

## **Neuroanatomy (Biol360)**

**Fall 2013**

**Liz Jansen**

**MWF 9:40-10:40AM O/R 301 Lab Th 8-11:10AM O/R 275**

Office: 220 Olin/Rice

Office hours: MW 1-2PM or by appt

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### **Texts and Resources**

#### **Required:**

1. **Neuroanatomy: An Atlas of Structures, Sections, and Systems- 8<sup>th</sup>Ed.**, Duane E. Haines, Lippincott Williams & Wilkins, 2012. (Yes there are previous editions, but this edition has more and updated images and clinical correlations. If you choose to use an older edition, that is up to you--- but you'll have to do the page translations and figure out what you are missing.)
2. **When the Air Hits Your Brain: Tales from Neurosurgery**, Frank Vertosick, Jr., 2008.
3. **An Anthropologist on Mars: Seven Paradoxical Tales**, Oliver Sacks, 1995.
4. **Website:** [www9.biostr.washington.edu](http://www9.biostr.washington.edu)

#### **Highly Recommended:**

1. **The Lobotomist: The Maverick Medical Genius and His Tragic Quest to Rid the World of Mental Illness**, Jack El-Hai, 2005.
2. **Brain on Fire: My Month of Madness**, Susanah Cahalan, 2013.

#### **Overview**

The human nervous system is an incredible system of structures and interconnections that serve our most fundamental needs (e.g., temperature regulation, breathing, appetites, posture and balance), as well as our most complex and sophisticated endeavors such as dance, music and literature composition, imagination, aspiration, and of course, your focus the semester, learning.

*Neuroanatomy* is a course designed to familiarize you with the structure and function of the human nervous system through lecture and lab. There is much that can be learned about the systematic and (sometimes) linear organization of the nervous system. With this understanding, one can appreciate development and often predict deficits following injury or disease. This is where the Haines atlas comes into use.

On another level, however, the brain can astound and confuse and seem to be anything but systematically organized. This is where the accounts by Sacks and Vertosick come into play. Human nervous systems have surprised and impressed for millennia. The individual who does not welcome the recovery of sight after decades of blindness, the trained neurosurgeon who invades the brain of a patient on the operating table, the massive brain tumor interpreted by others as enlightenment... these stories remind us of the complexity of the brain, its incredible abilities, and the importance of the context and response of those around us. The entirety of the function of the human nervous system is much more than the pathways and systems. One begins with understanding the simpler pathways but ends with humble appreciation and awe of the functions of the human nervous system in its entirety.

#### **A couple of extra notes:**

- Guest speakers will visit during the semester who will give us special opportunities to apply what we have learned and provide insights into clinical contexts and clinical correlations. Out of respect for our guests, and because it will not be possible to make up these experiences, you are strongly encouraged not to miss or be late for these guests.
- Learning neuroanatomy requires a mix of reading, touching, visualizing, memorizing and understanding how systems reside and work together. There is no substitution for the hands on lab experiences to learn how the nervous system is organized. I strongly encourage you to draw out the different systems and pathways to understand them fully.
- There will be readings, handouts and links posted on our course Moodle site. Consult the Moodle site frequently.

## Grading

Your learning will be assessed through exams, quizzes, presentations and participation. See below.

## Quizzes

There will be up to 4 unannounced quizzes that will be administered in lab. There will be no make-up or late starts for the quizzes. This is a simple, transparent strategy to get you to lab on time for every lab and to help you stay on top of the material.

## Student Group Presentations and Book Discussions

Students will be assigned a cranial nerve to teach to the class on September 19. More information to follow. Students will also be assigned a day to lead class discussion on chapters from the Vertosick and Sacks books.

## Final grades will be calculated in this way:

60% Exams =	Midterm:	Class = 15%	Lab = 15%
	Final:	Class = 15%	Lab = 15%
20% Presentations/Book Discussions			
15% Quizzes			
<u>5% Attendance and Participation</u>			
100%			

## Your story and any disabilities

I look forward to getting to know each of you this semester both in and out of class and lab. I hope you'll take the time to stop by and chat about class material, your plans and ideas, and life in general.

I am committed to providing assistance to help you be successful in this course. Accommodations are available for students with documented disabilities. Contact the Associate Dean of Students, Lisa Landreman, at 696-6220 to make an appointment if this applies to you. Please talk with me about any accommodations as soon as you become aware of your needs. Complete information regarding the accommodations process for students with disabilities can be found at [www.maclester.edu/studentaffairs/disabilityservices/](http://www.maclester.edu/studentaffairs/disabilityservices/)

## Technicalities, Pet Peeves and Procedures

If you absolutely must miss a class or lab, you should plan to get notes from someone (sometimes it is quite helpful to get more than one person's notes). If you miss a quiz in lab, you will receive a zero on that quiz. Rescheduling an exam, especially a lab practical, is not something I do except in the most extenuating circumstances. Contact me as soon as you become aware of a conflict. Late arrival to an exam is not a reason to be given extra time.

Academic integrity is paramount. Dishonesty, misrepresentation, or cheating in any form will not be tolerated. [www.maclester.edu/studentaffairs/studenthandbook/](http://www.maclester.edu/studentaffairs/studenthandbook/)

Finally, if you have a condition that requires you to step in and out of class, please let me know in advance. Otherwise, do not leave in the middle of class unless it is an emergency. It is very disruptive to others in the class. It is especially disruptive in an exam, so my policy is that **students may not leave the room during an exam**. Plan to attend to all issues (e.g., use the restroom, fill up water bottles, find Kleenex) *before* you arrive.

