



USCDornsife

PSYC 499: The Frontal Lobe: From Function to Philosophy

Spring 2016—Monday/Wednesday—4:00-5:50 PM

Location: GFS 210

Instructor: Leslie Berntsen, M.A.

Office: SGM 612

Office Hours: By appointment—just email to set up a time.

Email: leslie.berntsen@usc.edu

Course Description

Part neuroscience lecture, part semester-long thought exercise, this course will examine what it means to be uniquely human—from the molecular to the metaphysical. Beginning with basic physiology, anatomy, and neuroscience research techniques, the majority of the course will focus on the frontal lobe’s “higher order functions,” including social cognition, empathy, impulse control and controlled processing, and moral decision-making. The course will also address adolescence as a period of frontal lobe development, and psychopathy and related conditions as frontal lobe syndromes.

Throughout the semester, special attention will be paid to the real-world applications of the course material, including the consequences of dehumanization in intergroup conflict (featuring a field trip to the Museum of Tolerance), the legal implications of finding someone “not guilty by virtue of neuroscience,” and the role of neuroscience research in broader debates on fate vs. free will.

Recommended Preparation: PSYC 100: Introduction to Psychology and previous experience reading scientific journal articles (from any field)

Required Readings and Supplementary Materials: There is no textbook for this course. Required readings will consist of select empirical and review articles from peer-reviewed journals and handbooks, all of which will be posted on Blackboard.

Learning Objectives

- Exhibit mastery of the course material by completing weekly quizzes and assigned readings and participating in in-class lectures, discussions, and activities.
- Think critically to formulate opinions about the real-world implications of course material and effectively express these opinions during weekly discussions.
- Become active consumers of contemporary empirical research in social/affective neuroscience. Clearly communicate findings and their social significance in a capstone science journalism assignment.
- Apply in-class learning with a field trip to the Museum of Tolerance and get a glimpse of the first steps of neuroscience research with tours of the Southern California Twin Project Psychophysiology Lab and the Dana & David Dornsife Cognitive Neuroscience Imaging Center.

Course Format, Organization, & Grading

Each topic that we cover will span two class days: one devoted to lecture and another devoted to discussion. Each lecture day will serve as an introduction to relevant terms, concepts, and recent findings and will require no advance preparation on your part. After each lecture, you should feel prepared to read original empirical articles on the topic at hand and will be required to submit questions on the assigned readings that will guide discussion during the next class day. A quiz on each topic's lecture and readings will take place on the lecture day immediately following completion of that topic. For more detail, see the course calendar and the headings below:

Weekly Quizzes (40% of final grade)

To promote continuous engagement with the course material and encourage good study habits (i.e., distributed practice), non-cumulative quizzes will be administered at the beginning of every lecture day. (For example, since we will finish covering Basic Principles of Neuroscience on January 25th, that quiz will be our first item of business on the next lecture day—February 1st.) Quiz questions may be multiple choice, fill-in-the-blank, or (very) short answer, and will be derived from both lecture material and assigned readings. There will be a total of eleven quizzes and the single lowest grade will be dropped at the end of the semester.

Discussion Questions & Participation (20% of final grade, 10% each)

To give our entire class ownership of the course material, everyone will be required to submit one discussion question about each assigned reading every week. These questions can address anything from methodology to implications, but should inspire critical thought and debate, rather than just check comprehension. The best questions will, when possible, attempt to link the current week's topics to issues raised during previous weeks.

I will synthesize these questions, possibly add my own, and provide a list at the beginning of each discussion day. In order to facilitate this process, these questions will be due to Blackboard by 11:59 PM on the night before each discussion day.

Final Paper & Presentation (40% of final grade, 20% each)

For these assignments, your task is to choose at least five empirical articles (that have not already been assigned/discussed) and synthesize them into a coherent narrative that would be accessible to the general public. These assignments will require you to understand complex scientific concepts, accurately describe them in a digestible manner, and persuasively articulate why they matter—all of which are valuable and marketable skills no matter what kind of career you're thinking of pursuing. I promise I'm not having you do this just for the sake of doing it.

The written component is due on the day of the final exam and will take the form of a longform science journalism piece (e.g., one that might appear in *The New Yorker*, *The New York Times Magazine*, etc.) that not only summarizes relevant research, but also uses that research to make a point about society, broadly construed. Potential topics might include: How can we use findings on impulse control to understand the nature of addiction and, thus, inform effective drug policy? To what extent are psychopaths truly "incurable" and what implications might this belief have for the criminal justice system?) During the middle of the semester, you will submit short topic proposals in order to receive comments and suggestions before you begin to develop your ideas further.

The oral component will take the form of a ~15 minute talk to be presented during the last two weeks of class. Ideally, this will give you an opportunity to get an early start on your final paper, practice your public speaking skills in a supportive environment, and incorporate your classmates' feedback into your final draft.

