Cognitive Neuroscience of Aging
PSB 4934 Section 17G9
Fall 2016, Tuesdays Periods 9-11 (4:05-7:05)
Benton Hall, Room 0328

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CLASS WEBSITE:
The website for this course can be accessed through e-learning. Here you will find class announcements, a copy of the syllabus, links to the assigned readings, and a copy of the lecture slides.

REQUIRED READINGS:
There is no required textbook for this course. Readings will be required for each week of the course and will be provided on the course website.

COURSE DESCRIPTION & OBJECTIVES:
This course is designed to provide you with an overview of age-related changes in brain structure and function and the link between these changes and neurocognition in the elderly. Both normal and pathological aging will be considered. Course content will focus on the latest research in cognitive neuroscience, cognitive aging, and neuropsychology. The course will highlight the importance of integrating information and methodologies from various disciplines (e.g., cognitive experimental designs, epidemiologic studies, neuroimaging, basic science research and clinical neuropsychological approaches) to tackle the challenges of performing research in the cognitive neuroscience of aging.

By the end of the semester, you should have an understanding of:
- The brain changes that occur in “normal” aging
- Specific brain changes that are associated with pathological conditions, such as dementing disorders and other psychological conditions
- The impact of neural changes on cognition in the elderly
- Methods for studying brain structure, brain function, and cognition in older adults
- Genetic, basic science, and animal research related to cognitive and brain aging
- Modifiers of cognitive and brain aging

COURSE REQUIREMENTS:
Weekly Quizzes: You will be given a quiz each week that will cover the material from the previous week. You will need to log onto the course website to take the quiz in e-learning. The quiz will be available for you to take from Monday morning until Tuesday at 3pm each week. Content will mostly focus on the lecture and readings, but on some weeks will also require you to look for or use online resources related to the topic. Quizzes will consist of 5 short answer, multiple choice, or true/false questions. Each quiz will be worth 5 points. Make sure to budget 15 minutes of time to take each quiz, even though some might be shorter.

Research Article Critiques: Over the course of the semester, you will turn in a short critique of 5 research articles that are related to the weekly lectures. On the class website (Modules tab), you will find research articles related to the topic on each day of class. You will choose 5 different lecture dates and select one article out of the options to critique. Students are required to list at least two strengths and two weaknesses of the chosen article. You will submit the critique on the course website. The critique is due by midnight the Monday before the class period in which the topic is discussed. Each critique is worth 10 points.

Neuroscience in the News Paper: The news and social media are full of stories related to the topics covered in this course. Some of the information is fairly accurate, but unfortunately some stories are full of inaccuracies, distortions, and other types of misinformation. You will write a brief (1-2 page double-spaced) report critiquing a story or video related to the course material that you find in either traditional news sources or in social media. You will choose one of the weekly topics, beginning with the topic on September 6. You will then search for a related story or video in the news or social media to critique, and submit your report through e-learning. Your source should not be from a scientific peer-reviewed journal; the point of this assignment is to critique the representation of scientific information by non-scientists. Your
The report will be due the Friday after the class session you choose. You will submit the report on the class website. More detailed instructions will be provided on the course website.

**Research Paper (Final):** Each student is required to write a critical review paper that focuses on a topic that is related to the course (e.g., neuroimaging studies of memory in older adults, brain changes in older patients with depression, post-mortem studies of Alzheimer’s disease). The topic can be of your choosing, but it must be approved by me no later than the end of class on Tuesday, November 29. I would encourage you to begin thinking about potential topics early so that you will have time to revise the topic as needed by the deadline. This paper will serve as your final and will be due on Monday, December 12 at midnight. More detailed instructions will be provided on the course website.

