

**Welcome to
Nsci2100: Human Neuroanatomy**

Steven McLoon
Department of Neuroscience
University of Minnesota

email: mcloons@umn.edu

office: 4-158 Jackson Hall
lab: 4-165 Jackson Hall

Student Survey

- Please fill in the blanks on the front of the survey.
- On the back, tell us something interesting about yourself... tell us something you are passionate about, something you did this summer, anything that comes to mind.
- We will collect them soon.

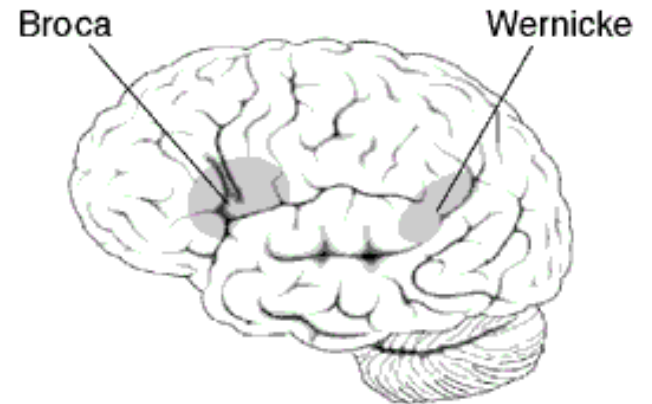
Meet Sarah Scott

<http://www.youtube.com/watch?v=1apITvEQ6ew>

Meet Sarah Scott

Sarah has Broca's aphasia following a stroke:

- She lost blood supply to a part of the left side of her brain called Broca's area.
- She has difficulty formulating language.
- Her memories are intact, and except for her ability to use language, she is cognitively normal.



Course Content

This course will provide a broad introduction to the nervous system with an emphasis on the human nervous system. The course will introduce the structure and function of neurons, the major anatomical parts of the nervous system and the main functional systems.

The laboratory component of the course is required.

This is a biology course.

Students will be expected to learn scientific terminology.

Course Outcome

It is expected that upon completion of the course students will be able to perform complex brain surgery on their classmates....

Course Outcome

It is expected that upon completion of the course students will have a greater understanding of how the nervous system is involved in most functions and activities of the body.

Students will gain an appreciation for how different functional systems interact to influence complex processes, such as the relationship between exercise and learning and memory.

Students will be able to hold a substantive discussion with a physician regarding a medical condition involving the nervous system.

Students

- This is a perfect course for anyone who plans to use his/her brain.
- For anyone who has no interest in using his/her brain, this course might get you thinking.

Course Website: URL

- <http://mcloonlab.neuroscience.umn.edu/2100/index.htm>

Course Website: Navigation

- Syllabus
- Schedule
 - ↳ with links to a Resource Page for each lecture
- Lab Manual
- Directory
- Course News
- Review
- Lectures
- Coffee hour
- Comments from previous students

Resource Page for each Lecture

- Links to the lecture slides (PDFs)
(typically posted on Friday for the next week)
- Recommended pages to read in:
 - *Essential Neuroscience* by Siegel & Sapru
 - *Essentials of the Human Brain* by Nolte
- Links to self-study worksheets (PDFs)
- Links to online resources (mostly YouTube videos)

Recommended Textbooks

- *Essential Neuroscience 3rd edition* by Siegel & Sapru
 - closely follows the course sequence
 - much more information than you will need to learn
 - figures are very good
 - text is very dry reading
- *Nolte's Essentials of the Human Brain 2nd edition* by T.W.Vanderah
 - much more concise
 - figures are clear
 - text has some gaps in the information
 - 2nd edition is new this semester

Office Hours

Dr. McLoon will meet with you...

- at coffee hour as per the schedule posted on the 'coffee hour' page of the website – day of the week & time will vary; usually it will be at Surdyk's Café in Northrop.
- in his office (Jackson Hall 4-158) by appointment.
- or will answer questions sent to him by email (mcloons@umn.edu).

The lab faculty will be available for questions immediately before and after each lab session

Coffee Hours Next Week

Tuesday (Sept 11) 10:00-11:00am

Friday (Sept 14) 8:30-9:30am

Surdyk's Café in Northrop Auditorium

Stop by for a minute or an hour!

Examinations

- Three midterms and a final exam will be given. (see course schedule)
- All exams will be multiple choice.
- Final exam will be cumulative.
- Old exams are available on the course website (links on schedule page for each exam).
- There is no time limit on exams (within reason and within room availability).

Class Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
10:10-11:05	lab section 2		lab section 6	lab section 7	
11:15-12:10	MCB 3-146B Liao		MCB 3-146B Lin	MCB 3-146B Lin	faculty prelab MCB 3-146B
12:20-1:10					
1:25-2:20	lecture Moos 2-620	lab section 5	lecture Moos 2-620	lab section 8	lecture Moos 2-620
2:30-3:25	lab section 3/4	MCB 3-146B Lin		MCB 3-146B Wessendorf	
3:35-4:30	MCB 3-146B/A Liao/Riedl				TA prelab MCB 3-146B
4:40-5:30		review session MCB 3-146B			

Welcome Dr. Riedl

Class Schedule

Laboratories start next week.

