Neurological Surgery Residency Program  
Columbia University Medical Center  
Goals and Objectives NS4

Upon completion of the NS4 year, NS residents will be expected to meet the following educational goals and objectives:

**Patient Care**
- Construct a plan of management for complex neurosurgical problems (i.e.: CSF fistula, epilepsy, low-grade astrocytoma, spinal fractures, etc.)
- Demonstrate proficiency in the use of the ultrasonic tumor aspirator (CUSA) and frameless stereotactic instrumentation
- Demonstrate proficiency at hemostasis
- Perform craniotomies for trauma
- Demonstrate proficiency in removal of intraaxial neoplasms, and the use of the operating microscope
- Demonstrate proficiency in cervical discectomy and anterior fusion
- Demonstrate proficiency in removal of lumbar intervertebral disks
- Demonstrate proficiency in lumbar & cervical laminectomies

**Medical Knowledge**
- Demonstrate a more detailed knowledge of anatomy, physiology and disease processes than in the NS 1 to NS 3 years
- Demonstrate the ability to critically evaluate the medical literature
- Demonstrate sufficient knowledge to pass the American Board of Neurological Surgeons primary examination at the 60% level
- Develop the capacity and capabilities of critical thinking and integrating scholarly and clinical activities

**Practice-based Learning and Improvement**
- Assess patients in consultation and advise about the potential benefits and risks of nonoperative and operative treatment, including follow-up, plan of management

**Laboratory Skills**
- Demonstrate the ability to select a topic suitable for research
- Demonstrate knowledge of the scientific method
- Demonstrate an understanding of the techniques necessary to evaluate the selected research topic
- Demonstrate an ability to prepare an abstract, present a paper orally, and prepare a scientific manuscript

Department of Neurosurgery  
Jeffrey Bruce, MD, Residency Director
**Interpersonal and Communication Skills**
- Communicate with patients and their families, explaining disease processes and treatment options, including benefits, risks, and possible complications in comprehensible terms
- Work in a cooperative and sensitive manner with other health care personnel
- Give and receive advice in an objective, mature manner

**Professionalism**
- Understand informed consent
- Respect patient’s right to privacy
- Demonstrate sensitivity to the sexual, ethnic, cultural and religious characteristics of patient and family
- Provide supportive and compassionate care to patients and their families in the course of terminal disease
- Demonstrate knowledge of the ethical and legal aspects of neurosurgery
- Be honest, reliable, and respectful in working with patients and colleagues