

5:25-5:28 p.m.  
840 Pain Free Survival After Sectioning of the Nervus Intermedius in Nervus Intermedius Neuralgia  
K. Holste

5:29-5:30 p.m.  
Question and Answer Session

SECTION SESSION

AANS/CNS SECTION ON PEDIATRIC NEUROLOGICAL SURGERY

Location: 404AB  
Moderators: J. Chern; L. Governale; J. Smith

2:20-2:41 p.m.  
Topic Review: Pediatric Radiology Update — Epilepsy  
M. Nelson

2:42-2:57 p.m.  
Question and Answer Session

2:58-3:18 p.m.  
QI Projects in Neurosurgery  
N. Martin

3:19-3:29 p.m.  
Question and Answer Session
3:30-4 p.m.  
**Beverage Break in the AANS Exhibit Hall**  
*Location: Exhibit Hall GHJ*

**4:01-4:11 p.m.**  
**Face-Off: Moyamoya Disease — Direct Bypass**  
G. Steinberg

**4:12-4:22 p.m.**  
**Face-off: Moyamoya Disease — Indirect Bypass**  
R. Dauser

**4:23 - 4:30 p.m.**  
**Question and Answer Session**

**4:31-4:35 p.m.**  
**812 Comparing Resting State Functional Magnetic Resonance Imaging to Invasive Electro cortical Stimulation Mapping in Pediatric Patients**  
J. Roland

**4:36-4:40 p.m.**  
**816 Percutaneous Doxycycline Treatment: A Novel Approach to Aneurysmal Bone Cysts of the Spine**  
D. Dornbos III

**4:41-4:45 p.m.**  
**818 Language lateralization with resting state and task-based functional MRI in pediatric epilepsy**  
V. Desai

**4:46-4:50 p.m.**  
**821 Correlation of fetal MRI findings with need for postnatal VP shunt placement in children born with myelomeningocele**  
S. Magge

**4:51-4:55 p.m.**  
**823 Quality of Life after Single Level Selective Dorsal Rhizotomy in Ambulant Children with Cerebral Palsy**  
S. Wahab
4:56-5 p.m.
Question and Answer Session

5:01-5:05 p.m.
826 Long-term Outcome Analysis of Children Presenting with Traumatic Brain Injury Secondary to Nonaccidental Trauma
S. Lehnert

5:06-5:10 p.m.
829 Expanding the Applications of Responsive Neurostimulation: Early Experience in Pediatric Patients
S. Ghatan

5:11-5:15 p.m.
832 Endoscopic Third Ventriculostomy in Paediatric Post Infective Hydrocephalus
D. Ochieng

5:16-5:20 p.m.
835 Reduced Cortical Mantle Size when Treated with Early Endoscopic Third Ventriculostomy in Pediatric Patients
R. Hwang

5:21-5:25 p.m.
838 Reduced Cell Attachment to Poly(2-hydroxyethyl methacrylate) — Coated Ventricular Catheters in Vitro
B. Hanak

5:26-5:30 p.m.
Question and Answer Session
2-2:12 p.m.
Sagittal Balance: Critical for the Success of Short Segment Fusions
M. Wang

2:13-2:25 p.m.
Sagittal Balance: Importance is Over-rated in Short Segment Fusions
W. Welch

2:26-2:38 p.m.
Minimally Invasive Vs. Open TLIF — What Drives the Choice of Approach?
P. Mummaneni

2:39-2:51 p.m.
Improving Sagittal Balance from the Lateral Approach — Is This Possible Without Release of the Anterior Longitudinal Ligament?
J. Uribe

2:52-3:04 p.m.
Expandable vs Static TLIF Spacers and Sagittal Balance — Is it Worth the Added Cost?
D. Coric

3:05-3:17 p.m.
1-2 level ALIF and Sagittal Balance — Technical Nuances
T. Koski

3:18-3:33 p.m.
Question and Answer Session

3:34-3:59 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ
4:42-4:12 p.m.  
Geriatric Odontoid Fracture: Posterior Fixation  
S. Prasad

4:13-4:25 p.m.  
Geriatric Odontoid Fracture: Anterior Fixation  
A. Dailey

4:26-4:38 p.m.  
Treatment of Midcervical Fractures in the Elderly  
S. Dhall

4:39-4:51 p.m.  
Treatment of Cervicothoracic Fractures in the Elderly: Lessons Learned  
C. Shaffrey

4:52-5:04 p.m.  
Geriatric Cervical Spondylotic Myelopathy: Anterior Approach  
I. Kalfas

5:05-5:17 p.m.  
Geriatric Cervical Spondylotic Myelopathy: Posterior Approach  
M. Fehlings

