Thank you for your interest in performing an externship in neurology at the University of Miami Miller School of Medicine. Extern students may participate in any of four elective rotations in neurology. All electives are for two or four weeks and begin on a Monday (or Tuesday for weeks with a Monday holiday). All inpatient services are at Jackson Memorial Hospital. In addition to the rich clinical experiences offered by the various rotations, externs also participate in certain structured learning opportunities and assessments such as computerized pre- and postcourse testing, instructor-led case-based teaching sessions and computer-based multimedia skills training in the neurologic examination, key clinical findings, and neuroradiology. Four weeks of neurology externship at UM is equivalent to a neurology clerkship at most institutions. This document contains descriptions of the following:

- Elective Rotation Option 1: Neurology Consultation Service  
- Elective Rotation Option 2: Brain Injury Neurorehabilitation Service  
- Elective Rotation Option 3: Stroke Service  
- Elective Rotation Option 4: Inpatient General Neurology and Clinics  
- Structured Learning and Assessment  
- Learning Objectives

NEUROLOGY EXTERNSHIP APPLICATION PROCESS

1. Ensure that we receive the following information via mail or fax:
   a. letter of good standing from your school
   b. proof of immunization
   c. proof of student health insurance
   d. proof of malpractice liability insurance
   e. a brief statement describing your previous experience in neurology and why you wish to perform a neurology externship at the University of Miami.

2. Provide us with the following via return email (DLGordon@miami.edu) as soon as possible:
   a. the name, telephone number, and fax number of a contact person from your medical school to whom we can send your letter of acceptance once we have received all the above paperwork
   b. your complete contact information, including mailing address, telephone number, and email address
   c. the specific elective rotation(s) requested
   d. the specific dates requested in 2-week blocks, beginning on a Monday (or Tuesday for weeks with a Monday holiday).

3. We shall email you a response to your rotation and date requests, either confirming your enrollment or offering alternate dates if the requested slots are already filled.

4. We shall email you again once we have received all your paperwork to provide you with a map, schedule, and more detailed information about the externships and learning opportunities.

You will need to obtain a University of Miami identification card as soon as you arrive on campus. We thank you once again and look forward to your visit to Miami.

Sincerely,

David Lee Gordon, M.D.
Professor of Neurology & Medicine
Director of Medical Student Education, Department of Neurology
Assistant Director, Center for Research in Medical Education

Contact information:
David Lee Gordon, M.D.
RE: Neurology Externship
University of Miami CRME
P.O. Box 016960 (D-41)
Miami, FL 33101
Fax 305-243-3347
On this service, UM students who have completed the neurology clerkship or externs are provided the opportunity to evaluate off-service neurology problems with the neurology consulting resident and attending assigned to that service. Students should report to Joan Baker, Neuroscience Nurse Educator, at 8:30 am on the first day of the elective. She is located in the Center for Research in Medical Education (also known as the Medical Training and Simulation Laboratory or “Harvey House”). During the elective, you will be expected to report each morning to the neurology consult resident, pager 305-585-2255, extension 0689.
STROKE SERVICE

<table>
<thead>
<tr>
<th>COURSE CODE:</th>
<th>NEU M2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLERKSHIP DIRECTOR:</td>
<td>David Lee Gordon, M.D.</td>
</tr>
<tr>
<td>TELEPHONE:</td>
<td>305-243-6491 FAX 305-243-3347</td>
</tr>
<tr>
<td>CONTACT:</td>
<td>Joan W. Baker, RN (Ctr for Research in Med Edu D-41)</td>
</tr>
<tr>
<td>EMAIL:</td>
<td><a href="mailto:DGLordon@miami.edu">DGLordon@miami.edu</a></td>
</tr>
<tr>
<td>LENGTH OF ELECTIVE:</td>
<td>2/4 weeks</td>
</tr>
<tr>
<td>PREREQUISITE:</td>
<td>Completion of Neurology core clerkship (UMiami students only)</td>
</tr>
<tr>
<td>NUMBER OF STUDENTS:</td>
<td>2</td>
</tr>
<tr>
<td>AVAILABLE:</td>
<td>All year except Dec 19, 2005 to Jan 2, 2006</td>
</tr>
<tr>
<td>INTERVIEWING TIME:</td>
<td>Yes--NEGOTIABLE / Permission Required</td>
</tr>
<tr>
<td>TYPE:</td>
<td>Clinical</td>
</tr>
</tbody>
</table>