Final letter grades will be assigned according to the following scale:

A	93-100%	B	83-86%	C	73-76%	D	63-66%
A-	90-92%	B-	80-82%	C-	70-72%	D-	60-62%
B+	87-89%	C+	77-79%	D+	67-69%	F	< 60%

Turning in Assignments

Unless otherwise specified, assignments should be turned in electronically to Blackboard. As a reminder, discussion questions are due by 11:59 PM on the night before each discussion day, final presentation slides are due on your scheduled presentation date, and your final paper is due by the scheduled end time of the final exam.

Attendance and Late Work Policies

Like graduate seminars after which this course is modeled, attendance is expected at every class meeting. If you know you won't be able to attend class on a certain day, please talk to me or email me in advance. If unforeseen circumstances preclude you from attending class, please email once you are able.

Unexcused absences will result in zero points for the daily quiz or discussion participation, as applicable. For excused absences (addressed on a case-by-case basis), you will have the opportunity to make up any missed quizzes when you return and your maximum discussion participation point total will be adjusted to account for your absence, as applicable.

Out of fairness to your classmates (and to keep this class running smoothly), late assignments will only be accepted without penalty in the event of confirmable illness or emergency. (If you know you will not be in class on the day an assignment is due, you are still responsible for submitting that assignment on time.) Without such extenuating circumstances, late assignments will incur a penalty of 20% off of the maximum score for every day late (including non-class days and weekends).

Laptop Policy: The Golden Rule

If you have a laptop (or tablet), you are more than welcome to bring it to class to take notes. Participation points will be docked if you appear excessively and inappropriately distracted by your computer or use it for non-academic purposes during class time. I also reserve the right to revoke your individual laptop privilege at any time. If you were speaking to a group of people about something you genuinely care about, you'd probably want them to pay full attention to you. Please just be kind.

Sensitivity & Safe Space Guidelines

It is my goal to foster an environment of mutual respect in which everyone can feel comfortable voicing their opinions or sharing their stories. On the first day of class, we will work together as a group to create ground rules for our discussions. If, at any point, you feel like information covered in this class triggers thoughts, feelings, or concerns that you would like to discuss further, please do not hesitate to reach out to me or to USC's Student Counseling Services (located in the Engemann Student Health Center, Suite 304) at (213) 740-7711.

Field Trips

In the spirit of true experiential learning, we will be taking several on- and off-campus field trips in order to bring the course material to life. When we leave the classroom, please keep in mind that you are not only representing yourself, but also the University of Southern California. You will be expected to conduct yourself with the utmost professionalism and respect. Participation points will be docked for inappropriate behavior and additional disciplinary measures will be taken for more severe infractions.

Academic Resources

If you start to struggle with the course at any time, please reach out as soon as possible. There is absolutely no shame in needing or seeking help. Please don't hesitate to speak with me before or after class or set up a specific time to visit during office hours. Although in-person communication guarantees an immediate response, you can

also email me and I will try my best to respond within 48 hours.

For general help with college coursework, including study skill tips and test-taking strategies, visit USC's Center for Academic Support in person in STU 301, call them at (213) 740-0776, or visit their website at <http://sait.usc.edu/academicsupport/index.html>

For specific help with writing (including free one-on-one tutoring), visit the USC Writing Center in person at THH 321, their website at <http://dornsife.usc.edu/writingcenter>, call them at (213) 740-3691, or email them at writing@usc.edu

For assistance with oral and written English communication, USC's American Language Institute offers credit-granting courses, one-on-one English tutoring and conversation partners for hire, and free informal conversation groups for non-native English speakers. For more information, visit ALI in-person at PSD 106 or online at ali.usc.edu, call them at (213) 740-0079, or email them at askali@usc.edu

Statement on Sexual Violence, Discrimination, and Identity-Based Harm

If you ask me, this is the single most important part of the syllabus and I need to know that people are aware of this information, so let's try something. If you have read this far, please email me your favorite GIF of Olivia Benson (the badass fictional sex crimes detective from Law & Order: SVU, not the kitten that Taylor Swift adopted/named after said badass sex crimes detective, just to clarify). Now, please read on...