5:18-5:30 p.m.  
Question and Answer Session

SECTION SESSION

AANS/CNS SECTION ON TUMORS I  
PERIOPERATIVE BRAIN TUMOR MANAGEMENT AND ITS IMPACT ON QOL

Location: 408AB  
Moderator: S. Hervey-Jumper; S. Kalkanis

2-2:04 p.m.  
Introduction  
S. Hervey-Jumper

2:05-2:21 p.m.  
Quality of Life Consideration for Adult Brain Tumor Management: Current Knowledge and Future Directions  
T. Armstrong
2:22-2:38 p.m.
Intraoperative Brain Mapping and Functional Outcome Assessments
R. Byrne

2:39-2:55 p.m.
Language Function After Perioperative Mapping and Tumor Resection
E. Chang

2:56-3:12 p.m.
Novel and Emerging Central Nervous System Imaging Modalities
C. Piron

3:13-3:29 p.m.
QOL measures in Brain Tumor Management: What’s the Value?
A. Asher

3:30-4 p.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ

4:01-4:10 p.m.
Journal of Neuro-oncology Award sponsored by Kluwer Academic Publishers
807 Seizure outcome after surgical resection of insular glioma
D. Wang

4:11-4:20 p.m.
808 Long-term follow-up data from 123 patients with recurrent high grade glioma from three Phase 1 trials of Toca 511 and Toca FC: Update and justification for a Phase 2/3 trial
M. Aghi

4:21-4:30 p.m.
BrainLab Neurosurgery Award
810 Plasticity of motor representations in patients with brain lesions: a navigated TMS study
S. Krieg
4:31-4:40 p.m.
814 Intra-tumoral Infusion of DNAtrix’s Oncolytic Adenovirus DNX-2401 Using Alcyone’s Micro-fabricated Cannula
D. Singh

4:41-4:50 p.m.
819 Targeted Nanoparticle-based Vehicle for Delivery of Small Molecule Inhibitors to Primary and Metastatic Brain Tumors
R. Juthani

4:51-5 p.m.
824 Surgical Outcome of Adult Hemispheric Glioblastoma is Determined by the Molecular-Subset: An Analysis of 142 Patients.
K. Ozduman

5:01-5:10 p.m.
827 Atypical Pituitary Adenoma: a Clinicopathologic Case Series
M. Rutkowski

5:11-5:20 p.m.
833 Nanobioconjugate for targeting of laminin-411–Notch signaling alters glioma microenvironment for tumor growth suppression
J. Ljubimova

5:21-5:30 p.m.
Leksell Radiosurgery Award
839 Early versus Late Gamma Knife radiosurgery following transsphenoidal surgery for nonfunctioning pituitary macroadenomas: a matched multi-center cohort study
J. Sheehan
2-5:30 p.m.
**Advancements in Neurotrauma Care**
*Location: 501BC*

S. Bulic; E. Kiehna; M. Langlois; C. Matthews; C. Schirmer; J. Shin; J. Ullman

*Supported by an educational grant from Codman Neuro, part of the Johnson & Johnson family of companies.*

**Ticket Required $100**

3:30-4 p.m.
**Beverage Break in the AANS Exhibit Hall**
*Location: Exhibit Hall GHJ*

6:30-8:30 p.m.
**Dinner Symposia**

**Career Advancement to Health System Leadership**
*Location: The Palm – 1100 S. Flower Street*

G. Barnett; M. Lester; K. Muraszko; S. Taylor; E. Zusman

**Ticket Required $195**

No transportation provided

*Supported by an educational grant from Rosman Research.*

**New Solutions for Aneurysm Treatment**
*Location: Faith & Flower – 705 W. 9th Street*

A. Arthur; M. Aziz-Sultan; D. Hoit; C. McDougall; H. Woo

**Ticket Required $195**

No transportation provided
NEUROSURGERY
THE PRIVILEGE OF SERVICE
APRIL 28-MAY 2 • NEW ORLEANS

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WEDNESDAY, APRIL 26

6:30 a.m.-3:30 p.m.
AANS Registration
Location: South Lobby

6:30 a.m.-5 p.m.
Speaker Ready Room
Location: 409A

7-9 a.m.
Breakfast Seminars
Ticket Required: $100
Candidate and Medical Student Ticket: $65
Breakfast will be available in the room of the session for Breakfast Seminar attendees.

