Integrated Clinical Neuroscience Clerkship

Essential Information for Residents who Teach Medical Students
Integrated Clinical Neuroscience Clerkship

- Clerkship-wide
  - Curriculum and Assessment
  - Logistics
  - Policies
  - General Expectations

- Departmental
  - Logistics
  - Expectations
  - Assessment
Integrated Clinical Neuroscience Clerkship

Curriculum and Assessment
Clerkship Organization

- Cooperative effort involving five departments:
  - *Neurology*
  - *Neurosurgery*
  - *Rehabilitation Medicine*
  - *Neuroradiology*
  - *Ophthalmology*
Clerkship Organization

- 8 clerkships per academic year, 6 weeks in length
- Maximum of 24 students per clerkship
- Each roster is roughly half 3rd year/4th students
- Three weeks of Neurology
- One week of Neurosurgery
- One week in Ophthalmology
- One week shared between Rehabilitation Medicine and Neuroradiology
## Clerkship Organization

Rotation Chart for the 00/00/00 Clinical Neuroscience Clerkship

<table>
<thead>
<tr>
<th>Student</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
</table>
Goals and Objectives

- Expands traditional scope of clinical neuroscience beyond Neurology and Ophthalmology
- Intention is to prepare future primary care physicians to help manage neuroclinical problems that, in the past, were largely managed by specialists
- Students will discover how these specialties collaborate, which clinical problems each discipline handles best, and when referral for specialty care is appropriate
- Focus is on acquiring knowledge of neuroanatomic principles and performing the neurologic exam from these different clinical perspectives
Goals and Objectives

- Learn about the care of neurologic disorders likely to be seen by the primary care physician. Become familiar with these disorders as they evolve through stages: early presentation, diagnosis, treatment and rehabilitation.

- Solidify neurologic exam skills by performing neurologic assessments from the perspective of a neurologist, a neurosurgeon, an ophthalmologist and a rehabilitation physician.

- Understand how these specialties collaborate. Learn what to expect from a consultation made to each.
Text/Readings

  - Students not required to purchase
  - Copies on reserve in Ebling Library and available for purchase at UBS in HSLC

- Rotation-specific readings posted on Learn@UW
LCME ED-2 Core Experience Requirements (Med School-wide)

- Purpose of LCME ED-2 is to have students gain clinical skills related to core conditions specific to the clerkship experience.
- Not a check-off exercise required for passing.
- Clerkship faculty, residents and administration, along with the students, must work together as partners to complete each required experience.
- Students should be active participants in their education and seek out core clinical cases.
Students will participate under supervision, in the following activities (level of participation required):

- Develop an inpatient rehabilitation plan for an individual patient (Perform)
- Demonstrate ophthalmoscope use (Perform)
- Complete a neurological exam (Perform)
- Observe a spine procedure
- Observe an open brain procedure
- Observe an intracranial catheter procedure
Clerkship Core Experiences—clinical conditions

- Evaluate (H&P, Written or Oral Presentation) a patient with each of the following conditions (Level of participation indicated):
  - Back or neck pain (Observe)
  - Cerebrovascular disease [chronic or acute] (Observe)
  - Headache (Observe)
  - Impaired consciousness (Observe)
  - Paresthesia (Observe)
  - Visual disturbance or loss (Observe)
  - Weakness/paralysis (Observe)
Students will participate under supervision, in the following activities:

- Recognize CT findings in traumatic brain injury (Observe)
- Recognize imaging findings in carotid atherosclerosis (Observe)
- Recognize MRI findings in brain tumor (Observe)
- Recognize MRI findings in ischemic stroke (Observe)
Core Experience Requirements (cont’d)

- Recognizing & beginning to master these skills will better prepare students for high stakes exams like YEPSA & STEP 2, and help them prepare for residency.
- Some requirements are department-specific, others are course-wide.
- Not the only requirements for the course.
Helping Student Complete Core Requirements

- Students may ask you to help them find opportunities to satisfy requirements (e.g., being notified about an emergent procedure or newly-admitted patient exam)
- Students are also instructed to contact a departmental director or the clerkship coordinator if having difficulty fulfilling a required experience
Giving Students Feedback

- Opportunities to give feedback
  - Presentations to the team
  - Bedside teaching rounds
  - Every time you sign a clerkship log
  - Be explicit “This is feedback on…”

- Every student needs to complete a midrotation feedback form with an attending or a resident
### Midrotation Feedback

- Student chooses faculty or resident who he/she feels has some insight into clinical skills/knowledge
- Considered a progress report/Not part of grade
- Concrete suggestions for enhancing skills/knowledge
- Set aside time to meet
- If you have concerns about a student’s performance, contact the departmental director ASAP

#### UWSMPH Clerkship Mid-Rotation Student Feedback for

Complete student self-assessment rating form with an area 1 supervisor (e.g., director, attending, or resident) with whom you have spent significant time in the third week of your rotation.

