16th Annual Symposium

Current Techniques in the Treatment of Cranial and Spinal Disorders

SATURDAY, NOVEMBER 2, 2019
OMNI INTERLOCKEN RESORT, BROOKFIELD, COLORADO

A conference for health care providers interested in innovative technologies and the latest evidence-based clinical guidelines in the care of cranial and spinal disorders. This live educational opportunity offers relevant information for orthopedic spine surgeons, neurosurgeons, neurologist, physical medicine and rehabilitation physicians, pain management physicians, primary care physicians, physician assistants, residents, fellows, nurses, physical therapists, and allied health care professionals.

Jointly provided by AANS and JPNI
www.jpni.org

American Association of Neurological Surgeons

Justin Parker Neurological Institute

Jointly Provided by the AANS
Chairman of the Board, Alan Villavicencio, MD

Dr. Villavicencio is the Founder and Chairman of the Board for the Justin Parker Neurological Institute. Dr. Villavicencio graduated from Harvard Medical School and completed a neurosurgical residency at Duke University and specialty orthopedic spine surgery fellowship at Cedars-Sinai Medical Center. He is one of only a handful of surgeons in the country with dual neurosurgery and orthopedic spine training.

Disseminating advancements, scientific discoveries, and innovative medical technologies to the medical community and into clinical practice

The 16th Annual Symposium, Current Techniques in the Treatment of Cranial and Spinal Disorders, is facilitated by Boulder Neurosurgical & Spine Associates (BNA) and Justin Parker Neurological Institute (JPNI). The symposium is a one-day extensive seminar that brings together a diverse panel of experts to discuss the latest advancements and treatment considerations in cranial, neurosurgical, and orthopedic spine technology. Presenters will discuss enhanced recovery after surgery, emerging treatments for brain tumors, technology and robots in spine surgery, advances in deep brain stimulation therapy, neuromonitoring in spine surgery, the use of cannabinoids in neurological surgery, and treatments for traumatic brain injury.

JPNI is a fully accredited 501(c)(3) nonprofit organization whose principal purpose is to conduct clinical research and improve clinical outcomes. The mission of JPNI is to advance scientific discoveries and innovative medical technologies into clinical practice by conducting clinical trials and disseminate best practices to the medical community. JPNI also provides fellowship and internship opportunities to neurosurgical and orthopedic spine surgeons and students pursuing careers in medicine.
Dr. Zarina Ali is an assistant professor of neurosurgery at Pennsylvania Hospital and senior fellow of the Leonard Davis Institute of Health Economics. Dr. Ali leads the Neurosurgery Enhanced Recovery After Surgery (ERAS) program, which aims to reduce the surgical stress patients experience before, during, and after spinal and peripheral nerve surgery. This program is one of the first of its kind nationally and serves as a vehicle to deliver value-based care. Through this work, Dr. Ali has demonstrated improved neurosurgical patient outcomes and decreased hospital expenditures.

Dr. Ali received a Master of Science degree in neurobiology and anatomy and completed a combined BS-MD degree from the University of Rochester Early Medical Scholars Program. In 2016, Dr. Ali completed a neurological surgery residency and a fellowship in peripheral nerve surgery at the Hospital of the University of Pennsylvania.

Dr. Ali treats all nervous system conditions, including spinal, cranial and extremity nerve disease. Her clinical interests include caring for patients with tumors, trauma, or compression of the brain, spine or nerves. Dr. Ali’s expertise involves the treatment of peripheral nervous system disorders, including carpal tunnel and cubital tunnel syndrome, brachial plexus injuries, as well as central nervous system disorders, including spinal stenosis and brain tumors, among other neurosurgical conditions. She also performs gamma knife radiosurgery for brain metastases and benign tumors. Her laboratory research includes translational efforts to improve peripheral nerve repair and regeneration.
Course Description
This live educational activity will review updates on the latest advances in the treatment of cranial and spinal neurosurgical and orthopedic issues. Each session provides an intensive and practical review from a panel of experts, with an emphasis on evidence-based approaches in the fields of neurosurgery and orthopedic spine treatments.

