

# PSYC 449 – Seminar in Cognitive Neuroscience

## *Neuroscience for Policymakers*

Spring 2018 - Claire M. Fagin Hall, Room 103

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Office Location: Goddard Labs 203, Hamilton Walk

Office Hours: Wednesday 1:30-4pm or by appointment

### **Course Description**

This seminar will provide an overview of the neuroscience behind some of the most relevant issues in public health policy today. Why are clinical trials for Alzheimer's disease treatments so difficult to run and why do so many fail? How does the teenage brain make decisions and who should be considered an adult in court? What is implicit bias and why do we make snap decisions based on mental associations? If you could 'improve' your brain with devices or drugs, should you? How can your decisions be influenced? We will examine the primary scientific literature as well as delve into lay articles about the science and policy surrounding each issue. A basic understanding of neuroscience and comfort with primary literature is assumed.

### **Webpage & Email**

The course webpage is available on Canvas. You will find this syllabus, lecture slides, all required readings and other course materials, as well as related links. You are expected to check both your college email and the course Canvas page frequently for course announcements and readings/assignments. I will respond to emails when I can (usually within 24h), but do not expect quick responses during weekend and evening hours.

### **Course Policies and Requirements**

**Syllabus + Readings:** This syllabus is your primary source of information about the policies and schedule of the course. If it's in the syllabus, you are responsible for it. This syllabus is provisional and subject to change. You are expected to do the readings as assigned. A large portion of each class meeting will be spent on discussion of the assigned readings, and it will be difficult to fully participate without having prepared. I will lead the class, but discussion is to come from the students. 'Entry Tickets' on the readings will be required prior to each class (uploaded to Canvas) to insure completion of the assigned reading.

**Participation & Attendance:** Since this course is a seminar, attendance and participation are mandatory. As a courtesy to your fellow students, please make an effort to be on time; your participation grade will suffer if you are habitually late. At minimum, each student is expected to speak and contribute to the discussion **THREE times** during each class discussion as their participation grade (and to participate fully in all classroom activities). Asking questions about something you didn't understand counts, chances are other students have similar questions! Please be respectful and attentive of other students are talking during discussion.

If you miss a class, participation points cannot be made up, however, each student gets one free missed class. In other words, attending 12 of our 13 meetings and participating fully (involvement in any activities, plus speaking 3 times in discussion) would be a 100% participation grade. Any student who attends all class meetings will get the additional participation points as extra credit. Missing more than 3 class meetings will result in failure of the course.

**Classroom Activities & Assignments:** Most class meetings will be divided into two halves. The first section of each class will feature discussion of the assigned readings and a classroom activity or assignment. The second half will usually feature lecture on material to prepare for the readings and discussion the following week. I will usually assign groups for group activities and all students are expected to participate fully. Each group need only hand in 1 copy of any work generated in class, but each student will receive their own grade. If you need to miss a class meeting and would like to make up the work (and points) missed, contact me or

attend office hours to discuss how to make up any assignments either before class or within 24h of missing class. In-class activities can be made up with permission but participation points cannot be made up (aside from the 1 free miss, see above).

**Note Taking & Technology:** Laptops and tablets are welcome in class, but be mindful of their use and please only use them for note taking, paper reading, and internet research in connection with classroom activities. Bring a pen and paper with you to every class as I will sometimes ask you to complete activities in class. I also will draw on the board, and will ask you to draw along with me. Cell phones must be on silent and stowed away during class unless permission is given for their use in a specific activity.

**Accommodations & Academic Integrity:** Any students with documented special needs or learning disabilities should discuss them with the instructor during the first week of class. Please note that Penn has strict rules on academic integrity (see [www.upenn.edu/academicintegrity](http://www.upenn.edu/academicintegrity)). Violations of the rules will be reported to the Office of Student Conduct and will likely result in automatic failure of the course.

### **Grades**

|     |  |
|-----|--|
| 15% | Classroom Activities & Assignments           |
| 15% | Participation & Attendance                   |
| 30% | Quizzes [15% each, lowest is dropped]        |
| 40% | Final Project [5% proposal, 35% final draft] |

**A** = outstanding work; all aspects of assignment(s) completed thoroughly; technically excellent; evidence of creativity and/or inspiration, deep contextual grasp of issues and connections among issues; and ability to synthesize individual elements into broader narratives or analyses.