301 ABNS Board Preparation: What You Must Know
Location: 306AB
J. Bruce; D. Kondziolka; A. Nanda; B. Thompson Jr.

302 Surgical Treatment of Parkinson’s Disease
Location: 501A
E. Air; D. Darrow; J. Jagid; J. Pilitsis; T. Sajko

303 Shoulder vs. Spine: Differentiating Shoulder and Cervical Spine Pathology
Location: 406AB
N. Brooks; J. Burke; A. Levi; M. Smith; B. Subach; T. Witham

304 Management of Vasospasm
Location: 402AB
R. Du; A. Dumont; B. Hoh; P. Le Roux; R. Macdonald; M. Sames

305 Management of Pediatric Epilepsy
Location: 407
S. Bhatia; J. Blount; D. Curry; A. Fieggen; E. Kiehna; G. Lo Russo

306 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices
Location: 301AB
M. Abou-Samra; T. Payner; M. Shah; A. Stroink; E. Zusman

307 Neurosurgical Management of Intractable Pain
Location: 410
E. Air; J. Miller; A. Raslan; K. Slavin; J. Vesper
308 Stem Cell Therapeutics in Neurosurgery  
*Location*: 411  
J. Boockvar; N. Boulis; P. Dirks; A. Parr; N. Selden; G. Steinberg

309 Controversies in Cerebrovascular and Endovascular Neurosurgery  
*Location*: 150A  
K. Cockroft; F. Goncalves-Llanos; D. Langer; C. Schirmer; E. Veznedaroglu

310 The Spectrum of Adjuvant Therapy for Brain Tumors  
*Location*: 507  
S. Chang; R. Jensen; F. Lang Jr.; I. Nakano; R. Rola; J. Sampson

311 Suprasellar and Juxtasellar Tumors: Complications and Avoidance  
*Location*: 304AB  
K. Arnautovic; K. Aziz; L. Cavallo; A. Dehdashti; P. Theodosopoulos

312 Management of Adult Scoliosis  
*Location*: 501BC  
P. Angevine; T. Koski; F. La Marca; P. Mummaneni; D. Okonkwo; E. Tessitore

313 New and Evolving Technologies for Minimally Invasive Lumbar Disc Surgery  
*Location*: 150BC  
C. Branch Jr.; R. Fessler; J. Mobasser; L. Tumialan; M. Wang

314 Cerebral Trauma: State-of-the-art Treatment  
*Location*: 404AB  
M. Bullock; G. Hawryluk; D. Michael; A. Rubiano; F. Servadei

315 Tumor-related Epilepsy  
*Location*: 304C  
M. Berger; R. Byrne; E. Chang; J. Politsky

316 Lumbar Spine Fusion Indications and Complications  
*Location*: 303AB  
A. Dailey; M. Finn; R. Heary; E. Massicotte; B. Meyer; J. O’Shea
317 Selecting Anterior Approaches for Cerebrovascular Surgery: From Eyebrow to OZ — Pros and Cons of Minimally Invasive Keyhole Approaches for Cerebrovascular Surgery
Location: 409B
K. Aziz; J. Delashaw Jr; A. Krisht; P. Nakaji; G. Pradilla; L. Sekhar

318 The Use of Opioids in Neurosurgical Practice: How to be Safe, Effective and Compliant with New Prescribing Laws
Location: 309
F. Ferrante; J. Ing; J. Schwalb; C. Winfree

319 The FDA: Investigational Device Exemptions, Regulatory Process and Moving Medical Devices to Patients
Location: 505
A. Abosch; M. Bydon; R. Heary; C. Hill; C. Loftus; C. Pena; W. Welch; X. Zheng

7:30-9 a.m.
AANS/CNS Section on Women in Neurosurgery (WINS) Breakfast
Location: Platinum Ballroom Salon FG; JW Marriott

Honoring the Louise Eisenhardt Lecturer, Amy Cuddy, PhD

9 a.m.-2:15 p.m.
AANS Exhibit Hall and Learning Center
Location: Exhibit Hall GHJ

9-9:45 a.m.
Beverage Break in the AANS Exhibit Hall
Location: Exhibit Hall GHJ
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 9:35 - 9:44 a.m. | **Historical Film: Los Angeles History of Neurosurgery — Narrated by M. Weiss**  
(Non-CME Event) |
| 9:45 - 9:47 a.m. | **Introduction of Louise Eisenhardt Lecture**  
S. Wolfe |
| 9:48 - 10:18 a.m. | **Louise Eisenhardt Lecture**  
**Presence: Bringing Your Boldest Self to Your Biggest Challenges**  
A. Cuddy |
J. Chan |
| 10:29 - 10:30 a.m. | **Assessment of the Trial Design/Level of Evidence**  
J. Kestle |
| 10:31 - 10:33 a.m. | **Discussant**  
R. Spinner |
| 10:34 - 10:43 a.m. | **Integra Foundation Award**  
**901 Clinical and Molecular Features of Genomic Subgroups in Meningioma**  
M. Youngblood |
| 10:44 - 10:45 a.m. | **Assessment of the Trial Design/Level of Evidence**  
J. Kestle |
10:46-10:48 a.m.  
Discussant  
D. Cahill