Audience Response System
To promote the educational and interactive environment of our symposium, we will be using an audience response system (ARS) during each of the presentations. Each speaker will present multiple-choice questions for the audience to respond, followed by real-time polling. The ARS system allows for further discussion of the topics and encourages a stronger interaction between the speakers and attendees.

Learning Objectives
Upon completion of this live activity, participants should be able to:
1. Discuss new treatment options, technological advancements, and surgical techniques for the treatment of patients with spinal and cranial disorders using the latest scientific findings and evidence-based clinical practice.
2. Demonstrate the understanding of multidisciplinary care for those with spinal or cranial disorders.

Registration
The registration fee for this live event is $90 and includes tuition, continental breakfast, lunch, afternoon snack, and beverages, as well as educational materials including presentations and CVs for all speakers. The early registration deadline is Friday, October 25, 2019, at midnight. Registration will increase from $90 to $110 beginning Saturday, October 26, 2019. The reception and dinner are an additional $35.

How to Register
Online: www.jpni.org
Phone: 303.938.5700

Mail registration checks to:
JPNI, Attn: Symposium 2019
4743 Arapahoe Avenue, Suite 202
Boulder, CO 80303

An email confirmation will be sent upon payment. On-site registration is available, but not guaranteed.

Cancellation Policy
If you cancel your participation in this course, your registration fee will be refunded when JPNI receives written notification before Monday, October 21, 2019, at 5 p.m.

Accreditation/Designation
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the AANS and the Justin Parker Neurological Institute. The AANS is accredited by the ACCME to provide continuing medical education for physicians. The AANS designates this live activity for the maximum of 7 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Be sure to complete the attendance verification and evaluation survey that will be sent via email following the symposium.

AANS Disclosure
Before the program, anyone in control of the educational content of this activity will disclose the existence of any financial interest and/or the relationship they or their significant other have with the manufacturer(s) of any commercial product(s) to be discussed during their presentation.

Disclosures will be included in the final program.

Materials
- Symposium materials including the agenda, presentations and speaker CVs will be distributed as a PDF file by email before November 1, 2019. You will be able to either print out the materials yourself or access them on a smartphone or tablet. There are various applications, like Notability, available that allow you to take notes on your smartphone or tablet.
- Attendance verification forms will be delivered by electronic survey and must be completed and returned no later than Monday, November 25, 2019, to obtain CME certificates.
- Evaluation forms will be available by electronic survey following the symposium. These are very important and utilized for future planning.

About the Event
<table>
<thead>
<tr>
<th>TIME</th>
<th>SPEAKER</th>
<th>TOPIC</th>
<th>CME CREDITS</th>
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<tbody>
<tr>
<td>7:15-7:50am</td>
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<td>Continental Breakfast and Registration</td>
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<tr>
<td>7:50-8:00am</td>
<td>Alan Villavicencio, MD</td>
<td>Welcome</td>
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<td></td>
<td><strong>Afternoon Session I</strong></td>
<td>2.0</td>
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<tr>
<td>8:00-8:40am</td>
<td>Kara Beasley, DO</td>
<td>New Frontiers in Deep Brain Stimulation: From Directionality, to Multiple Independent Current Control, to Epilepsy</td>
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<tr>
<td>8:40-9:20am</td>
<td>Tripp Nanney, MD</td>
<td>The Importance of Lumbar Lordosis and Sagittal Alignment</td>
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<tr>
<td>9:20-10:00am</td>
<td>Alan Villavicencio, MD</td>
<td>Intraoperative Neurophysiological Monitoring in Spine Surgery: Techniques, Pitfalls and Legalities</td>
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<td>10:00-10:20am</td>
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<td>Break/Exhibition</td>
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<td><strong>Morning Session II</strong></td>
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<tr>
<td>10:20-11:00am</td>
<td>Michelle Swift, RN, JD</td>
<td>Focus on Improving Patient Care: Review of Cases and Lessons Learned</td>
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<tr>
<td>11:00-11:40am</td>
<td>E. Lee Nelson, MD</td>
<td>Cannabinoids in Neurological Surgery: An Evidence Based Guide</td>
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<td>11:40-12:20pm</td>
<td>Alan Zacharias, MD</td>
<td>Non-Surgical Neurologic Mimics: What You Don't Want to Miss</td>
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<td>12:20-1:20pm</td>
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<td>Lunch/Exhibition</td>
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<td><strong>Afternoon Session I</strong></td>
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<td>2:20-3:00pm</td>
<td>Sharad Rajpal, MD</td>
<td>Technology and Robots in Spine Surgery: Hype or Reality?</td>
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<td><strong>Afternoon Session II</strong></td>
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<td>3:20-4:00pm</td>
<td>John Hughes, DO</td>
<td>A Multimodal Approach for the Treatment of Traumatic Brain Injury</td>
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<td>4:00-4:40pm</td>
<td>Denise Damek, MD</td>
<td>Leveraging Physics to Fight Cancer: The Role of Optune in Brain Tumor Treatment</td>
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<td><strong>Conclusion</strong></td>
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<td>4:40pm</td>
<td>Alan Villavicencio, MD</td>
<td>Adjournment, Raffle and Closing Remarks</td>
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<td>5:00pm</td>
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<td>Reception and Dinner (Optional)</td>
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Kara Beasley, DO, MBe, FACOS
Dr. Beasley is a board-certified neurosurgeon who completed a dual degree in medicine with an MA in Biomedical Ethics at Midwestern University. She went on to complete a general neurosurgery residency at Philadelphia College of Osteopathic Medicine. Dr. Beasley is one of the only dually credentialed neurosurgeon bioethicists in the world. She is fully trained as a general neurosurgeon in cranial and spinal trauma, endoscopic and open tumor surgery, radiosurgery, epilepsy surgery and neuromodulation, and complex disorders of the spine including tumor and degenerative spinal disease.