**B** = good work; all aspects of assignment(s) completed thoroughly; technically competent (though not perfect) in spelling, grammar, format, citations; presentation adequate; does not consistently show creativity, deeper grasp of connections, interpretations, and/or synthesis among elements.

**C** = less than fully satisfactory work; assignment(s) not completed thoroughly or according to instructions; basic grasp of issues not always evident; more than occasional technical flaws.

**D** = basic work of course (or assignment) not done, little effort evident.

**Quizzes:** The quizzes serve to help make sure you are truly learning and incorporating the scientific material that we'll cover. Quizzes will be a mix of essay questions and short answer questions based on the content discussed in class (readings are more to support lecture and discussion content). I will provide a Study Guide before each quiz with examples of questions you may see as well as topics you should be sure to know. There are three quizzes but only your highest two scores will count towards your grade, thus your lowest quiz will be dropped. If you miss a quiz, that is your dropped quiz. Make ups are granted for religious holiday or severe extended illness.

**Final Project:** You will prepare a final project on a subject related to the course of your choosing (including both neuroscience and science communication/policy aspects), pre-approved by me. Possible formats for the project include a written term paper, a slide-based presentation, a podcast, a video, an infographic, or something you propose! You will have opportunity to brainstorm and workshop your project ideas with your fellow students in class prior to submitting a formal proposal to me. More details on the project will come later in the semester.

**Late Policy & Extensions:** In some circumstances, extensions for assignments may be granted. Acceptable reasons include severe illness, family emergency, or religious holidays. **The earlier you ask for an extension, the more likely I am to grant it** (extensions will not be granted at the last minute). For work turned in late without extension, the grade will drop one degree for each 24h of lateness (A to A-). After the third day, the work will no longer be accepted.

## **COURSE SCHEDULE**

The plans for this course are subject to change!

| <b>Date</b> | <b>Agenda</b>   |
|-------------|---|
| January 10  | What is Science Policy? How do you communicate your science?<br>How do you read primary literature?<br><i>Lecture: Alzheimer's Disease</i>      |
| January 22  | <i>Discussion: Alzheimer's Disease and Clinical Trials</i><br><i>Lecture: Concussion &amp; Traumatic Brain Injury</i>                           |
| January 29  | <i>Discussion: Concussion &amp; Traumatic Brain Injury</i><br><i>Lecture: Neuro Enhancement</i>   |
| February 5  | <i>Discussion: Neuro Enhancement – Devices &amp; Drugs</i><br><i>Section 1 Review</i>   |
| February 12 | <b>QUIZ 1</b><br><i>Lecture: Gender, Sexuality &amp; the Brain</i>  |
| February 19 | <i>Discussion: Gender, Sexuality &amp; the Brain</i><br><i>Lecture: Opioids and Addiction</i>   |
| February 26 | <i>Discussion: Opioids and Addiction</i><br><i>Lecture: Juvenile Justice, brain development, stress, poverty</i>                                |
| March 12    | <i>Discussion: Juvenile Justice, brain development, stress, poverty</i><br><i>Lecture: Implicit Bias, Race &amp; Law Enforcement</i>            |
| March 19    | <i>Discussion: Implicit Bias, Race &amp; Law Enforcement</i><br><i>Workshop for final project ideas (bring ~3 ideas to workshop with peers)</i> |
| March 26    | <b>QUIZ 2</b><br><i>Lecture: Oxytocin, Empathy &amp; Behavior</i><br><i>Final Project Prospectus Due – 11pm</i>                                 |
| April 2     | <i>Discussion: Oxytocin, Empathy &amp; Behavior</i><br><i>Lecture: Neuro Marketing &amp; Decision Making</i>                                    |
| April 9     | <i>Discussion: Neuro Marketing &amp; Decision Making</i><br><i>Lecture: Final Thoughts on Neuro + Policy</i>                                    |
| April 16    | <i>Discussion: Final Thoughts on Neuro + Policy</i><br><i>Final Presentations / Discussions</i>   |
| April 23    | <b>QUIZ 3</b><br><i>Final Presentations / Discussions</i>   |