The Neuropsychology of Fear

MWTh 1:35-2:40p
Shillman Hall 320

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Office hours: T 11a-1p or by appointment
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"Fear" faces from Paul Ekman's classic Pictures of Facial Affect

"One of the things we know about fear is that you can always bring it back."

-Joseph LeDoux, PhD

Fear is one of the most universal and evolutionarily conserved emotions, observable in countless species—humans, mice, and even sea slugs all exhibit fear in some capacity. We need fear in order to survive, and yet the experience of fear in non-threatening situations can be debilitating. This course will explore the neural basis of fear from multiple angles, beginning with 19th century emotion theorists, working through landmark human and animal studies, and ending with an examination of fear-related pathologies. The course reading material will integrate mainstream media science writing with literature reviews and primary source research articles, ultimately providing you with a comprehensive understanding of not only what we know about the neuropsychology of fear, but how we came to know it.
Seminal contributions to our understanding of fear come from work done in the sea slug *Aplysia Californica*.

### Important Dates

- **Jan 16** No class – MLK Jr Day
- **Jan 19** 1st quiz – neuroanatomy
- **Feb 6** 1st exam
- **Feb 16** 2nd quiz – fear circuits & optogenetics
- **Feb 20** No class – Presidents Day
- **March 15** 2nd exam
- **April 5** 3rd quiz
- **April 19** Final exam

### Grading

Your final grade is calculated as follows:

- 25% 1st exam
- 25% 2nd exam
- 25% final exam
- 25% best two quiz scores (drop worst)

Exams are multiple choice, and quizzes are short answer. Exam make-ups are determined on a case-by-case basis, and are essay format. Since you can drop one quiz, **no make-ups for quizzes will be given**. There are no extra credit opportunities, but students who participate in class may find their final grade on the favorable side of a borderline situation.

### Journal Club

Some of our classes will not be lectures, but discussions of primary research articles, commonly called “journal club.” I will upload the papers a week in advance so that you have time to read it at least once (twice is better!). I will take you through the paper in class but you are expected to have read the papers in advance, and be able to both ask and answer questions about the science described in each one. See the *Reading Scientific Literature* file on Blackboard for more detailed guidelines.
Important things to know about this course:

1. **There is no textbook for this course**, because no appropriate textbook exists. To help you study outside of the classroom, I will be uploading all lectures to Tegrity. These files include lecture material only – general announcements made in class before or after lectures will not be recorded. **Tegrity files are not to be used as a substitute for attending class.**

2. **Your quizzes and exams are based solely on information given to you during class lecture.** All PowerPoint presentations will be uploaded to BlackBoard the night before each lecture so that you can follow along and take notes during class. If you miss a class, you are responsible for getting notes from a classmate and/or watching the Tegrity video.

3. **I am in my office most of the time.** Consider my official office hours to be merely placeholders—times when you know you can just swing by without pre-arrangement. If none of those times work for you, just email me with a proposed time you’d like to come, and I should be able to accommodate you.

4. **Ignore BlackBoard at your own peril.** I use BlackBoard to make announcements, provide extra reading material, and to host discussions that may give you a small boost on your final grade. “I didn’t know about ____” is never an acceptable excuse for poor performance in this course.

5. **Ask questions!** Science is a conversation. One of the primary goals of this course is to help you understand how scientists approach the study of fear, and—believe it or not—we don’t have it all figured out yet. You are encouraged to speak up during class, come to me with questions, or start a discussion in the forum on Blackboard. I want to see you thinking critically and engaging with the material, not just regurgitating the things you hear me say during lecture.

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**Academic Integrity**

Academic dishonesty is a serious offense, recognized by the Northeastern University students themselves in the Academic Integrity Policy, and renders the offender liable to disciplinary action. I trust that any work you submit is your own and reflects your understanding and thoughts of the course material. Students who violate academic policy will be subject to penalties ranging from grade reduction on the particular exam to grade reduction or failure of the entire course.

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A saggital-plane MRI of a patient with Post-Traumatic Stress Disorder