<table>
<thead>
<tr>
<th>FEEDBACK ON STUDENT PERFORMANCE</th>
<th>Student Self-Assessment</th>
<th>Supervisor Assessment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Component</td>
<td>Actual</td>
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<tr>
<td>Patient Care</td>
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<tr>
<td>Takes an effective history</td>
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<td>Performs appropriate physical exam</td>
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<td>Communicates differential diagnosis</td>
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<tr>
<td>Communicates treatment plan</td>
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<tr>
<td>Medical Knowledge</td>
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<tr>
<td>Identifies various disease and etiologies</td>
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<td>Practices-Based Learning and Improvement</td>
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<td>Demonstrates skills in evidence-based medicine</td>
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<td>Systems-Based Practice</td>
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<td>- Demos</td>
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<td>- Interviews</td>
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<td>- Communication Skills</td>
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<td>Communicates with patients and families</td>
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<td>Written communication</td>
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<td>Oral presentation skills</td>
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<td>Professionalism</td>
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<tr>
<td>Respect/Compassion for others</td>
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<tr>
<td>Responds to feedback</td>
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<td>Accountability/Responsibility</td>
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<td>Approach</td>
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<td>Attainments</td>
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</table>

Supervisor: What am I doing well? (Use back of form, if necessary)

Supervisor: What skills do I need to improve? What can I do to advance my performance? (Use back of form, if necessary)

Student’s Signature ___________________________ Date ___________________________

Supervisor’s Comments (What the student is doing well and what they can do to improve/advance their performance)

Supervisor’s Name & Title ___________________________ Date ___________________________
Why Give Feedback?

- Encourages improvement
- Promotes positive behavior
- Discourages negative behavior
- Helps students recognize/analyze their own behavior
- Students want it
- Med School expects it, LCME requirement
Types of Feedback

- **Positive**
  - Performance/knowledge meets or exceeds criteria
  - Reinforces/encourages

- **Negative**
  - Performance/knowledge does NOT meet criteria
  - Extinguishes/discourages

- **Constructive**
  - Includes positive and negative
  - *Includes how to improve*
Characteristics of Effective Feedback

- Constructive
- Based on known goals/objectives
- Specific to behaviors that can be changed
- Understandable
- Balanced (positive & negative)
- Non-judgmental language
- Timely
- Confidential (not in front of everyone)
- Based on first-hand data
- Involves the learner (self-assessment)
“Feedback Sandwich”

- Couching negative with positive
- For example:
  - “Your explanations of the procedure to the patient were good. Your procedural skills need improvement. Overall, your communication skills were excellent.”

- You may need to look for positive things to say
Clinical Performance Evaluation

- You may be given a clinical performance evaluation to complete for a student you work with on your service.
- This is the standard evaluation for the medical school.
How to Use the Evaluation

- Compare performance/knowledge to criteria

- Criteria
  - Based on agreed upon standards/objectives (e.g., clerkship goals/objectives)
  - Known to learner

- Your written comments are most meaningful part of the evaluation
  - Avoid comments such as “Good job!”
Evaluation
OSCE/Final Exam/Final Grade

- OSCE: A three-station pass/fail exam on interpreting neurological symptoms / signs or the performance of clinical skills. Students are required to pass the OSCE in order to pass the course.

- Final Exam: Based on lectures and course learning objectives.