If you have recently experienced sexual violence, discrimination, or identity-based harm and it is negatively impacting your academic performance, please don't hesitate to reach out to me so I can (1) help you get caught up in class, (2) put you in contact with the appropriate resources and services, and (3) answer questions to the extent that I am qualified to do so. But, if you'd rather not talk to one of your instructors about these issues, I completely understand. Here are some of those resources that I would have ended up telling you about:

Relationship & Sexual Violence Prevention & Services (RSVP): <http://engemannshc.usc.edu/rsvp/>

Sexual Assault Resource Center: <http://sarc.usc.edu/>

Student Counseling Services: <https://engemannshc.usc.edu/counseling/>

Student Support & Advocacy: <https://studentaffairs.usc.edu/ssa/>

Office of Equity & Diversity: <http://equity.usc.edu/>

Department of Public Safety: <http://dps.usc.edu/contact/report/>

Asian Pacific American Student Services: <http://sait.usc.edu/apass/>

Bias Assessment Response & Reporting: <http://studentaffairs.usc.edu/bias-assessment-response-support/>

Center for Black Cultural & Student Affairs: http://www.usc.edu/student-affairs/black_cultural_center/

El Centro Chicano: <http://sait.usc.edu/elcentro/>

LGBT Resource Center: <http://lgbtrc.usc.edu/>

For a list of VOICE Representatives (fellow students trained by RSVP on issues of sexual violence and gender-based harm): <http://engemannshc.usc.edu/rsvp/your-voice-peers/>

And finally, for information about your legal rights under Title IX: <http://knowyourix.org/>

Statement for Students with Disabilities

As an instructor, I strive to create an environment in which every student is given an equal opportunity to excel. If you are in need of special accommodations (e.g., large fonts or extra time on quizzes, class note-taker, etc.), please let me know as soon as possible and I will work with you to get you the help you need. Remember that any information you share regarding disability accommodations is confidential and will not be shared with other students.

In order to request disability-based academic accommodations, you'll need to register with Disability Services and Programs (DSP) in order to obtain a letter of verification. Instructors cannot provide accommodations without this letter, so please reach out to DSP as early in the semester as possible. DSP is located in GFS 120 and is open from 8:30 AM to 5:00 PM, Monday through Friday. You can also reach them by phone at (213) 740-0776 and online at www.usc.edu/disability.

For additional resources, you can also visit USC's Kortschak Center for Learning and Creativity in STU 311, reach them via email at kortschakcenter@usc.edu, over the phone at (213) 740-7884, or on their website at <http://kortschakcenter.usc.edu>.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment that fosters general principles of academic honesty. These include respecting the intellectual property of others, submitting your own individual work unless otherwise allowed by an instructor, and protecting your own academic work from misuse by others. All students are expected to understand and abide by these principles, summarized online at <http://www.usc.edu/student-affairs/SJACS/forms/AcademicIntegrityOverview.pdf>.

Initial instances of cheating or plagiarism will result in an individual meeting and an automatic grade of zero for the assignment. Any subsequent offenses will result in a failing grade for the course, with the matter being referred to the Office of Student Judicial Affairs and Community Standards for further review. For details of the review process, see <http://www.usc.edu/student-affairs/SJACS>.

If you have any questions about these policies or academic dishonesty in general, please ask me and I would be more than happy to answer them.

Emergency Preparedness/Course Continuity in a Crisis

In the event of an emergency, all applicable information and updates will be posted at emergency.usc.edu. These updates are not limited to, but will include, a method of instruction (e.g., Blackboard, teleconferencing, etc.) that will allow classes to continue without requiring travel to campus.

Course Schedule & Readings

The schedule and list of readings that follow are both tentative and subject to change. Any major revisions will be announced during class, posted on Blackboard, and confirmed via email.

1. Amodio, D. M., Bartholow, B. D., & Ito, T. A. (2014). Tracking the dynamics of the social brain: ERP approaches for social cognitive and affective neuroscience. *Social Cognitive and Affective Neuroscience*, 9(3), 385-393.
2. Amodio, D. M., & Ratner, K. G. (2013). The neuroscience of social cognition. In D. Carlston (Ed.) *Handbook of social cognition* (pp. 702-728). New York: Oxford University Press.
3. Azevedo, R. T., Macaluso, E., Viola, V., Sani, G., & Aglioti, S. M. (2014). Weighing the stigma of weight: An fMRI study of neural reactivity to the pain of obese individuals. *NeuroImage*, 91, 109-119.
4. Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1997). Deciding advantageously before knowing the advantageous strategy. *Science*, 275(5304), 1293-1295.
5. Blair, R. J. R. (2013). The neurobiology of psychopathic traits in youths. *Nature Reviews Neuroscience*, 14(11), 786-799.