THERE ARE NO LABS THIS WEEK!

Labs will be in MCB 3-146B.

Laboratory Introduction

- First half: gross, macro and microscopic anatomy of the nervous system (human, sheep and rat brains).
- Second half: focus will be on functional systems (visual, somatosensory, motor, etc.).
- In the last (optional) lab, you will observe human cadavers.

Laboratory Introduction

- You need to print the lab manual.

It is available as a pdf from a link on the course website.

Laboratory Introduction

- Please use the following for your lab notebook:
Student Lab Notebook – Life Sciences
with spiral binding and 70 carbonless duplicate pages
(ISBN 978-1-930882-35-5)

It is available in the campus bookstore.

Laboratory Introduction

- What you need to bring to each lab:
 - ◆ Notebook
 - ◆ Lab manual
 - ◆ Pen or pencil
- Written reports are required for most labs. Lab reports are typically due at the next lab session.
- You may not turn in a lab report unless you attended the laboratory session.

Laboratory Introduction

- The laboratories will require the use of preserved tissue. Although the methods used to preserve the tissue inactivate most pathogens, a very small risk remains. To further protect students from pathogens and chemical hazards, students will be required to wear gloves during the labs in which tissue is to be handled. More details will be provided in class.
- Food or drink will not be allowed in the laboratory.
- Students who may be pregnant or are nursing should contact the laboratory instructor for further safety procedures.

Laboratory Introduction

- Out of respect for the individuals and their families who donated their bodies at death for our use, no photography of human tissue is allowed in the laboratories.

A Missed Laboratory

- Your lab instructor will provide an opportunity to make up a missed laboratory session with a valid and verified excuse.
- If you miss a lab, then you must email your lab instructor to arrange a make-up session as soon as possible.
- If you can anticipate that you will miss a lab session, then please discuss this with an instructor as far in advance as possible.

A Missed Exam

- Missed examinations with a valid and verified excuse can be made up by taking an oral & written exam with an instructor within one week of the regularly scheduled exam.
- Unless you can prove that you were admitted to the hospital, you are allowed no more than one make-up exam during the course.
- Contact Dr. Riedl as soon as possible to schedule a make-up exam.

Review Sessions

- Most Tuesdays, 4:00-5:00pm, in MCB 3-146B.
- Check the website for the schedule.
- Review sessions will focus on the previous three lectures.

Grades

A to F determined approximately as follows:

- ~48% midterm exams (~16% each)
- ~32% for the final exam
- ~20% laboratory reports

- Grades will be curved with the median centered on a 'B'

- 'Courtesy Cs' will not be given

Cheating

- You know what it is, and it will not be tolerated!!!
- Cheating will result in an 'F' grade for the course.

How can I learn everything?

Learning neuroanatomy is much like learning a new language. For most students, learning a new language requires daily study, typically one to two hours a day ... everyday.

How can I learn everything?

- **Study regularly... do not depend on cramming.**
There is too much material to hope to learn it at one time.
Cramming does not lead to long-term memory.
- **Repetition, repetition and repetition... did I mention repetition?**
Neural connections are strengthened by repeated activation.
- **Test yourself... do not just reread notes.**
Active learning is more effective than passive learning.
- **Turn off ALL distractions when you study... yes, music, TV, email, phone and facebook.**
Numerous studies have shown this to be true.

How can I learn everything?

- **Take handwritten notes during lecture.**

A recent study showed that students who took handwritten notes during lecture had better recall of the material than those who took notes on a computer or who just listened.

- **Review the most difficult material just before going to bed.**

The transfer of short-term memory to long-term memory takes place during sleep.

- **Get a full night sleep every night... really!**

Again, the transfer of short-term memory to long-term memory takes place during sleep. [A recent study showed that blocking REM sleep in mice prevented memory consolidation (Boyce et al., 2016, *Science* 352:812).]

How can I learn everything?

- **Exercise regularly.**

Cell division in the dentate gyrus of the hippocampus is required for certain types of long-term memory, and exercise increases cell division in this region and improves memory.

- **Eat a balanced diet.**

The brain requires energy and a full complement of basic molecules to function and build neural circuits; these can only come from a balanced diet.

- **Shoot your television!**

If you normally watch 2 hours of television per night, then dropping television would give you an additional 14 hours per week or 224 hours for the semester.

How can I learn everything?

- **Active learning wins!**
 - Write notes or notecards.
 - Make drawings.
 - Give lectures.
 - Do the worksheets.
 - Take the practice exams.
- **Attend the Tuesday review sessions.**

How can I learn everything?

- **In previous years, the students with the top grades in the course often studied together regularly.**