- Final Grade: Based on a combined departmental component (60%) and the final examination of (40%)
  - The departmental component is based on faculty/resident contact, write-ups, participation in rounds/clinics, etc. Grade is then weighted to reflect the time spent in each department.
Integrated Clinical Neuroscience Clerkship

Logistics
Clerkship Administration

Course Director - Dan Resnick, MD resnick@neurosurgery.wisc.edu, Pager #2346

Departmental Directors
- Neurology – Marcus Chacon, MD, chacon@neurology.wisc.edu, pager # 7269
- Rehab Medicine – Michael Ward, MD, ward@rehab.wisc.edu, pager #9151
- Neuroradiology – Tabby Kennedy, MD, tkennedy@uwhealth.org, pager #5159
- Ophthalmology – Dan Knoch, MD, dknoch@ophth.wisc.edu, pager #9815
- Neurosurgery – Dan Resnick, MD; Lincoln Ramirez, MD PhD, ramirez@neurosurgery.wisc.edu

Clerkship coordinator: Mary Beth Dunning, 265-9627, m.dunning@neurosurgery.wisc.edu

Web site: http://www.med.wisc.edu/education/md/curriculum/years-3-4/clerkships/neuroscience/neuroscience-clerkship/1129
Didactic Sessions

- Lectures provided by faculty from all 5 departments, on most weekdays, 4:15-5:30 p.m.
- All students are expected to attend each session and submit a brief, anonymous evaluation at the end
- Lectures presented by faculty from all 5 departments
- 4 sessions are devoted to student presentations on assigned topics related chronic pain, developmental delay, radiculopathy and stroke
Conferences Students are Expected to Attend during the Clerkship

- **Discipline Specific Conferences**
- **Course-wide Conferences**
  - **Wednesday Morning Conferences**
    - Neuroradiology: 2\textsuperscript{nd} Wed of month
    - Neuropathology: 1\textsuperscript{st}, 3\textsuperscript{rd} & 5\textsuperscript{th} Wed of month
    - Students instructed to “follow the residents” to these conferences
  - **Multidisciplinary case presentations**
    - Each student assigned role of a specialist who has been asked to provide advice about diagnosis or treatment of a patient in one of the following clinical settings: Stroke, Acute Radiculopathy, Chronic Pain, & Developmental Delay
    - Part of clerkship didactic series
    - Facilitated by a faculty conference leader
Integrated Clinical Neuroscience Clerkship

Policies
Clinical Work Hours

- The Neuroscience Clerkship adheres to the UWSMPH work hours policy for 3rd & 4th year medical students
  - [http://www.med.wisc.edu/education/md/curriculum/years-3-4/policies-procedures/267](http://www.med.wisc.edu/education/md/curriculum/years-3-4/policies-procedures/267)

- Work hours policy
  - Defined as direct patient care (ward & clinic), conferences & call
  - Not to exceed 80 hrs, averaged over 4 weeks
  - Work hours do not include reading & prep time spent away from duty site, completion of written assignments, prep time for multi-d case presentation, clerkship lecture
  - Avg. work week: Neurology: 46.5, Neurosurg: 51.5, Ophtho: 45, & Rehab Med/Neurorad: 42.5
  - If a student can tell that he & she will be working over 80 hrs in any given week, to be reported to clerkship coordinator immediately
Attendance Policy

- Absence requests
  - If a student asks you for time off, refer the student to the clerkship coordinator
  - Absences are approved by the clerkship director or departmental director, not by ward or clinic supervisors

- The medical school’s and clerkship’s attendance policies for students can be found at
  - http://www.med.wisc.edu/education/md/curriculum/years-3-4/policies-procedures/267
  - http://www.med.wisc.edu/education/md/curriculum/years-3-4/clerkships/neuroscience/expectations/1133

- Non-emergent professional absences: While on this clerkship students are allowed 5 days off for residency interviews and the USMLE CS. If more than 5 days are needed, the request will be handled on a case by case basis.

- **Emergent absences:** Excused on a case by case basis by the directors
Academic Misconduct & Plagiarism

Such as: presenting work as one’s own when it is the work of another, or submitting work that contains the ideas or research of others without proper acknowledgement

Discipline will consist of repeating the assignment, receiving a full grade lower in the course, a written reprimand placed in the student’s file, and referral to the Dean of Students. A second occurrence will result in further sanctions.