10:49-10:51 a.m.  
Introduction of Rhoton Family Lecture  
J. Morcos

10:52-11:22 a.m.  
Rhoton Family Lecture  
Memories of a Giant — Al Rhoton and Sculpting the Brain like Michelangelo  
E. de Oliveira

11:23-11:32 a.m.  
902 Patients with High Pelvic Tilt Achieve the Same Clinical Success as Those with Low Pelvic Tilt After Minimally Invasive Deformity Surgery  
J. Uribe

11:33-11:34 a.m.  
Assessment of the Trial Design/Level of Evidence  
J. Kestle

11:35-11:37 a.m.  
Discussant  
R. Heary

11:38-11:47 a.m.  
903 First 50 Fetal In-Utero Microsurgical Myelomeningocele Repairs: Critical Comparison of Neurosurgical and Maternal Outcomes to The MOMS Trial.  
S. Elbabaa

11:48-11:49 a.m.  
Assessment of the Trial Design/Level of Evidence  
J. Kestle

11:50-11:52 a.m.  
Discussant  
M. Handler
11:53-11:55 a.m.  
**Introduction of Humanitarian Award**
F. Boop

11:56-11:59 a.m.  
**Humanitarian Award**
J. Ragheb

12-12:02 p.m.  
**Introduction of Van Wagenen Lecture**
S. Haines

12:03-12:23 p.m.  
**Van Wagenen Lecture**  
*From Reactive Gliosis to Neural Repair*
M. Goetz

12:24-12:33 p.m.  
**Robert Florin Award**  
917 Overlapping Surgeries are not Associated with Worse Patient Outcomes: Retrospective Multivariate Analysis of 14,872 Neurosurgical Cases Performed at a Single Institution
M. Bohl

12:34-12:35 p.m.  
**Assessment of the Trial Design/Level of Evidence**
J. Kestle

12:36-12:38 p.m.  
**Discussant**
R. Harbaugh

12:39-12:48 p.m.  
925 Ventral capsular / ventral striatal deep brain stimulation for the affective sphere of neuropathic pain: a first-in-human prospective, randomized double-blinded placebo-controlled trial
A. Machado
12:49-12:50 p.m.
Assessment of the Trial Design/Level of Evidence
J. Kestle

12:51-12:53 p.m.
Discussant
J. Pilitsis

12:54-12:56 p.m.
Introduction of Incoming AANS President
F. Boop

12:57-1 p.m.
2017/2018 AANS President
A. Valadka

12-1 p.m.
NEW! Rapid Fire Abstract Session:
Tumor And Cerebrovascular
Location: 409B
Moderators: A. Arthur; A. Kim; A. Wang

12-12:03 p.m.
973 Loss of subcortical language pathways correlates with surgery-related aphasia in brain tumor patients: an investigation via rTMS-based DTI fiber tracking
S. Ille

12:04-12:07 p.m.
907 Bone Marrow Response as a Potential Biomarker of Outcomes in Glioblastoma Patients
E. Vaios

12:08-12:11 p.m.
909 Impact of Exosomes on Radiation Resistance and Cellular Proliferation in Cancer
O. Mrowczynski

12:45-2 p.m.
Lunch in the AANS Exhibit Hall
Location: Exhibit Hall GHJ
12:12-12:15 p.m.
911 Near Infrared Fluorescent Guided Brain Tumor Surgery – Human Clinical Trial Results
J. Lee

12:16-12:19 p.m.
913 The Morbidity Profile of Transsylvian vs. Transcortical Approaches to Pure Insular Gliomas
C. Przybylowski

12:20-12:23 p.m.
915 Radiographic parameterization of the subventricular zone distance reveals associations with survival and gene expression in glioblastoma
T. Steed

12:24-12:27 p.m.
918 Role of a p53 polymorphism in the development of nonfunctional pituitary adenomas
A. Jahangiri

12:28-12:31 p.m.
920 Analysis of tumor and microenvironment in IDH1-mutant gliomas using single cell transcriptome analysis
A. Venteicher

12:32-12:35 p.m.
921 Calpain Inhibition Improves Brain White Matter Damage in a Mouse Model of Subarachnoid Hemorrhage
R. Macdonald

12:36-12:39 p.m.
923 Microsurgical and Endovascular Aneurysm Training in a Chicken Thigh and Leg Pulsatile Model
O. Tanweer

