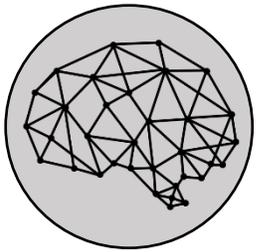


# History Of Neuroscience

Department of Psychology & Neuroscience  
1:25-2:15, MWF  
Fall 2018  
PSYC 415 – Course Syllabus

Instructor  
Dr. Marsha Penner  
mpenner@email.unc.edu

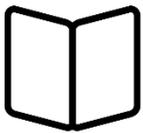
Office Hours: Please use the Sakai 'Sign-up' tool to reserve a time slot  
Office location: Davie Hall 237



## COURSE DESCRIPTION

This course is intended for students interested in how we know what we know about the structure and the function of the nervous system. In this class, we will consider how neuroscience emerged as a multidisciplinary field incorporating anatomical, behavior, cellular, and medical knowledge. The class will cover key research and breakthroughs, and we learn about the people who made those discoveries. We will consider these discoveries within a historical context – what was going on in the world at the time? How did this impact the field? Prerequisite: PSYC 220, or PSYC 315/175

## COURSE RESOURCES



Required Textbooks: 1) Neuroscience: A Historical Introduction (Glickstein); 2) The Tale of the Dueling Neurosurgeons (Kean)



Assignments, readings, etc can be found on the course Sakai site:  
<https://sakai.unc.edu/>

### WHAT YOU SHOULD BRING TO CLASS EVERY DAY:

1. A laptop or notebook for note taking. *Note: educational research shows that students learn more by handwriting notes!*
2. Extra blank paper for drawings, notes, activities etc.
3. 3 x 5 index cards.
4. Your laptop/tablet/smartphone enabled for UNC wi-fi access.

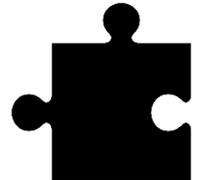
# COURSE REQUIREMENTS

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- 1. Class participation and class assignments:** Participating in class will contribute significantly to your learning experience. Active participation requires being present for the entire class period and taking part in the discussion. Participating in seminars and discussions involves developing a particular skill set. Therefore, you should expect to improve at discussion over time just like you would in other skills like reading, writing, or learning another language. Focus on improving your skills. This is an active learning process! I am more interested in your willingness to explore ideas - out loud – than “getting it right”. Note: attendance at jigsaw classes and poster sessions is necessary. I will take attendance for these classes. Missing these classes (unexcused) will reduce your participation grade by 50%. If you know you must miss a class, please let me know at least one week ahead of time, whenever this is possible. I will assign in-class assignments or administer ‘pop’ quizzes – these assignments/quizzes will be included in your participation grade.

- 2. Jigsaw discussion classes:** Each student will work within a small group of students to facilitate class discussion. For most of the topics that we cover in the Glickstein and Kean textbooks, we will also read the biography or autobiography of a neuroscientist who made major contributions to that particular topic. What will you do?

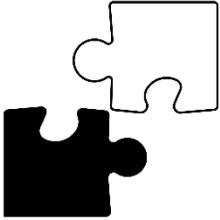


**Answer one of the following questions:**

- I. What major contribution(s) did the scientist make to the field? You should clearly describe what the neuroscientist did within the context of what was known at the time, what kinds of methods were available, what the scientific climate was like, etc.
- II. What barriers/obstacles did he/she face? If there weren't barriers or obstacles, then what helped them move neuroscience forward (i.e, what facilitated their work)?
- III. Where has the research gone since the initial discovery? Include a description of the current state of our knowledge. (For this, you will need to do additional research outside of the reading)
- IV. This is the most important job! Come up with one comprehensive discussion question that addresses key aspects of the reading. (Versions of some of these questions will appear on your exams.) Good discussion questions will integrate the reading for the current topic, and good answers will state a position and provide support/evidence for that position. Here are two examples for the Cajal Biography: 1) Cajal is credited with providing support for the Neuron Doctrine. What is the Neuron Doctrine, and why was it so controversial? 2) Santiago Ramon y Cajal was a remarkable and prolific neuroanatomist. Describe two of the key neuroanatomical observations that Cajal made. Would his work be so influential if he wasn't also a great artist? Why, or why not?