Students are cautioned to be aware of these issues when writing anything, including PowerPoint presentations.
Student Professionalism

• Ethical responsibilities:
  ▪ Honesty e.g., on medical school examinations, in patient write-ups and when reporting research
  ▪ Respect for the people around you: patients, colleagues, staff and faculty
  ▪ Reliability and selflessness e.g., when attending to the needs of patients and working with colleagues

• Violations of honesty and of patient confidentiality can lead to dismissal
Holidays: Students on this clerkship are not required to work on UWSMPH holidays

Core Days: Once or twice a semester, students are excused from clinical duties to attend medical school-sponsored events related to curriculum and advising (http://www.med.wisc.edu/education/md/curriculum/years-3-4/policies-procedures/267)

For more information on all UWSMPH 3rd/4th year programs, policies and procedures: http://www.med.wisc.edu/education/md/curriculum/years-3-4/main/120
Integrated Neuroscience Clerkship

Neurology Portion of the Clerkship
Neurology
Primary contact for clinical performance issues: Marcus Chacon

- 3-week block, 1st or 2nd half of clerkship
- Services/Settings
  - Inpatient General Neurology/Consults
  - Inpatient Stroke
  - Pediatric Neurology
  - UWHC Outpatient
  - 20 S. Park Outpatient
- 1 assigned clinic per week
- 2 short call nights, 6-10PM
- VA computer training & ID so can participate in VA Neurology clinics
By the end of the rotation, the student will be able to:

- Obtain a thorough neurological history, emphasizing the character of symptoms, their mode of onset and evolution. Often, this will be sufficient to deduce the nature of the disease process.
- Perform a complete neurological examination of mental status, cranial nerves, motor and sensory function, coordination, reflexes and gait.
- Deduce the location (along the neuraxis) of the disease, using the examination and symptoms.
- Recognize neurologic emergencies and be able to provide initial management and triage.
Neurology Core Rotation Requirements

- Neurology Rotation Checklist (Green Card)
  - Faculty/Resident signatures for most activities

- Assigned Weekly Clinic

- Neuro Exam
  - Two complete exams over course of 3 weeks
  - Can be performed/observed in parts

- H&P or SOAP note
  - Not part of patient’s record
  - Generally typed up piece of paper, submitted to attending or resident for review

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Neuro Exam

The student was observed adequately performing

<table>
<thead>
<tr>
<th>Faculty's Signature</th>
<th>Faculty's Signature</th>
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<tr>
<td></td>
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<tr>
<td>Mental Status</td>
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<tr>
<td>Cranial Nerves</td>
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<tr>
<td>Motor</td>
<td></td>
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<tr>
<td>Sensory</td>
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<tr>
<td>Reflexive</td>
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<tr>
<td>Coordination</td>
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<tr>
<td>Diet</td>
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</table>

Short Call (1800-2200)

The student adequately participated during evening call

<table>
<thead>
<tr>
<th>Date/Location</th>
<th>Resident's Name</th>
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Notes (H&P or SOAP note)*

The student wrote an adequate note

<table>
<thead>
<tr>
<th>Date</th>
<th>Faculty's/Resident's Signature</th>
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*Doctor typed or written on paper, rather than in patient’s electronic record. Turn in with green card.

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Assigned Weekly Clinic for Students on Stroke or Ped Neurology

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Clinic</th>
<th>Faculty's Signature</th>
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<thead>
<tr>
<th>Week 2</th>
<th>Clinic</th>
<th>Faculty's Signature</th>
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<thead>
<tr>
<th>Week 3</th>
<th>Clinic</th>
<th>Faculty's Signature</th>
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Assigned Clinics for Students on Adult General Neurology

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
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*All 5 Neurology Clinics are located on 5th floor. Memorial:
  - To get to the Neurology Clinics enter the hospital from the 5th floor or from the NICU. Use elevator near the NICU="Memorial" to the 5th floor. Look for sign for the NP clinics.
  - Stroke clinics are staffed on Tuesdays by Dr. Chooan, Jensen, & Sabo.
  - Check HealthLink for start time of clinics.

These are the minimum requirements
Neurology
Sample Daily Schedule

- 7:30–8:30  Preround
- 8:30–9    Morning report or didactics
- 9–12      Attending rounds, patient care
- 12–1      T/Th Noon teaching conference w/ Inpt
             General Attending on service
- 1–4:15    Some scheduled activities
            - Brain cutting - Neuropath (Mon, Thurs)
            - Bedside teaching (Tues @ 1:15)
            - Service activities
            - Assigned weekly clinic
- 4:15–5:30 Clerkship Lecture
Neurology
Teaching Expectations for Residents
Integrated Neuroscience Clerkship

Rehabilitation Medicine Portion of the Clerkship
Rehabilitation Medicine
Primary contact for clinical performance issues:
Michael Ward

- Orientation with Dr. Ward on Monday at 7:30 a.m.,
meet at B4/4 floor station
  - Students receive an individualized schedule
    combining Rehab Med & Neurorad activities

- Regular work day begins at 7:30 a.m.
- Assigned patient to follow for the week
- Present inpatient rehabilitation plan on Friday
- Grade based on inpatient rehabilitation plan
  presentation; input from faculty and residents
Rehabilitation Medicine Rotation Objectives

By the end of the rotation, the student will be able to:

- Describe the role of occupational/physical/speech therapy, rehabilitation psychology and the multidisciplinary rehabilitation team in treating people with disabling conditions in acute and chronic care settings.