12:40-12:43 p.m.
926 Robotically-Assisted Cerebral Angiography and Intracranial Intervention: Initial Experience with the Magellan Catheter System
C. Carroll
12:44-12:47 p.m.
928 Natural History of Patients with Hemorrhagic Moyamoya Disease: A Long-term Follow-up study
X. Liu

12:48-12:51 p.m.
929 Alpha7 Nicotinic Acetylcholine Receptor Stimulation Attenuates Neuroinflammation in Murine Intracerebral Hemorrhage
P. Krafft

12:52-12:55 p.m.
931 Applications of the Apollo Detachable Tip Microcatheter for Endovascular Embolization of Arteriovenous Malformations and Arteriovenous Fistulas: The BNI Experience
A. See

12:56-12:59 p.m.
933 Distinct Transcriptional Modules Define Cerebral Aneurysm Formation and Aneurysm Rupture
T. Azad

RAPID FIRE SESSIONS

12-1 p.m.
NEW! Rapid Fire Abstract Session: Pediatrics and Stereotactic and Functional
Location: 410
Moderators: S. Gaskill; D. Michael

12-12:03 p.m.
904 Expression of the Caspase Signalling Pathway in Chronic Subdural Haematoma Outer Membranes
K. Osuka

12:04-1:07 p.m.
906 The “Crumple Zone” Hypothesis: Association of Frontal Sinus Volume and Cerebral Injury after Craniofacial Trauma
C. Mossop
12:08-12:11 p.m.
908 Big data analysis of Neurosurgical Intensive Care Unit GCS scores reveals redundancy and suggests opportunities for improvement in NSICU GCS measurements
A. Costa

12:12-12:15 p.m.
910 ATP Induces Disruption of Tight Junction Proteins via IL-1beta-dependent MMP-9 Activation of Human Blood Brain Barrier in vitro
J. Zhang

12:16-12:19 p.m.
912 A Predictive Model Incorporating Thromboelastography that Accurately Predicts Preadmission-Aspirin Use in Traumatic Brain Injury Patients
S. Mendenhall

12:20-12:23 p.m.
914 Long-term Comorbidities Associated with Children Presenting with Traumatic Brain Injury Secondary to Nonaccidental Trauma
S. Lehnert

12:24-12:27 p.m.
916 How Enactments of Traumatic Brain Injury Laws Have Effected Concussions Suffered by High School Athletes
M. Schallmo

12:28-12:31 p.m.
919 Predictors of Mortality in Children with Concurrent Spina Bifida and Chiari II Malformation
M. McDowell

12:32-12:35 p.m.
922 Differences in the MicroCT Morphology and mRNA Expression in the Sagittal Suture of Normal and Craniosynostotic Bone
R. Vega
12:36-12:39 p.m.
924 Use of a Preoperative Bundle to Prevent Pediatric Neurosurgical Infections
H. Waseem

12:40-12:43 p.m.
927 Auditory-Cued Naming as an Optimal Paradigm for the Mapping of Human Language
C. Kadipasaoglu

12:44-12:47 p.m.
Surgical Management of Intractable Epilepsy: Nationwide Rates, Causes, Risk Factors, and Outcomes Associated With 30-day and 90-day Readmission
K. Rumalla

12:48-12:51 p.m.
930 Conceptual Processing in the Basal Temporal Language Area
K. Forseth

12:52-12:55 p.m.
932 Major Complications Following Microvascular Decompression: 6-Year Incidence and Predictive Risk Factors
N. Lakomkin

12:56-12:59 p.m.
934 Neurophysiological analysis of subthalamic deep brain stimulation for Parkinson’s disease between general and local anesthesia: pattern shift of physiological signatures by anesthesia
S. Tsai
AANS/CNS CEREBROVASCULAR SECTION
Location: 502AB
Moderators: M. Lawton; A. Thomas; R. Williamson Jr.