**Extra Credit:** You can earn 5 extra credit points, which will be added to the grade for your final research paper. Attend a research presentation on campus or elsewhere that focuses on cognitive or brain aging. Write a 1-page (double-spaced) summary of the presentation. Briefly describe the research question, the method that was used, and the results. Explain why the topic of the presentation is important for understanding the cognitive neuroscience of aging. The summary must include the title of the presentation, name of the presenter, name of the seminar series (e.g., UF Neurology Grand Rounds), and date of the presentation. A few seminar series on campus that may include relevant presentations can be accessed at the following websites:

- Neurology conference schedule: [http://medinfo.ufl.edu/cgi-bin/cal.cgi?file=neuro-res](http://medinfo.ufl.edu/cgi-bin/cal.cgi?file=neuro-res)
- Neuroscience conference schedule: [http://neuroscience.ufl.edu/education/seminar-schedules/](http://neuroscience.ufl.edu/education/seminar-schedules/)
- UF Health Science Center calendar: [http://www.health.ufl.edu/calendar.shtml](http://www.health.ufl.edu/calendar.shtml)
- Institute on Aging seminars: [http://aging.ufl.edu/all-seminars/](http://aging.ufl.edu/all-seminars/)

You may also watch an archived lecture video provided on the NIH website if the lecture is related to aging and the brain or aging and cognition. Videos can be accessed at [https://www.youtube.com/user/nihvcast/videos](https://www.youtube.com/user/nihvcast/videos).

If you’re not sure that a presentation will count towards extra credit, it is recommended that you get approval before attending and writing your summary.

**Course Grade:**
Grading will be determined as follows:
25% Quizzes
25% Article critiques
25% Neuroscience in the news report
25% Research paper

**Grading Scale:**
90-100 = A
87-89 = B+
80-86 = B
77-79 = C+
70-76 = C
67-69 = D+
60-66 = D
<60 = E

**Late and Make-up Work:** Late work will be penalized 5% per late day unless 1) arrangements are made with me prior to the due date, or 2) there is a documented emergency. Be prepared to provide documentation of any emergencies that may arise (e.g., a doctor’s note if you are out sick, a police report if you have a car accident). This policy will be strictly enforced.

**ATTENDANCE AND CLASSROOM ETIQUETTE:**
Attendance is strongly recommended. Lectures and discussions reinforce material in the reading and often add new concepts, ideas, and interpretations that will optimize your learning in the course. Excessive absences will lower your participation grade in the class. Students attending class are expected to arrive on time. Please be considerate of your fellow classmates by turning off cell phones and other electronic devices during class.

**ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:**
If you require accommodations due to a disability, UF policy states that "Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation." Please stop by during office hours or make an appointment so that we may discuss how best to address your needs.

**ACADEMIC HONESTY:**
The UF student Honor Code states: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." On all work submitted for credit by students at the university, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

UF's Academic Honesty Policy can be found at [https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/](https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/).

*Work that does not comply with UF's Academic Honesty Policy will automatically receive a "0" grade and may result in further action depending on the severity of the offense.*

**IMPORTANT DATES:**
November 22-December 9 – Faculty course evaluation period
November 29 – Deadline for approval of research paper topic
December 12 – Research paper due by midnight

**COURSE SCHEDULE AND READINGS**

*Providing a Context*
August 23: Class overview and introduction; the aging individual; neuroanatomy review

August 30: Neuroimaging methods in the cognitive neuroscience of aging


**Cognitive and Brain Changes in "Normal" Aging and Dementia**
September 6: Structural and functional changes in the aging brain

September 13: Cognitive correlates of “normal” brain aging
*Guest lecturer: Talia Seider, MS, Department of Clinical and Health Psychology*


September 20: Functional consequences of cognitive and brain aging

September 27: Cognitive profiles in Mild Cognitive Impairment, Alzheimer’s disease, and other dementias  
Guest lecturer: Jacob Lafo, MS, Department of Clinical and Health Psychology


October 4: Neuropathology of dementia  


October 11: Dementia Case Examples  
No required reading

October 18: Animal models of cognitive aging  
Guest lecturer: Sarah Johnson, PhD, Department of Neuroscience

Reading TBA

Modifiers of Cognitive and Brain Aging  
October 25: Depression  


November 1: Exercise and cognitive training  


November 8: Emotional Aging  
Guest lecturer: Tian Lin, Department of Psychology

Reading TBA

November 15: NO CLASS (instructor at conference)

November 22 – Thanksgiving – NO CLASS

November 29: Pain and cognitive/brain aging  
Guest lecturer: Dr. Yenisel Cruz-Almeida, Department of Aging & Geriatric Research

Reading TBA

December 6: Vascular disease  
Guest lecturer: John Williamson, PhD, Department of Neurology

Reading TBA