- Construct a comprehensive problem list for a patient with a disability. This list should include long-range medical, functional, psychological and social issues.
Rehabilitation Medicine Rotation Objectives (cont’d)

By the end of the rotation, the student will be able to:

- Perform a manual muscle exam
- Describe the rehabilitation framework of disease, functional impairment, activity limitation and barriers to social participation in approaching neurologic problems
- Complete a functional capacity report form and a department of transportation form on a person with a disability
# Rehabilitation Medicine Sample Weekly Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>Rehab Medicine Orientation w/ Dr. Ward B4/4</td>
<td>Neuroradiology</td>
<td>2nd Wed, Neuroradiology Conference F2/401</td>
<td>Inpatient Rounds B4/4 Dr. Thomas</td>
<td></td>
</tr>
<tr>
<td>9:00-11:00</td>
<td>Rehabilitation Medicine (Personalized schedule details how Mon, Tues, Wed &amp; Thurs mornings spent)</td>
<td></td>
<td></td>
<td></td>
<td>8:30 AM Neurorad Case Presentations to Dr. Kennedy E1/337</td>
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<tr>
<td>10-2</td>
<td></td>
<td>Neuroradiology</td>
<td>Neuroradiology</td>
<td>Neuroradiology</td>
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<tr>
<td>1:00-3:00</td>
<td>Neuroradiology Orientation w/ Teaching Fellow E1/318</td>
<td>Rehabilitation Medicine 2-4</td>
<td></td>
<td></td>
<td>1:00-3:30 Rehab Med Inpatient Case Presentations to Dr. Ward B4/4</td>
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<td>Neuroscience Clerkship Lecture</td>
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Rehabilitation Medicine
Teaching Expectations for Residents

- Demonstrate and assist student in performance of basic neurological exam skills, especially manual muscle testing, spasticity assessment and cognitive screens
- Assist students in completion of one rehab case presentation, including reassigning patients, as necessary
- Provide information on the role of physiatrists relative to other specialists in the management of pain problems and chronic neurological disorders
Integrated Neuroscience Clerkship

Neuroradiology Portion of the Clerkship
Neuroradiology
Primary contact for clinical performance issues:
Tabby Kennedy

- Shared week/combined schedule with Rehabilitation Medicine
  - Orientation with students at 1:00 on Monday
- Unique in that fellows, rather than residents, primarily responsible for teaching medical students
- One fellow assigned to be students’ primary contact & mentor for the week
  - Teaching fellow relieved of clinical responsibilities for the week
  - Use neuroradiology section of course handbook as teaching guide
  - Review expectations and rotation objectives
Neuroradiology
Learning Objectives for Students

- Become familiar with the range of modern imaging tools and techniques that neuroradiologists use to evaluate the central nervous system.

- Learn to recognize: 1) CT findings in traumatic brain injury; 2) Imaging findings in carotid atherosclerosis; 3) MRI findings in brain tumor and 4) MRI findings in ischemic stroke.

- Try to observe these procedures: Carotid/cerebral angiogram; Myelogram or fluoro-guided LP; Carotid US.
# Neuroradiology Sample Weekly Schedule

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Neuroradiology Rotation
Teaching Expectations for Fellows

• Expected to review basics of neuroimaging & neuroanatomy
• Facilitate observation of neuroradiological procedures, including carotid ultrasound, fluoroscopically guided lumbar puncture, myelography, and cerebral angiography
• Expected to assign each student a clinical neuroimaging case to present to an attending neuroradiologist at end of week
• Expected to help students prepare for their presentations by reviewing case with each student individually
Integrated Neuroscience Clerkship

Ophthalmology Portion of the Clerkship
Prior to the start of, student receives an e-mail from Dee Grade in Ophthalmology
- Start time and location of the Monday orientation
- Instructions to pick up orientation packet
  - Packet includes personalized schedule, a booklet of cases, and the case description of a patient that the student will discuss on Friday afternoon