2-2:05 p.m.
Introduction of Donaghy Lecture
K. Cockroft

2:06-2:35 p.m.
Donaghy Lecture
The Journey of Re-Inventing Neurovascular Surgery
R. Rosenwasser

2:36-2:41 p.m.
935 Declining Complication Rates with Flow Diversion of Anterior Circulation Aneurysms after Introduction of Pipeline Flex
M. Bender

2:42-2:47 p.m.
936 Venous Thromboembolism Complications in Patients with Spontaneous Intracerebral Hemorrhage: A Multicenter Cohort Study
D. Ding

2:48-2:53 p.m.
937 The Therapeutic Challenge to Large Arteriovenous Malformations: Volume-Staged or Single-Session Gamma Knife
H. Hasegawa

2:54-2:59 p.m.
939 Bridging the Gender Gap: Pharmacokinetic Differences Underlying Thrombolysis by Aptamer Inhibition of Von Willebrand Factor
D. Dornbos III

3-3:05 p.m.
940 Angiographic Flow Index on DSA Correlates with Cerebral Flow Measured by Quantitative MRA
A. Hussein
3:06–3:11 p.m.
942 Role of brain hemostatic system in cerebrospinal fluid abnormalities following subarachnoid hemorrhage
G. Britz

3:12–3:22 p.m.
Discussion

3:23–3:48 p.m.
Debate: Optimizing Cerebrovascular Training
F. Albuquerque; A. Day; R. Harbaugh

3:49–4:14 p.m.
BNI 3.0 — Strategic Plan for Neurosurgical Care, Teaching, and Research
M. Lawton

4:15–4:29 p.m.
Discussion

4:30–5 p.m.
Business Meeting

SECTION SESSION

AANS/CNS SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES — PERIPHERAL NERVES SECTION
Location: 402AB
Moderators: H. Gilmer; L. Jacques; M. Mahan;

2–2:03 p.m.
Introduction of Kline Lecture
E. Zager

2:03–2:48 p.m.
Kline Lecture
Advances in Nerve Repair: Experimental and Clinical
R. Midha

2:49–3:04 p.m.
Sport Related Peripheral Nerve Injury
R. Spinner
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Presenter(s)</th>
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<tr>
<td>3:05-3:10 p.m.</td>
<td>Commentary</td>
<td>E. Zager</td>
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<tr>
<td>3:11-3:26 p.m.</td>
<td>Update on Peripheral Nerve Regeneration</td>
<td>W. Ray</td>
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<tr>
<td>3:27-3:32 p.m.</td>
<td>Commentary</td>
<td>R. Midha</td>
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<tr>
<td>3:33-3:48 p.m.</td>
<td>Thoracic Outlet Syndrome: 20 Year Experience</td>
<td>A. Dubuisson</td>
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<td>3:49-3:54 p.m.</td>
<td>Commentary</td>
<td>A. Belzberg</td>
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<tr>
<td>4:16-4:24 p.m.</td>
<td>955 Trends in Upper Extremity Nerve Injury using the National Inpatient Sample Database</td>
<td>M. Karsy</td>
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<td>4:25-4:33 p.m.</td>
<td>959 Pathologic Organization of Laminin in Regeneration after Human Peripheral Nerve Injury</td>
<td>M. Karsy</td>
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<tr>
<td>4:34-4:42 p.m.</td>
<td>963 Anti-Apoptotic Effect of G-CSF on Spinal (\alpha)-Motoneurons after Traumatic Nerve Lesion</td>
<td>D. Keiner</td>
</tr>
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</table>
4:43–4:51 p.m.
967 First Human Experience with Autologous Schwann Cells to Supplement Sciatic Nerve Repair: Long-term Follow-up in Two Cases
S. Burks

4:52–5 p.m.
971 Electrical Stimulation of the spinal cord as a Therapeutic Modality to treat Amyotrophic Lateral Sclerosis
R. Greene

SECTION SESSION

AANS/CNS SECTION ON STEREOTACTIC AND FUNCTIONAL SURGERY
Location: 406AB
Moderators: J. Miller; N. Pouratian

2–2:04 p.m.
Introduction
N. Pouratian; J. Miller

2:05–2:20 p.m.
Patient Selection and Biomarkers for Deep Brain Stimulation
P. Starr

2:21–2:36 p.m.
Big Data and Neurosurgery
P. Konrad

2:37–2:52 p.m.
Advanced Imaging in Functional Neurosurgery
A. Abosch

2:53–3:08 p.m.
Advanced Imaging in Functional Neurosurgery
J. Gonzalez-Martinez

3:09–3:24 p.m.
Neurosurgical Face-off: The Future of Neuromodulation is Invasive
R. Gross
Neurosurgical Face-off: The Future of Neuromodulation is Non-Invasive
I. Cook

946 Single-neuron correlates of error and conflict monitoring in the human medial frontal cortex
Z. Fu

948 Neuronal mechanisms of cognitive control in human prefrontal cortex
G. Banks

950 DBS of the Bed Nucleus of Stria Terminalis (BNST) for Major Depression
R. Bittar

953 Stereotactic Laser Amygdalohippocamptomy for Pharmacoresistant Mesial Temporal Lobe Epilepsy: One-Year Outcomes in a Large Series
M. Stern