Third- or fourth-year medical students (UM students who have completed the neurology clerkship or externs from outside UM) may perform a 2- or 4-week subinternship on the stroke neurology service at Jackson Memorial Hospital under the supervision of a stroke neurology attending. During the course, the student is expected to care for a limited number of patients on the stroke service and to be an active member of the stroke team. The student should report each morning for stroke inpatient rounds on West Wing 11 at a time designated by the stroke attending. The student is expected to take two nighttime calls (spending the night in the hospital). Students should report to Joan Baker, Neuroscience Nurse Educator, at 8:30 a.m. on the first day of the elective. She is located in the Center for Research in Medical Education (also known as the Medical Training and Simulation Laboratory or “Harvey” Building).
This elective is intended for medical students who have completed a medicine, surgery or general neurology rotation. There is no call. During the elective the medical student will spend time on the Ryder Trauma 4th floor Neurorehab service, shadowing the Rehab attending on daily rounds. There is an opportunity to get involved in clinical research activities that are ongoing in the division. Students will also have the opportunity to become familiar with Botulinum toxin injections and Baclofen pumps. Student should report to Joan Baker, Neuroscience Nurse Educator, at 8:30 AM on the first day of the elective. She is located at the Center for Research in Medical Education (also known as the Medical Training and Simulation Laboratory or “Harvey House”).
Third- or fourth-year medical students who have completed a clinical clerkship in neurology may perform an elective on the General Neurology service at Jackson Memorial Hospital or the Veterans Administration Medical Center with an array of university-run or private physician clinic choices to complement this experience. Clinic choices include Epilepsy, VA Neurology, Neuro-ophthalmology, Neuromuscular, Stroke, Pediatrics, & Migraine. EMG or Neuropathology may be arranged based on director approval and availability. During this course students are expected to care for a limited amount of patients on a general Neurology service and be active member on a General Neurology team. Students should attend Neurology Morning Report at the Jackson Central 2 Auditorium each morning at 7:15 AM and Neurology Grand Rounds 10:00 AM –12:00 PM each Friday morning. The student is expected to take at least one nighttime call per week from 4:00 PM-11PM. All students should report to Joan Baker, Neuroscience Nurse Educator, at 8:30 AM on the first day of the elective. She is located in the Center for Research in Medical Education (also known as the Medical Training and Simulation Laboratory or "Harvey House").
UNIVERSITY OF MIAMI MILLER SCHOOL OF MEDICINE  
NEUROLOGY EXTERNSHIP  

STRUCTURED LEARNING AND ASSESSMENT  

In addition to the clinical experiences of the individual externship rotations, each student extern is provided a core curriculum consisting of structured learning and assessment opportunities.

NOTE: A 4-week experience satisfies the requirements of most neurology clerkships, though it does not include certain small-group and standardized-patient sessions included in the clerkship for UM students.

Orientation Day  
- Precourse Computerized Test..................................40 questions with text, graphics, videos
- Essential Neurologic Examination....................................self-study multimedia computer program
- 30 Key Neurologic Findings........................................self-study multimedia computer program
- Lesion Localization..........................................................self-study PowerPoint
- Communication & Documentation in Neurology................self-study PowerPoint

Case-Based Teaching (CBT) Sessions  
- Comprehensive curriculum of 10 important emergencies, 10 common outpatient conditions
- All cases written by course director with faculty input
- Total of ten sessions in 4-week period
- Three afternoons per week (usually Monday, Wednesday, Friday)
- Each session:  
  o Consists of two cases (1 important emergency & 1 common outpatient condition)
  o Led by faculty member or senior resident
  o Lasts 2 to 3 hours, is followed by 5-question quiz covering both cases

Neuroradiology  
- Self-study PowerPoint file
- Computerized test emphasizing brain CT scan anatomy

UMedic Stroke Program  
- Interactive multimedia computer program
- Self-learning, case-based
- Takes 1 to 1 ½ hours to complete

Neurology Clerkship/Externship Website  
- Case-Based Teaching (CBT)..............20 PDF handout versions of the PowerPoint slides
- Neuroradiology.................................................................PowerPoint presentation
- Neurologic Localization..................................................PowerPoint presentation
- Neurologic Communication............................................PowerPoint presentation
- Essential Neurologic Examination..............................Link to files with videos
- Key Clinical Findings......................................................Link to files with videos
- Neuroanatomy Review....................................................Link to MacroMedia Flash file