Case discussion and quiz on Friday
Case materials to be returned at the end of the week
By the end of the rotation, the student should be able to:

- Perform the seven elements of the basic eye examination
- Explain the causes of acute and chronic visual loss (including systemic causes such as giant cell arteritis)
- Identify the various causes of a red eye and their treatments. Know the consequences of topical anesthetics, antibiotics, antiviral, and corticosteroid therapies
Ophthalmology
Learning Objectives for Students (Cont’d)

By the end of the rotation, the student should be able to:

- Understand the concept of glaucoma and describe its ophthalmoscopic appearance. Describe the difference between open-angle and narrow-angle glaucoma.
- Detect the presence of a relative afferent pupil defect and understand its significance.
- Describe the basic visual field defects, using their related terminology.
By the end of the rotation, the student should be able to:

- Detect the presence of strabismus and understand its significance
- Recognize the signs of ocular trauma and be able to distinguish between mild and serious ocular injuries
- Explain the significance of papilledema and its varied manifestations.
## Ophthalmology Sample Weekly Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Orientation (rotating attending &amp; location)</td>
<td>Case Studies/Discussion Session w/ Dr. Knoch</td>
<td></td>
<td></td>
<td>Ophthalmology Grand Rounds</td>
</tr>
<tr>
<td>8:30-noon</td>
<td>Orientation to Eye Clinic</td>
<td>U-Station Neuro-Ophthalmology Clinic</td>
<td>U-Station Peds Eye Clinic</td>
<td>VA Eye Clinic</td>
<td></td>
</tr>
<tr>
<td>1:00-3:00</td>
<td>Physicians Plus Eye Clinic</td>
<td>Study Time</td>
<td>U-Station Peds Eye Clinic</td>
<td>VA Eye Clinic</td>
<td>Student Presentations &amp; Quiz</td>
</tr>
<tr>
<td>4:15-5:30</td>
<td>Neuroscience Clerkship Lecture</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Teach and observe the basic eye examination.

Emphasize and teach use of the direct ophthalmoscope. This includes making sure that the student can find the optic nerve. This can be facilitated by having the student draw the nerve, name a vessel, etc. It is imperative that the student can find the nerve after the rotation.
The second year resident at the VA is expected to have a student on a regular basis. It is not acceptable to pass the student on to your first year resident.

Engage the students in active learning. The students appreciate and commonly comment on instructors that asked questions and "got them involved." It is not enough to just have them shadow.
Integrated Neuroscience Clerkship

Neurological Surgery Portion of the Clerkship
Neurosurgery
Primary contacts for clinical performance issues:
Dan Resnick & Lincoln Ramirez

CORE EXPERIENCES

- Experience how neurosurgery works together with related specialties in a tertiary hospital
- Recognize diseases appropriate for neurosurgery consultation
- Be able to discuss the fundamentals of GCS, brain death, ischemic disease, hemorrhagic disease, focal neural compression syndromes (producing neuropathy, radiculopathy, & myelopathy), ICP (global as in hydrocephalus & focal as in mass lesions)
- Improve neurological exam skills
Neurosurgery
Learning Objectives for Students

By the end of the rotation, the student should be able to:

- Describe the role neurosurgery plays in a tertiary hospital
- Use the Glasgow Coma Scale and understand the concepts of brain death and raised ICP (global, as in hydrocephalus; focal, as in mass lesion)
- Recognize and discuss the management of raised ICP, ischemic disease (stroke), hemorrhagic disease (subdural hematoma, AVM, aneurysm, some strokes), extrinsic neural compression syndromes (producing neuropathy, radiculopathy, or myelopathy)
Neurosurgery
Learning Objectives for Students (Cont’d)

By the end of the rotation, the student should be able to:

- Discuss the field management and ER care for compression syndromes produced by head and spine trauma
- Know the indications for various imaging studies
Neurosurgery Week
Logistics

• Week starts on Monday at 6:45 a.m. with an orientation with Dr. Ramirez and/or clerkship coordinator

• Students work with two faculty mentors over the course of the week: The neurointensivist and one of the neurosurgeons. Each will assign the student a patient to follow. One patient will come from the Neuro ICU. The other patient will be assigned by the neurosurgeon from his own service.