6. Choudhury, S. (2010). Culturing the adolescent brain: what can neuroscience learn from anthropology?. *Social Cognitive and Affective Neuroscience*, 5(2-3), 159-167.
7. Cikara, M., Eberhardt, J. L., & Fiske, S. T. (2011). From agents to objects: Sexist attitudes and neural responses to sexualized targets. *Journal of Cognitive Neuroscience*, 23(3), 540-551.
8. Cikara, M., & Van Bavel, J. J. (2014). The neuroscience of intergroup relations: An integrative review. *Perspectives on Psychological Science*, 9(3), 245-274.
9. Farah, M. J. (2012). Neuroethics: the ethical, legal, and societal impact of neuroscience. *Annual Review of Psychology*, 63, 571-591.
10. Gatzke-Kopp, L. M. (2016). Diversity and representation: Key issues for psychophysiological science. *Psychophysiology*, 53(1), 3-13.
11. Gutsell, J. N., & Inzlicht, M. (2012). Intergroup differences in the sharing of emotive states: Neural evidence of an empathy gap. *Social Cognitive and Affective Neuroscience*, 7(5), 596-603.
12. Han, S., Northoff, G., Vogeley, K., Wexler, B. E., Kitayama, S., & Varnum, M. E. (2013). A cultural neuroscience approach to the biosocial nature of the human brain. *Annual Review of Psychology*, 64, 335-359.
13. Harris, L. T., & Fiske, S. T. (2006). Dehumanizing the lowest of the low: Neuroimaging responses to extreme out-groups. *Psychological Science*, 17(10), 847-853.
14. Johnson, S. B., Blum, R. W., & Giedd, J. N. (2009). Adolescent maturity and the brain: the promise and pitfalls of neuroscience research in adolescent health policy. *Journal of Adolescent Health*, 45(3), 216-221.
15. Molenberghs, P., Ogilvie, C., Louis, W. R., Decety, J., Bagnall, J., & Bain, P. G. (2015). The neural correlates of justified and unjustified killing: an fMRI study. *Social Cognitive and Affective Neuroscience*, 10(10), 1397-1404.
16. Noël, X., Brevers, D., & Bechara, A. (2013). A neurocognitive approach to understanding the neurobiology of addiction. *Current Opinion in Neurobiology*, 23(4), 632-638.
17. O'Connor, C., & Joffe, H. (2013). How has neuroscience affected lay understandings of personhood? A review of the evidence. *Public Understanding of Science*, 22(3), 254-268.
18. Van Goozen, S. H., & Fairchild, G. (2008). How can the study of biological processes help design new interventions for children with severe antisocial behavior? *Development and Psychopathology*, 20(3), 941-973.
19. Vul, E., Harris, C., Winkielman, P., & Pashler, H. (2009). Puzzlingly high correlations in fMRI studies of emotion, personality, and social cognition. *Perspectives on Psychological Science*, 4(3), 274-290.
20. Young, L., & Dungan, J. (2012). Where in the brain is morality? Everywhere and maybe nowhere. *Social Neuroscience*, 7(1), 1-10.
21. Zaki, J., & Ochsner, K. N. (2012). The neuroscience of empathy: Progress, pitfalls and promise. *Nature Neuroscience*, 15(5), 675-680.

DAY	DATE	STRUCTURE	TOPIC AREA	READING NUMBERS
M	January 11 th		Welcome & Introduction	
W	January 13 th	Lecture	Basic Principles of Neuroscience	
M	January 18 th		NO CLASS: Dr. Martin Luther King Jr.'s Birthday	
W	January 20 th	Quiz + Lecture	Basic Principles of Neuroscience	1, 19
M	January 25 th	Discussion		
W	January 27 th		NO CLASS: Leslie in San Diego for SPSP	
M	February 1 st	Quiz + Lecture	Social Perception & Cognition I	2, 7
W	February 3 rd	Discussion		
M	February 8 th	Quiz + Lecture	Social Perception & Cognition II	8, 13
W	February 10 th	Discussion		
M	February 15 th		NO CLASS: President's Day	
W	February 17 th	Quiz + Lecture	Executive Functions & Impulse Control	4, 16
M	February 22 nd	Discussion		
W	February 24 th	Quiz + Lecture	Empathy	21 <u>and</u> either 3 or 11
M	February 29 th	Discussion		
W	March 2 nd	Quiz + Lecture	Moral Decision-Making	15, 20
M	March 7 th	Discussion		
W	March 9 th	Quiz + Lecture	Cultural Neuroscience	10, 12
M	March 14 th		NO CLASS: Spring Break + Leslie in Washington for NSPS	
W	March 16 th			
M	March 21 st			
W	March 23 rd	Discussion		
M	March 28 th	Quiz + Lecture	Adolescence	6, 14
W	March 30 th	Discussion		
M	April 4 th	Quiz + Lecture	Psychopathy & Other Frontal Lobe Syndromes	5, 18
W	April 6 th	Discussion		
M	April 11 th	Quiz + Lecture	Neurophilosophy, Neuroethics, & The Legal System	9, 17
W	April 13 th	Discussion		
M	April 18 th	Quiz + Talks	Final Presentations	
W	April 20 th	Talks		
M	April 25 th	Talks		
W	April 27 th	Talks		
TBA	TBA		Final Exam: Final Papers Due	

Reminder: Discussion questions on the readings listed are due to Blackboard by 11:59 PM the night before the applicable discussion day. (You can do the readings before lecture if you like, but that is not required.) Quizzes will take place at the beginning of each lecture day for the most recent topic covered.