956 Seizure suppression by opto-chemogenetic inhibition in multiple nodes of an epileptic network with chemically-activated luminopsins
R. Gross

960 Role of hippocampus in human memory redefined: Evidence from stereotactic laser amygdalohippocamptomy
D. Drane
4:41–4:50 p.m.
964 A Novel Technique to optimize Microelectrode Recording Accuracy in DBS surgery using Intraoperative CT
R. Kochanski

4:51–5 p.m.
968 Persistent Neuronal Activity in Medial Temporal Lobe and Medial Frontal Cortex Supports Short-Term Memory
J. Kaminski

SECTION SESSION

AANS/CNS SECTION ON NEUROTRAUMA AND CRITICAL CARE
Location: 403AB
Moderators: J. Gruen; C. Rabb
Supported by an educational grant from Codman Neuro, part of the Johnson & Johnson family of companies.

2–2:03 p.m.
Session Introduction
C. Rabb

2:04–2:34 p.m.
Rescuing the Injured Brain
P. Hutchinson

2:35–2:38 p.m.
2017–18 Codman Award Winner Announcement
E. Tsai

2:39–2:49 p.m.
2016 Codman Neurotrauma Research Award Presentation
D. Petrov

2:50–2:59 p.m.
938 Differentiating Traumatic Brain Injury and Post Traumatic Stress Disorder with the use of Diffusion Tensor Imaging and Volumetric Analysis
J. Jennings
3-3:09 p.m.
941 Trigeminal Nerve Stimulation as a Novel Resuscitation Therapy for Polytrauma Model of Traumatic Brain Injury Complicated by Hemorrhage Shock
A. Chiluwal

3:10-3:19 p.m.
943 Cross-Cultural Efficacy of Interactive Educational Interventions in the NeuroTrauma Setting
D. Tran

3:20-3:29 p.m.
944 Short-Term Outcomes in Head-Trauma Patients with Associated Skull Fractures
A. Asemota

3:30-3:32 p.m.
Introduction of Charles Tator Lecture
D. Michael

3:33-4 p.m.
Charles Tator Lecture
Acute Spinal Cord Injury: Monitoring From the Injury Site to Guide Management
M. Papadopoulos
Supported by an educational grant from AOSpine.

4:01-4:10 p.m.
951 Development of Augmented Reality-Based Neuro-Navigation System for use in External Ventricular Drain Placement
A. Cutler

4:11-4:20 p.m.
954 The Effects of Age Following Traumatic Brain Injury: Characteristics at Presentation and Risk Factors for Unfavorable Outcome
J. Yue
4:21-4:30 p.m.
957 Factors Predicting Inadequate Hematoma Evacuation and Recurrence in Chronic Subdural Hematoma
R. Motiei Langroudi

4:31-4:40 p.m.
961 Vitamin D Status and Three-Month Glasgow Outcome Scale Scores in Neurocritical Care Patients: A Prospective Analysis of 497 Patients
J. Guan

4:41-4:50 p.m.
965 CSF Cytokine Profile of Patients with Post-Traumatic Hydrocephalus Following Severe Traumatic Brain Injury
C. Deibert

4:51-5:00 p.m.
969 Triage Patterns of Traumatic Subarachnoid Hemorrhage: Is Referral to a Tertiary Care Center Necessary?
M. Gates

SECTION SESSION

AANS/CNS SECTION ON TUMORS II
Location: 408AB
Moderators: M. Aghi; P. Fecci

2-2:05 p.m.
Introduction
P. Fecci

2:06-2:22 p.m.
The Developing Field of Immunogenomics
G. Dunn

2:23-2:39 p.m.
Coming down the Pipeline: Emerging Advances in Immunotherapy
A. Heimberger
2:40-2:56 p.m.  
**Technological Interfaces: Neurosurgery and Immunotherapy**  
E. Leuthardt

2:57-3:13 p.m.  
**The Industry Perspective: Opportunities in Brain Tumor Immunotherapy**  
T. Davis

3:14-3:30 p.m.  
**Immunotherapeutic Challenges: Where are We Now and Where Do We Need to Be?**  
J. Sampson

3:31-3:40 p.m.  
**Columbia Softball Charity Award**  
945 Angiogenesis plays a critical role in Group 3 medulloblastoma pathogenesis  
E. Thompson

3:41-3:50 p.m.  
**Synthes Skull Base Award**  
947 Folate Receptor Overexpression Can Be Visualized in Real Time During Pituitary Adenoma Endoscopic Transsphenoidal Surgery  
J. Lee

3:51-4 p.m.  
949 Genetic Abnormalities Correlate with Histological Subtypes of Medulloblastoma — Searching for Therapeutic Targets and Predicting Metastatic Potential  
A. Amin