• Students keep track of required activities in a log (referred to as the “pink card”)
  • You will be asked to sign the card/opportunity to give feedback.
# Neurosurgery Sample Weekly Schedule

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6:45 AM</strong></td>
<td>Orientation</td>
<td></td>
<td>See assigned patients</td>
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</tr>
<tr>
<td>7:00</td>
<td></td>
<td></td>
<td>M&amp;M Conf &amp; Grand Rounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:15</td>
<td>If plans to go to OR, discusses case with surgeon now</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:30</td>
<td>OR</td>
<td>OR</td>
<td></td>
<td>OR</td>
<td>OR</td>
</tr>
<tr>
<td><strong>8:30-10</strong></td>
<td>Neuro ICU rounds F8/4</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>10 AM-4 PM</strong></td>
<td>Attend clinic or observe in OR</td>
<td>Attend clinic or observe in OR</td>
<td>Attend clinic or observe in OR</td>
<td>Attend clinic or observe in OR</td>
<td>Attend clinic or observe in OR</td>
</tr>
<tr>
<td></td>
<td>Inpt &amp; Case Conf. E5/492</td>
<td></td>
<td></td>
<td>Neuro ICU Didactics</td>
<td></td>
</tr>
<tr>
<td>4:15-5:30</td>
<td>Neuroscience Clerkship Lecture</td>
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</tr>
<tr>
<td><strong>6-10</strong></td>
<td>Short Call, if assigned</td>
<td>Short Call, if assigned</td>
<td>Short Call, if assigned</td>
<td>Short Call, if assigned</td>
<td>Short Call, if assigned</td>
</tr>
</tbody>
</table>
Neurosurgery Week
Core Requirements

- Observe an ICP monitor placement, a ventriculostomy and a shunt placement. Observe parts of a spine operation and parts of an open craniotomy.

- Attend one general neurosurgical clinic and two subspecialty clinics. One of these clinics should be staffed by the student’s faculty mentor.

- Take short call one night, 6-10 PM.

- Turn in pink skills/activity log on Friday.
Students Observe in the OR

- Some students may not have been on surgery clerkship yet
- Participation will mainly be that of observation, no signing in and out needed
- Students instructed to be in OR by 7:15 (or 15-20 mins before start of the case) to be able to discuss case with surgeon
- Will want to know when presence may be most educational since most will need to leave for Neuro ICU rounds at 8:30
- Not expected to observe entire case
- For multi-hour cases, told to use observation time wisely: multitask between Neuro ICU rounds, the OR, clinic, and two assigned patients
What Students are Told about Observing in the OR

- Ask where to stand and what not to touch. If feel faint, sit down.

- OR can be a stressful place. Faculty and residents both wish to teach, but patient safety and the efficient pace of the operation come first.

- May have to wait for a Q&A opportunity.

- Learn where the OR schedule is posted and how to read it. (Students receive training on accessing OR schedule on Health Link before the start of clinical years.)

- Wear ID and introduce self to nursing.
Neurosurgery
Teaching Expectations for Residents

- We expect the PGY4 resident to act as a mentor for an assigned medical student. This will entail meeting with the student daily to discuss a patient on the floor, providing feedback to the student regarding their performance in taking a relevant history and physical examination, and providing guidance and advice to the student regarding maximizing their experience on the neurosurgery service. The PGY4 resident will be responsible for grading the student and providing a brief (one or two sentences) statement regarding the student's performance on service.
Neurosurgery
Teaching Expectations for Residents (Cont’d)

- We expect students to round with the team in the morning, Tuesday through Friday.
- We expect the other residents on service to participate in medical student education through inclusion of the student in patient care discussions on rounds, involving the student in patient care while on call, and providing feedback where appropriate in clinical situations.
Residents as Teachers

General Expectations
For Teaching &
Professionalism
Importance of Teaching Students

Why teach students?

- Recently a student - know their issues
- When you teach, you learn what you know/don’t know
- Requires reflection
- Expectation/requirement
- Practice-based learning and improvement competency
Optimal Resident-Student Interactions

- Introduce students to patient, families, and other health care staff
- Inform students of expectations and their role in the group at the beginning of a rotation
- Include students so they feel like active members of the team
- Appropriate and constructive feedback based on observed student interactions for patients and other members of the health care team
- Be patient with students
- Encourage questions
- Be accessible
Optimal Resident-Student Interactions (cont’d)