*\*I have put these questions into a word document for you, and uploaded it Sakai under 'Resources' so it's easier to work with the questions. Once registration for this class is finalized, I will post a document in the 'Resources' folder on Sakai that indicates which question you will answer for each jigsaw class.\**

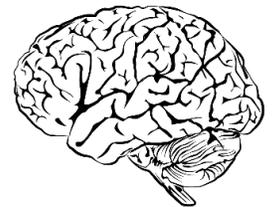
- V. **Putting the pieces together:** For each jigsaw class, you will provide a ~1 page response to one of the questions above. You will submit your response on Sakai the night before the relevant class – no later than 10pm (see class schedule). Don't forget to bring a copy with you to class to refer to! In class, we will work in two different groups.



- i. The first group you meet with will be your expert group. You will have all responded to the *same* question above (e.g., everyone in your expert group responded to question 1). The purpose of meeting with your expert group is to ensure you all have complete answers, and are ready to share your answers with another group. We'll take ~10 minutes for this step.
- ii. In the second group you meet with, you will all have a response to *one* of the questions above, and you will compile your information into a complete picture of the topic we are covering. We will be putting the pieces of the puzzle together! We'll take ~15-20 minutes for this step.
- iii. We will come back together as a class to: 1) summarize what we have learned, 2) work together to fill in any knowledge gaps, 3) work on responding to discussion questions, to give you some practice. We'll take ~15-20 minutes for this step.
- iv. You will hand in your written response to the discussion question at the end of class (~1 page). You'll have 5 minutes for this step. Feel free to consult your notes, or your classmates!
- v. I will compile the puzzles and discussion questions for you into a study guide to use for your exams.

This method of summarizing large amounts of information is called the 'Jigsaw Method'. It is a teaching method widely used to help students summarize large amounts of information. We are doing *a lot* of reading this semester. The use of this method is intended to lighten your load, while still ensuring that you extract the information that you need from the readings. If you are confused about how this works, there is an excellent short video that describes the process: <https://www.youtube.com/watch?v=euhtXUgBEts>.

3. **History of Neuroscience Poster Project:** Each student will generate a History of Neuroscience poster that will be presented at the end of the semester. You will choose a person, theory, method, or experiment to present. Pick something that you are excited about! I have uploaded a few examples on our Sakai site to give you an idea of what these might look like. This project is a lot of work: be sure to manage your time carefully. I expect original, in-depth projects.



- i. **Proposal** (10% of poster grade): Before you begin assembling your poster, you will submit a 2-3 page proposal on Sakai (deadline: Oct 1, 10pm). Your 2-3 page proposal will include the following:
  1. Description of the topic/person that you are interested in pursuing. Be specific. You will probably start out with a broad idea. Use this exercise to narrow your idea down (1 point)

2. A summary of what important world events were occurring at the time (e.g., WWII, World Fair, etc). How might these events influence the neuroscience research/discoveries at the time? (1 point)
3. A summary of why this topic interests you, or what led you to choose this topic. (0.5 points)
4. A working title for your poster (0.25 points)
5. Good writing skills. Always. (0.25 points)

ii. **Poster** (80% of poster grade): Please use the textbooks as a starting point for the poster. From there, you will do your own independent research. You may begin your research with a casual internet search to explore the topic/person; however, your poster must include references to AT LEAST three scholarly articles (it will likely be many more than this). I will assign your individual presentation date (please let me know if you have a preference for the first poster date). At a bare minimum (i.e., to 'pass'), your poster will:

1. Identify the person(s) and their contribution to neuroscience. How does their work fit into the history of neuroscience, generally? What is the historical background? Where was the field before their contribution? How has neuroscience been influenced as a result of the person(s) or theory? Alternatively, you might be choosing a method or other topic, rather than a particular person. The questions you address will be similar, but with an eye toward the topic you chose. Please come see me if you're not sure how to proceed.
2. How did world history or events impact the research/discovery? Provide some context for the work you are highlighting.
3. Summarize the current status of the topic/theory. Where has the research gone? Where is it going?
4. The use of carefully chosen graphics, excellent writing and organization of your information is crucial to communicating with your audience (see: <http://visual.ly/what-makes-good-infographic>)
5. An oral presentation of your poster will take place at the end of the semester during a poster session. You will have prepared and practiced a 3-4 minute presentation.



