Congress of Neurological Surgeons

SANS Written Boards Review Course

February 23–24, 2019 • Houston, Texas

Course Directors

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Course Description

The SANS Written Boards Review Course prepares neurosurgery residents for the ABNS Primary Examination (commonly referred to as the Written Boards). Using SANS Subspecialty Modules that were specifically designed for this course, expert faculty cover the breadth of all subspecialty and general neuro topics included on the Written Boards Exam.

The two-day intensive provides 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.

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 and 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

Credit Claiming

Following the course, you will receive an email with a link and instructions on how to claim credit and submit an evaluation.

Agenda

Saturday, February 23

8:00–8:30 am Registration and Breakfast

8:30–9:30 am Trauma and Critical Care

- Cardiology, blood products, and anticoagulation management
- Intracranial pressure—adults and peds
- Pulmonology, including respiratory patterns
- Hemodynamic monitoring
- Nephrology
- Air embolism
- Nutrition and electrolytes

9:30–11:00 am **Peripheral Nervous System**

- Brachial plexus and peripheral nerve anatomy
  - Including entrapments and injuries (examination and surgery)
- Sensory receptors, reflex arcs, and neuromuscular junction
  - Including diseases (MG, GB) and EMG findings
- Peripheral nerve tumors and neuro-cutaneous disorders
  - NF2, VHL, Sturge-Weber, Cowden disease

11:00 am–12:15 pm **Neuropathology**

- 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

12:15–1:15 pm **Lunch**

1:15–1:45 pm **Neurobiology**

- Synaptic physiology, neurotransmitters, receptors, and channels

1:45–3:15 pm **Spine Surgery**

- Anatomy: bones, ligaments, and tracts
- Degenerative spine: imaging, surgery, and complications
- Spine trauma: imaging, surgery, and complications
  - SCI injury patterns
  - Down syndrome
- Spine tumors: imaging, pathology, and surgery

3:15–3:30 pm **Break**

3:30–4:30 pm **Pediatric Neurosurgery**

- Developmental anomalies, congenital cysts, and congenital malformations (including syringomyelia)
  - Trisomies, melo, diastematomyelia, craniosynostosis, Chiari, holoprosencephaly
- Pediatric and pineal region brain tumors
  - Medulloblastoma, hypothalamic hamartoma
  - Imaging, managements, and surgery
- Hydrocephalus and CSF dynamics

4:30–5:45 pm **Neuroanatomy**

- Functional neuroanatomy
  - Including thalamus, gyri (including physiologic correlates such as SSEP), and cerebellar anatomy (including cellular anatomy of cerebellum)
- Neuro-ophthalmology
  - Including light reflexes and visual fields, DM2 complications
- Cranial nerve and brainstem nuclei anatomy
  - Including skull base foramina, autonomic innervations, palsies, and auditory system
- Autonomic anatomy and neuro-urology

- Including sympathetic versus parasympathetic

5:45–6:15 pm Break

6:15–7:00 pm SANS Examination and Review, Michael McDermott

Sunday, February 24

7:00–7:30 am Breakfast

7:30–8:40 am Functional Neurosurgery

- Movement disorders and basal ganglia anatomy and spasticity
  - Including DBS/treatment and Wilson disease
- Epilepsy
  - Types (Gelatic seizures, infantile spasms), semiology, imaging (including PET)
  - EEG patterns
  - Surgeries: indications and complications (VNS, callosotomy)
  - Status epilepticus

8:40–9:00 am Pain

- Headache and facial pain
  - Including TN, glossopharyngeal neuralgia, cluster headache, migraine
- Surgical management of pain
  - Myelotomy, cordotomy, spinal cord stimulation

9:00–9:30 am Hypothalmic-Pituitary Axis and Endocrinology

- Development and syndromes
  - Including RCC, Kallman syndrome, MEN syndrome
- Evaluation, imaging, pathology, and surgery of sellar tumors
  - Including hypo/hyperthyroidism, prolactinoma, Cushing's (Nelson's), craniopharyngioma, chordoma, apoplexy, CSF leak

9:30–9:45 am Break

9:45–11:00 am Vascular

- Anatomy and perfusion
- Ischemic and hemorrhagic stroke (including cerebrovascular insufficiency and extracranial vascular disease)
- Intracranial aneurysms
- Vascular malformations

11:00 am–12:00 pm Brain Tumors (including pathology)

- Primary brain tumors
  - Mechanisms of neoplasia, imaging, and pathology
- Meningiomas, skull base tumors, bony tumors
  - Imaging, pathology, and surgical approaches
  - EG and fibrous dysplasia

12:00–1:00 pm SANS Examination and Review, Michael McDermott