- Give specific feedback frequently
- Make sure tasks assigned to students have learning value
- Focus on teaching pertinent physical findings
- Share a pearl daily
- Explain purpose behind ordering labs, studies, or consults
- Admit when don’t know answer
- Teach something about each patient everyday
Resident-Student Interactions to be Avoided

- Evaluate or discriminate based on student’s choice of future specialty
- Talk disrespectfully about other healthcare providers
- Introduce students as “Doctors”
- Make negative or disparaging comments about students in front of other students or patients
- Interrupt or joke during student presentations
Resident-Student Interactions to be Avoided

- Reprimand students in a public humiliating fashion
- Say “You should know by now.”
- Compare different student’s knowledge in front of other students
- Ask questions in a belittling manner
- Have unfair expectations of students; medical knowledge or ask questions beyond the scope of students’ knowledge
Students as Adult Learners

- Characteristics of Adult Learners
  - Adults are independent, self-directed learners
  - Adults have experiences on which to build
  - Adults want learning to be meaningful and applicable
  - Adults are motivated by internal drives, less external

- Implications for Teaching
  - Allow students to direct their own learning
  - Take advantage of what students already know
  - Use real cases for teaching meaningful information
  - Use students’ interest as a guide
Students as Adult Learners

Basis of Learning

- Knowledge stored in constructed networks
- Build on associations/ Prior knowledge is KEY
- Assimilate / Accommodate
- Strength of knowledge depends on
  - Relevance
  - Meaningfulness
  - How often it’s used
  - How many associations in the network
- Help the learner to build on/create connections
Students as Adult Learners

Learning Procedures

- Procedures = series of steps
- Initially, “talk yourself through”
- Becomes automatic with practice
- Automatic = “without conscious thought”
- Teach the series of steps
- “Talk aloud” as you model a procedure
Types of Evaluation

- **Norm-referenced**
  - Comparison of performance to other learners
  - For example, compare two 4th year students to each other

- **Criterion-referenced**
  - Comparison of performance to set of criteria
  - Criteria should be same for all students
  - For example, compare skills to clerkship goals/objectives

- **Criterion-referenced evaluation viewed as more objective and fair**
When to Evaluate

- **Summative Evaluation**
  - Given at end of clerkship
  - Summary of performance
  - Example: Clinical performance evaluation

- **Formative Evaluation**
  - Given throughout clerkship
  - Helps “form” instruction
  - Example: Midcourse Feedback form

- You may be asked to contribute to both
Clinical Evaluation

- Feedback is based on evaluations
- Assessment = Objective observations about performance
- Evaluation = Placing a VALUE on an assessment
  
  e.g., Student is 3rd year, first week of clerkship
Pitfalls of Evaluation

- Rating students higher because we like them
- Halo effect: Rate student high because of past success
- Opposite: Rate student lower because of past failures
- Beware of your own biases
Evaluation vs. Feedback

- **Evaluation**
  - On-going
  - Based on *firsthand* observations
  - Based on comparisons to criteria

- **Feedback**
  - Constructive
  - Focus is on changeable behaviors
  - On-going
Role-Modeling as Teaching

Characteristics of Good Role Models:
- Stimulates thinking, critical knowledge
- Demonstrates skills/decisions confidently
- Gives feedback
- Allows learner to be autonomous
- Spends time teaching
- Demonstrates good doctor-patient relationship
- Use your own role models as examples to emulate
Teaching Strategy:
One Minute Preceptor

Context
- Clinical setting – Busy
- Ambulatory
- “Low risk” (one-on-one, OK to hypothesize)
- Outside of the patient’s room
- Not a lecture
- Let’s you assess what the learner is thinking
Five Teaching Microskills

1. Get a commitment
2. Probe for supporting evidence
   - What’s going on here?
   - Why do you think that?
   - What’s your evidence?
Five Teaching Microskills (cont’d)

3. Teach general rules
   “Rule of Thumb”
   “In most cases, these lab results lead to a diagnosis…”
   “In general, there are two common diagnoses for these symptoms”

4. Reinforce what’s done well

5. Correct errors

6. Giving feedback is a critical part of teaching
Resources

- Information compiled from:
  - “Essential Information for residents Who teach Medical Students at UWSMPH 2011-12” handout
  - “Stanford School of Medicine Guidelines for Optimal Resident Interactions” handout
  - “Residents as Teachers”, Mary Gleason Heffron, Aurora Health Care, 2010
  - Neuroscience Clerkship handbook/orientation slides
  - UWSMPH Web site