**NOTE:** If you are using a printing service (this is up to you), factor in time to have your poster printed for presentation. I would suggest contacting the place that will print your poster to find out what the wait times are. A print shop on campus offers printing services (<http://www.printstop.unc.edu/>), but you can use any printing service you like.

iii. **Resource Package** (10%): You will submit a packet of supplementary material for evaluation. It will be in the form of an annotated bibliography. Be sure to include **all** of the work you consulted. Choose whatever citation format you are accustomed to using (APA, SfN, MLA, etc). (5 points) **ALL resource packages are due on November 28 at noon.** You will submit your resource package on Sakai under 'assignments'.



4. **Exams:** There will be 2 exams, a Midterm and a Final Exam. Each exam will cover assigned readings and lectures since the previous exam. Exams will consist of "Who Am I" or/and "What Did I Discover" questions regarding your knowledge of the central figures and ideas in the History of Neuroscience. In addition, the discussion questions generated by you will also be used to generate exam questions. If you know that you are going to miss an exam, please arrange for an alternate testing date at least 1 week in advance of the exam date. **Final Exam Schedule:** We are required to have our final exam on **December 10th** at noon. If you have two exams at the same time or three exams within 24 hours and you want to reschedule the exam, see an academic advisor for an exam excuse form.

Note: We will go over more complete instructions on writing assignments, including specific grading criteria, in class.

## GRADES

5% = Discussion question responses (there are 5)  
 10% = Participation  
 15% = Jigsaw discussion classes (there are 5)  
 30% = Exams (12.5% Midterm, 17.5% Final)  
 40% = History Poster



### Letter Grade Assignments

A = 94-100  
 A- = 90-93  
 B+ = 87-89  
 B = 84-86

B- = 80-83  
 C+ = 77-79  
 C = 74-76  
 C- = 70-73

D+ = 67-69  
 D = 60-66  
 F = 0-59

Final grades are rounded (.4 down and .5 up).  
 For example 89.4 = 89/B+; 89.5 = 90/A-.

Here is an explanation of grades from the Undergraduate Bulletin (<http://www.catalog.unc.edu/policies-procedures/attendance-grading-examination/>):

## ACADEMIC INTEGRITY

All work that you do for this class must be completed according to the UNC Honor Code. You will maintain confidentiality of examinations. It is your responsibility to speak with your Professor if you are not sure what constitutes plagiarism or have any questions about the Honor Code. If you have not done so previously, please review the academic code at UNC at [http://integrity.unc.edu/hc\\_handout.html](http://integrity.unc.edu/hc_handout.html). All suspected cases of academic misconduct must be reported to the Office of the Dean of Students, and thus we are compelled to do so if we suspect academic misconduct of any kind.



## DIGITAL ETIQUETTE



It might be necessary to use a digital device during class time. Please be respectful of your classmates and restrict your use to course content. Hopefully it will never come to this – but we will ask you to put your device away for the rest of the class, and you will forfeit your participation points for that day if you chose to distract your peers during class time. Your behavior affects everyone around you: I have sat in the back of my classroom and was unable to concentrate because of the distractions on computer screens throughout the classroom. We are all working as a learning team in class, and we’re only as awesome as our weakest link! Don’t let it be you!

## OTHER RESOURCES ON CAMPUS

The Writing Center is a wonderful resource to use if you need some help with your writing and editing skills, and The Learning Center would love to coach you – they have excellent coaching opportunities for things like time management, study skills, and goal setting. Give them a try!



If you experience difficulty during the semester that interferes with your ability to come to class or complete your work, including difficulty securing food or housing, or stress and mental health issues, I urge you to contact the Office of the Dean of Students (in person or by phone 919-966-4042) or Counseling and Psychological Services (in person or by phone 919-966-3658). If you see that someone in our class is struggling, please let us know. We are a learning community and can help each other be successful.

If you require an accommodation, please contact the Office of Accessibility and Resources. If you have accommodations to take exams at the Office of Accessibility Resources, please let me know as soon as possible.

## SCHEDULE

**\*Changes to the Syllabus:** I reserve the right to make changes to the syllabus. If a change to the syllabus becomes necessary, I will announce this in class or by email. Additional reading may be assigned, and this will be announced via our course Sakai site. Please make sure you check your email and/or the Sakai site regularly for updates.