Denise Damek, MD
Dr. Damek is an associate professor of neurology and neurosurgery for the University of Colorado School of Medicine. She currently serves as the co-director for the Adult Brain Tumor Program and Director of the Neuro-Oncology Research Program. Dr. Damek received her medical degree from the University of Texas and completed a residency in internal medicine and neurology at the Mayo Graduate School for Medicine. She completed a fellowship in neuro-oncology at Massachusetts General Hospital-Harvard Medical School.

John Hughes, DO
Dr. Hughes graduated from the Arizona College of Osteopathic Medicine in 2007 and trained in family practice at the University of Arizona. He has specialized in integrative and regenerative medicine, prolotherapy, platelet rich plasma (PRP) therapy, and osteopathic manual medicine since 2009.

Tripp Nanney, MD
Dr. Nanney received his medical degree from the University of North Carolina at Chapel Hill. He completed his neurosurgical residency at Northwestern University where he also completed two enfolded fellowship programs, one in minimally invasive spine surgery and complex spinal deformity correction and the other in skull base and open cerebrovascular surgery.

E. Lee Nelson, MD
Dr. Nelson is a board-certified neurosurgeon who received his medical degree from Baylor College of Medicine and Texas Medical Center. He has extensive training in the treatment of spinal trauma from the Ben Taub General Hospital. Dr. Nelson also underwent training at the renowned M.D. Anderson Cancer Center in surgical and non-surgical management of spinal oncology.

Sharad Rajpal, MD
Dr. Rajpal is a board-certified neurosurgeon who received his medical degree and neurosurgery training at the University of Wisconsin. He completed a combined orthopedic and neurological surgery spine fellowship at the nationally renowned Cleveland Clinic where he gained experience in the latest techniques in spinal oncology, minimal access surgery and complex spinal deformity.

Michelle Swift, RN, JD
Michelle Swift earned her Bachelor of Science degree in nursing from Westminster College in Salt Lake City. She completed her Juris Doctor degree at Thomas Jefferson School of Law with a focus in health law, she is licensed by the Utah Bar Association. Her internship experience during law school included working for Sharp Hospital Corporation in San Diego, California.

Alan Zacharias, MD
Dr. Zacharias received his MD from the University of Mississippi. His neurology residency was completed at the University of Virginia followed by a neuromuscular and EMG fellowship at Emory University. He has been in private practice since 2000. He practices neurology with special interest in neuromuscular diseases and EMG.
Thank You to Our Supporters

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