Clinical Conferences  
- Morning Report.................................................Monday through Friday 7:15 am to 8:00 am
- Chief’s Rounds.............................................................Every Tuesday 11 am
- Grand Rounds..............................................................Every Friday 10 am to 12 pm

Final Day  
- Postcourse Computerized Test.........................60 questions with text, graphics, videos
**Global Learning Objectives.** By the end of this rotation, student should be able to:

1. Perform an accurate and appropriate neurologic history and examination;
2. Manage patients with common neurologic conditions and key neurologic emergencies;
3. Identify and describe the significance of key neurologic findings on examination;
4. Distinguish normal and abnormal CT and MRI scans of the brain;
5. Order diagnostic tests appropriately for patients with neurologic conditions;
6. Consult a neurologist appropriately.

**Specific Skills Learning Objectives.** By the end of this rotation, student should be able to:

1. Perform a neurologic history accurately;
2. Perform a reliable “essential” neurologic examination on a patient;
3. Demonstrate a mechanism for learning about medical conditions in a clinical environment that will serve as a life-long strategy;
4. Consult a neurologist appropriately;
5. Order diagnostic tests appropriately for patients with neurologic conditions, including EMG/NCV, EEG, CT scan, and MRI scan;
6. Distinguish normal and abnormal MRI & CT scans; in particular identify mass lesion, ischemia, and hemorrhage;
7. Identify neurologic structures on CT and MRI scans, including:
   1. Brainstem (medulla, pons, and midbrain) and cerebellum
   2. CSF structures: all 4 ventricles, Sylvian aqueduct, quadrigeminal plate cistern, perimesencephalic cistern, suprasellar cistern, Sylvian fissure, interhemispheric fissure
   3. Deep white matter: internal capsule, corona radiata, and centrum semiovale
   4. Subcortical gray matter: thalamus, lentiform nucleus (globus pallidus & putamen), caudate nucleus
   5. Cortex: frontal, parietal, temporal, occipital, insula
15. Identify and describe the neuroanatomy, neuropathology, pathophysiology, diagnostic evaluation, and management associated with these 30 clinical findings:

   1. Normal eye movements
   2. Normal arm coordination
   3. Flexor plantar response
   4. Normal gait
   5. Lateral rectus palsy
   6. Neglect
   7. Expressive aphasia
   8. Receptive aphasia
   9. Dysarthria
   10. Swollen optic disk
   11. Hemianopsia
   12. Cranial nerve 3 palsy
   13. Facial weakness
   14. Atrophy and fasciculations
   15. Pronator drift
   16. Wrist drop
   17. Foot drop
   18. Sensory level to pinprick
   19. Distal pinprick loss
   20. C6 pinprick loss
   21. L5 pinprick loss
   22. Ankle clonus
   23. Extensor plantar response
   24. Intention tremor
   25. Essential tremor
   26. Resting tremor
   27. Choreoathetosis
   28. Ataxic gait
   29. Parkinsonian gait
   30. Romberg sign
LEARNING OBJECTIVES

Specific Cognitive Learning Objectives.

1. Understand the pathophysiology, clinical course, and management of 10 common outpatient neurologic conditions (also see specific learning objectives for these conditions):
   1. Dizziness, esp. benign positional vertigo
   2. Intermittent headache, esp. migraine
   3. Neck and arm pain, esp. cervical radiculopathy (and carpal tunnel syndrome)
   4. Low-back and leg pain, esp. lumbosacral radiculopathy
   5. Dementia, esp. Alzheimer’s disease
   6. Epilepsy, esp. complex-partial seizures
   7. Sleep disorders, esp. sleep apnea
   8. Movement disorders, esp. Parkinson’s disease
   9. Demyelinating disease, esp. multiple sclerosis
   10. Neuropathic pain, esp. herpes zoster

2. Understand the pathophysiology, clinical course, and management of 10 neurologic urgencies and emergencies (also see specific learning objectives for these conditions):
   1. Acute ischemic stroke (and TIA)
   2. Subarachnoid hemorrhage
   3. Status epilepticus
   4. Spinal cord compression (and other myelopathies)
   5. Guillain-Barré syndrome
   6. Myasthenic crisis
   7. Bacterial meningitis
   8. Toxic-metabolic encephalopathy (and coma)
   9. Subdural hematoma (and head trauma in general)
   10. Intracranial hypertension and herniation

3. Understand the pathophysiology, clinical course, and management of other neurologic conditions, especially those observed first-hand by the learner.