<u>Date</u>	<b>Topic and/or activity</b>	<b>Preparation for class/What’s due?</b>
W 08/22	Introduction to class	
F 08/24	Why study the History of Neuroscience?	Reading in Kean: Introduction Reading in Glickstein: Chapter 1
M 08/27	The Dueling Neurosurgeons	Reading in Kean: Chapter 1

W 08/29	Overview of the nervous system: structure and function	Reading in Glickstein: Chapter 2
F 08/31	The structure of nerve cells and their supporting tissue	Reading in Glickstein: Chapter 3
M 09/03	Labor day – No classes	
W 09/05	Biography Ramon y Cajal	Reading: On Sakai (look in resource folder)
F 09/07	All about Library Research	Reading TBA
M 09/10	Electrical transmission	Reading in Glickstein: Chapter 4
W 09/12	Classes canceled	
F 09/14	Classes canceled	
M 09/17	Classes canceled	
W 09/19	The Assassin's Soup  Chemical transmission and the mechanisms of drug action	Reading in Kean: Chapter 2  Reading in Glickstein: Chapter 5
F 09/21	Library field trip! We will view Vesalius' book – an original first edition published in 1543.  We will be meeting at Wilson Library Special Collections Learning Center. The Special Collections Learning Center is located on the right side of the front entrance lobby.	
M 09/24	Vision: Central Mechanisms  Wiring and Rewiring the Brain	Reading in Glickstein: Chapter 8  Reading in Kean: Chapter 3

W 09/26	Autobiography: David Hubel Jigsaw classroom 1	Reading: On Sakai Complete your jigsaw assignment and submit to Sakai no later than 10pm the night before this class
F 09/28	Facing Brain Damage	Reading in Kean: Chapter 4
M 10/01	Brain Control of Movement The Brain's Motor	Reading in Glickstein: Chapter 13 Reading in Kean: Chapter 5
W 10/03	Learning and Memory	Reading in Glickstein: Chapter 14 <b>Submit your proposal by 10pm</b>
F 10/05	Honest Lying	Reading in Kean: Chapter 10
M 10/08	Biography: Donald Olding Hebb	Reading: On Sakai
W 10/10	Autobiography: Brenda Milner Jigsaw classroom 2	Reading: On Sakai Complete your jigsaw assignment and submit to Sakai no later than 10pm the night before this class
F 10/12	Library Research	<b>Submit library assignment (found on Sakai)</b>
M 10/15	<b>Midterm exam</b>	
W 10/17	Motivation	Reading in Glickstein: Chapter 15
F 10/19	Fall Break – No classes	
M 10/22	Biography: James Olds	Reading: On Sakai
W 10/24	Language and the Brain	Reading in Glickstein: Chapter 16
F 10/26	Left, Right, and Center	Reading in Kean: Chapter 11
M 10/29	Neurological Disease	Reading in Glickstein: Chapter 17

W 10/31	The Laughing Disease	Reading in Kean: Chapter 6
F 11/02	The Sacred Disease	Reading in Kean: Chapter 8
M 11/05	Class canceled	
W 11/07	Autobiography: Herbert Jasper  Jigsaw classroom 3	Reading: On Sakai  Complete your jigsaw assignment and submit to Sakai no later than 10pm the night before this class
F 11/09	Personality and emotion	Reading in Glickstein: Chapter 18
M 11/12	Autobiography: Paul D. MacLean  Jigsaw classroom 4	Reading: On Sakai  Complete your jigsaw assignment and submit to Sakai no later than 10pm the night before this class
W 11/14	Sex and Punishment	Reading in Kean: Chapter 7
F 11/16	Consciousness and the Techniques for Study of the Brain	Reading in Glickstein: Chapter 20
M 11/19	Autobiography: Benjamin Libet  Jigsaw classroom 5	Reading: On Sakai  Complete your jigsaw assignment and submit to Sakai no later than 10pm the night before this class
W 11/21	Happy Thanksgiving! No classes	
F 11/23	Happy Thanksgiving! No classes	
M 11/26	Mental Illness and the History of Surgical and Drug Treatment	Reading in Glickstein: Chapter 19
W 11/28	Poster session I	Submit your resource package to the Sakai site by 9am.
F 11/30	Poster session II	

M 12/03	Poster session III	
W 12/05	Wrap up discussion and evaluations	
<b>M 12/10</b>	<b>Final Exam 12pm</b>	