Written Board Review Course
Las Vegas, NV • March 11-12, 2017

Course Directors: Mike McDermott and Nader Pouratian (SANS Life Long Learning Chair)

Course Description
This review course provides the best in-depth, interactive and thorough high yield review of the topics and materials covered in the American Board of Neurological Surgery Primary Examination, commonly referred to as the Written Boards, using the trusted resources from SANS Lifelong Learning. The expert faculty, led by Michael McDermott and Nader Pouratian, deliver summative didactic sessions with integrated real-time testing covering the breadth of neuroanatomy, neurobiology, neuropathology, neuroimaging, neurology, neurosurgery, critical care, and core competencies – from synaptic physiology to cranial nerve anatomy to complex spine surgery. The case-based approach and the tailored SANS examination study guide help reinforce the most important topics you need to review all the high-yield topics for the exam.

Learning Objectives
Upon completion of this course, participants will be able to:
1. Describe the surgical and non-surgical management of tumors, vascular malformations, trauma, pain and other pathological processes that affect the central nervous system (e.g. brain, hypophysis, and spinal cord), the peripheral nervous system (e.g. cranial, spinal, and peripheral nerves), the autonomic nervous system, the supporting structures of these systems (e.g. meninges, skull & skull base, and vertebral column), their vascular supply (e.g. intracranial, extracranial, and spinal vasculature), and their histopathology.
2. Discuss the use and interpretation of images associated with these conditions
3. Discuss neurodegenerative processes and their management.

Saturday, March 11

12:00 – 12:30 PM Lunch

12:30 – 2:00 PM Spine Surgery
- Anatomy: Bones, Ligaments, and Tracts – Dan Hoh
- Degenerative Spine: Imaging, Surgery, and Complications – Charles Sansur
- Spine Trauma: Imaging, Surgery, and Complications – Charles Sansur
  - SCI injury patterns
  - Down syndrome
- Spine Tumors: Imaging, pathology, and surgery – Dan Hoh

2:00 – 2:30 PM Neurobiology – Nader Pouratian
- Synaptic physiology, neurotransmitters, receptors, and channels

2:30 – 4:00 PM Neuroanatomy
- Functional neuroanatomy – Nader Pouratian
  - Including thalamus, gyri (including physiologic correlates such as SSEP, and cerebellar anatomy (including cellular anatomy of cerebellum)
- Neuro-ophthalmology – Mike McDermott
  - Including light reflexes and visual fields, DM2 complications
- Cranial Nerve and Brainstem Nuclei Anatomy - Chaim Colen
  - Including skull base foramina, autonomic innervations, palsies, including auditory system
- Autonomic anatomy and Neuro-Urology – Line Jacques
  - Including sympathetic vs parasympathetic

4:00 – 4:15 PM BREAK
4:15 – 5:30 PM **Neurology** – Tarik Tihan
- Imaging and Pathology of White Matter Diseases
  - Leukomalacia, MS (MLF/INO), NMO, metachromatic leukodystrophy
- Imaging and Pathology of Neurogenetic Disorders
  - Lafora Body, myopathies, etc.
- Infectious disease
  - HIV, hepatitis, viral, fungal, cystercircosis

5:30 – 6:15 PM **Hypothalmic-Pituitary Axis and Endocrinology** - John Jane Jr
- Development and Syndromes
  - Including RCC, Kallman syndrome, MEN syndrome
- Eval, Imaging, Pathology, and Surgery of Sellar Tumors
  - Including hypo/hyperthyroidism, prolactinoma, Cushing’s (Nelson’s), craniopharyngioma, chordoma, apoplexy, CSF leak

6:15 – 6:30 PM BREAK/WORKING DINNER

6:30 – 7:45 PM **Brain Tumors (including pathology)**
- Primary brain tumors – Michael McDermott
  - Mechanisms of neoplasia, imaging, and pathology
- Meningiomas, skull base tumors, bony tumors - Ashok R. Asthagiri
  - Imaging, pathology, and surgical approaches
  - EG, and fibrous dysplasia
- Pediatric and Pineal Region Brain Tumors - Mark Krieger
  - Medulloblastoma, hypothalamic hamartoma
  - Imaging, managements, and surgery

7:45 – 8:15 PM **Pediatric Neurosurgery** - Mark Krieger
- Developmental anomalies, congenital cysts and congenital malformations (including syringomyelia)
  - Trisomies, melo, diastematomyelia, craniosynostoses, Chiari, holoprosencephaly

8:15 – 9:15 PM **Trauma and Critical Care** – Joseph Zacko
- Cardiology, blood products and anticoagulation management
- Intracranial pressure – adults and peds
- Pulmonology, including respiratory patterns
- Hemodynamic monitoring
- Nephrology
- Air embolism
- Nutrition and Electrolytes

9:15 – 10:00 PM **SANS Examination and Review**

**Sunday, March 12**
6:30 – 7:00 AM **Continental Breakfast**

7:00 - 8:30 AM **Functional Neurosurgery and Pain**
- Headache and Facial Pain – Nader Pouratian
  - Including TN, glossopharyngeal neuralgia, cluster headache, migraine
- Surgical Management of Pain - Line Jacques
  - Myelotomy, cordotomy, spinal cord stimulation
- Movement Disorders and Basal Ganglia Anatomy and Spasticity – Nader Pouratian
  - Including DBS/treatment and Wilson disease, and
- Epilepsy – Chaim Colen
  - Types (Gelatic seizures, infantile spasms), semiology, imaging (including PET)
  - EEG patterns
  - Surgeries: Indications and complications (VNS, callosotmy)
  - Status epilepticus
8:30 – 10:00 AM  **Peripheral Nervous System** (30 minutes each)
- Brachial Plexus and Peripheral Nerve Anatomy - Line Jacques
  - Including entrapments and injuries (examination and surgery)
- Sensory receptors, reflex arcs, and neuromuscular Junction - Line Jacques
  - Including diseases (MG, GB) and EMG findings
- Peripheral Nerve Tumors and Neurocutaneous Disorders - Ashok R. Asthagiri
  - NF2, VHL, Sturge-Weber, Cowden disease

10:00 – 10:15 AM  Brunch

10:15 – 11:30 AM  **Vascular** - Adam Polifka
- Anatomy and Perfusion
- Ischemic and hemorrhagic stroke (including cerebrovascular insufficiency and extracranial vascular disease)
- Intracranial Aneurysms
- Vascular Malformations

11:30 – 12:30 PM  **SANS Examination and Review**

*Please note: Faculty subject to change.*