**Neuroanatomy (Bio360)**

Schedule always subject to change

Fall 2013

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MWF 9:40-10:40AM O/R 301, Lab Th 8:00-11:10AM O/R 275

Date	Topic	Readings/Notes
W Sept 4	Introductions	Familiarize yourself with all resources
<b>Lab 1 9/5</b>	<b>Gross anatomy of brain and spinal cord, getting oriented</b>	Haines Ch 2 Reading #1 posted on Moodle
F Sept 6	Introduction to Neuroanatomy	
M Sept 9	Cranial Nerves, Meninges, Ventricles, CSF	Haines Ch 3, 4
W Sept 11	Cranial Nerves, Meninges, Ventricles, CSF	
<b>Lab 2 9/12</b>	<b>Gross Anatomy</b>	Haines Ch 2 and 3
F Sept 13	Spinal Cord Anatomy, Vasculature, Intro motor systems	Haines Ch 4 and 8
M Sept 16	BOOK DISCUSSION 1: V1, 2, 3, 7 and 8	STUDENT-LED DISCUSSION
W Sept 18	Corticospinal tract	Haines Ch 8
<b>Lab 3 9/19</b>	<b>Cranial Nerve Presentations</b>	Student Cranial nerve presentations
F Sept 20	Somatosensory systems: DCML and ALS/STT	Haines Ch 8
M Sept 23	<b>Laura Li, MD, PhD, Neurologist, Neurological Associates, St Paul</b>	
W Sept 25	BOOK DISCUSSION 2: V4, 5 and 6	STUDENT-LED DISCUSSION
<b>Lab 4 9/26</b>	<b>Corticospinal Tract and Somatosensory systems: DCML and ALS/STT</b>	Haines Ch 5 and 8, p. 188-201
F Sept 27	Somatosensory systems: DCML and ALS/STT	Haines Ch 8
M Sept 30	Somatosensory systems	Haines Ch 8
W Oct 2	Cerebral Cortex and Thalamus	Haines Ch 2 and 8
<b>Lab 5 10/3</b>	<b>Review and Catch up</b>	
F Oct 4	BOOK DISCUSSION 3: V9, V10	STUDENT-LED DISCUSSION
M Oct 7	Cerebral Cortex and Thalamus	Haines Ch 2 and 8
W Oct 9	Catch up and Review	
<b>Lab 6 10/10</b>	<b>Midterm Practical and Written Exam</b>	

F Oct 11	<b>Fred Jacobson, PhD, '75, Genentech</b>	Macalester Distinguished Alumni Day, Poster Session 3:30-5:30PM
M Oct 14	Hypothalamus and Endocrine System	Haines Ch 8
W Oct 16	Extrapyramidal Motor Systems	
<b>Lab 7 10/17</b>	<b>Extrapyramidal Motor Systems</b>	

F Oct 18	<b>Autonomic Nervous System, Christopher Honda, PhD, University of Minnesota</b>	
M Oct 21	Brain Stem	Haines Ch 8
<b>TUESDAY Lab 8 10/22</b>	<b>Brain Stem</b>	LAB MEETS ON TUESDAY THIS WEEK.
W Oct 23	BOOK DISCUSSION 4: S1, S2, S4	STUDENT-LED DISCUSSION
<b>Thursday - Friday Oct 24-25 Fall Break – No Class</b>		
M Oct 28	<i>No Class</i>	Work on Neurological Disorders
W Oct 30	<i>No Class</i>	Work on Neurological Disorders
<b>Lab 9 10/31</b>	<b>Limbic System</b>	
F Nov 1	Limbic System	Haines Ch 8
M Nov 4	Limbic System	
W Nov 6	Language	
<b>Lab 10 11/7</b>	<b>Brent Clark, MD, PhD, '70 Neuropathologist, University of Minnesota</b>	
F Nov 8	<b>Thomas Henry, MD, '75 Neurologist, University of Minnesota</b>	
M Nov 11	Student Presentations	
W Nov 13	BOOK DISCUSSION 5: V11,12, 13	STUDENT-LED DISCUSSION
<b>Lab 11 11/14</b>	<b>Walter Galicich, MD, Neurosurgeon, Hennepin County Medical Center</b>	
F Nov 15	Hemispheric Asymmetries	
M Nov 18	Student Presentations	
W Nov 20	Student Presentations	
<b>Lab13 11/21</b>	<b>Lab Review</b>	
F Nov 22	Visual Pathway and Lesions	
M Nov 25	BOOK DISCUSSION 6: S5, S6, S7	STUDENT-LED DISCUSSION

W Nov 27	Student Presentations	
<b>Thanksgiving Break Nov 28-Dec 1</b>		

M Dec 2	Student Presentations	
W Dec 4	TBA	
<b>Lab 13 12/5</b>	<b>Lab Final Exam</b>	
F Dec 6	Review and synthesis	
M Dec 9	Review	
M Dec 16 <b>8-10AM</b>	<b>Cumulative Final Exam in class</b>	

**Your final grade will be calculated in one of these two ways:  
Let me know your preference by Monday, Nov. 4.**

**Plan A:**

60% Exams = Midterm: Class = 15% Lab = 15%  
Final: Class = 15% Lab = 15%  
20% Cranial Nerve/Book Discussions/Neurological Disorder Presentation  
15% Quizzes  
5% Attendance and Participation  
100%

**Plan B:**

50% Exams = Midterm: Class = 10% Lab = 10%  
Final: Class = 15% Lab = 15%  
20% Cranial Nerve Presentation/Book Discussions  
10% Neurological Disorder Presentation  
15% Quizzes  
5% Attendance and Participation  
100%