4:01-4:10 p.m.  
**952 Purification and Characterization of Primary Human Glioblastoma Astrocytes**  
M. Gephart
4:11-4:20 p.m.
905 Laser Ablation in Stereotactic Neurosurgery (LAISE): A Multi-Institutional Retrospective Analysis of LITT for Gliomas
A. Sloan

4:21-4:30 p.m.
958 Immune Checkpoint Protein PD-L1 Induces Glioma-Associated Regulatory T Cell Expansion
J. DiDomenico

4:31-4:40 p.m.
962 Targeted Sequencing Reveals Clinically-Actionably Mutations in Skull Base Meningiomas
T. Lazaro

4:41-4:50 p.m.
966 Downregulation of sphingosine-1-phosphate receptor type 1 mediates T-cell sequestration in bone marrow amidst glioblastoma
P. Chongsathidkiet

4:51-5 p.m.
970 Host Lymphopenia Enhances the Abundance, Activation Status, and Antitumor Efficacy of Tumor-specific T Cells Delivered Directly into the Brain
C. Suryadevara
ACKNOWLEDGEMENTS

The AANS wishes to thank the following companies for their support of the 2017 AANS Annual Scientific Meeting:

PLATINUM LEVEL
Medtronic
Stryker

GOLD LEVEL
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Houston Methodist Hospital

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BRONZE LEVEL
Abbott
AOSpine North America
Boston Scientific Neuromodulation
Brainlab
Children’s Hospital Los Angeles
Ethicon
IMRIS/Deerfield Imaging, Inc.
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Leica Microsystems  
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Stryker  
Synaptive Medical  
Varian Medical Systems  
Zimmer Biomet

As of March 17, 2017
LOS ANGELES CONVENTION CENTER — LEVEL ONE

Exhibit and Special Event Halls
Exhibit and Special Event Halls

121

www.aans.org/AANS2017

LOS ANGELES
CONVENTION CENTER —
LEVEL TWO

Meeting Rooms

See page 127 for Exhibit Floor Plan

AANS PLENARY SESSION

Exhibit Floor Plan

Meeting Rooms

Passenger Elevator

Men’s Restroom

Women’s Restroom

G

H

J

K

SOUTH EXHIBIT HALL

Meetings Rooms

West Lobby

South Lobby

South Exhibit Hall
## SHUTTLE SERVICES

### ROUTES

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<th>HOTEL</th>
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<tr>
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<tr>
<td>Doubletree by Hilton Los Angeles Downtown</td>
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<td>Omni Los Angeles Hotel at California Plaza</td>
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<td>The LA Hotel Downtown</td>
<td>Use Westin stop across Figueroa</td>
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<td>4:30-7:15 p.m. Every 20-30 minutes</td>
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<td>Wednesday, April 26</td>
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<td>Convention Center to LAX Departures every 30 minutes to LAX $15 paid by guests*</td>
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*$15 Airport Service on Wednesday, April 26
- Reservation required by calling or visiting the shuttle desk at the Los Angeles Convention Center during daily shuttle hours – 619.921.0305/South Building-Figueroa Drive
- Service from the Los Angeles Convention Center, South Building/Figueroa Drive to LAX every 30 minutes beginning at 12:45 p.m. with last departure at 5:15 p.m.
- Payment by cash or credit card
- Please allow 30-40 minutes travel time
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Find out more at Booth #1953
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2017 AANS Annual Scientific Meeting
Visit the Exhibits and New Learning Center — Exhibit Hall GHJ

The AANS Exhibit Hall brings together over 200 companies who offer innovative products and services to the neurosurgical space. Presented this year for the first time is the AANS Learning Center. Located near the AANS Resource Center, it offers educational opportunities to neurosurgeons at every stage of their career from Neurosurgical Top Gun for residents/fellows, to surgical labs for practical clinics, and kiosks for viewing e-posters presenting research from your peers.

Exhibit Hours:
Monday, April 24, 9 a.m.-4:15 p.m.
Tuesday, April 25, 9 a.m.-4:15 p.m.
Wednesday, April 26, 9 a.m.-2:15 p.m.

Beverage Breaks in the AANS Exhibit Hall:
Monday, April 24, 9 a.m.-4:15 p.m.
Tuesday, April 25, 9 a.m.-4:15 p.m.
Wednesday, April 26, 9 a.m.-2:15 p.m.

Lunch in the AANS Exhibit Hall:
Monday, April 24, 1-2 p.m.
Tuesday, April 25, 1-2 p.m.
Wednesday, April 26, 1-2 p.m.
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