

**Psychology 2576 - 1360**  
**Health Neuroscience**  
**Class Number: 28896**  
**Spring, 2015 (Jan 8, 2015 - April 16, 2015)**

**Class Meeting:** Thursdays 1:00PM - 3:55PM, 621 Old Engineering Hall  
**Professor:** Peter Gianaros, Ph.D.  
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**Web Site:** <http://www.courseweb.pitt.edu>

**Course Description:**

How does the brain influence physical health? How does physical health influence the brain? We will consider questions like these by working through recent empirical articles that illustrate some of the themes, concepts, and methodologies of health neuroscience. This will enable you to plan a research study that considers the brain as a mediator or target of a particular health-related outcome or process of your choosing. In addition to proposal writing, this course will help you to develop other skills, including: (i) synthesizing findings and integrating concepts from health psychology and neuroscience; (ii) explaining such findings and concepts to your colleagues; (iii) critiquing the work of your peers in a constructive manner; and (iv) using peer feedback to improve your own work. Some of the topics that we may consider from a health neuroscience perspective include:

- acute, chronic, and early life stress
- brain – ANS interactions
- brain – HPA interactions
- brain – immune interactions
- brain – gut interactions
- chronic health conditions (e.g., dementia, cardiovascular disease, diabetes, obesity, inflammatory disorders)
- cognition
- comorbidity between physical and mental health conditions
- emotion, emotion regulation, and psychopathology
- health behaviors (e.g., smoking, diet, sleep)
- interoception
- interventions for health promotion (e.g., mindfulness, physical activity)
- pain
- personality
- placebo effects
- race and ethnicity
- social factors (e.g., rejection, integration, support, stigma, status)

This list is illustrative, not exhaustive. Readings will be tailored to the interests of the students, with priority given to those of you taking the course for credit. I will determine the schedule, keeping in mind the best order of discussion for the to-be-covered topics. If you are concerned about your preparation for this course, please feel free to talk with me.

**Meeting Format:**

Each week, a student will lead a discussion of 2 empirical articles. Students will select these with my approval (and assistance when needed). Ideally, the articles chosen by each student will relate to her or his own interests and research proposal topic. One article must be a neuroscience paper (i.e., a

paper with direct functional or structural measurements from the brain in humans or animals); the other must be a health psychology, behavioral medicine, epidemiology, or comparable paper from a related field (i.e., any paper that does *not* have neuroscience measures, but one that establishes a health context for the discussion).

The discussion will be comprised of 3 parts:

- Part 1: This consists of a short introduction to establish the overall health neuroscience context that thematically links the 2 empirical articles. Using slides or a handout for this is appropriate. For Part 1, it will be important to consider the conceptual model presented in Figure 1 of Erickson, Creswell, Verstynen, and Gianaros (Curr Dir Psychol Sci, 2014, vol. 23, no. 6, 446-453). This introductory presentation should be brief (about 15 min). This introduction may require the discussant to read additional papers, depending on her or his background training and knowledge. Here, it is the discussant's responsibility to explain key concepts and measures that we may encounter in the 2 articles, as well as the overall significance of the general health topic or construct under discussion. It may also be necessary to describe briefly the functional neuroanatomy of particular brain areas or networks that we may need to know about in the chosen neuroscience paper (I am available to help with this when needed). To the extent possible, the discussant should also describe what important information is known and not known about the health topic or construct from a neuroscience perspective. *Doing the latter will help significantly with proposal writing.*
- Part 2: This consists of a group discussion of the 2 empirical articles (with a break in between). The discussant will choose the order in which we will discuss the articles. All students must bring a copy (electronic or printed) of the assigned journal articles for the student-led discussions. And, it is **CRITICAL** that you do the reading *before* class. Further details about these discussions are below.
- Part 3: This consists of a brief presentation of the discussant's final thoughts on what she or he might be interested in doing next in terms of a research study or line of research. When relevant, it may instead be appropriate to discuss ideas for a review paper or new conceptual model that links or integrates neuroscience and health psychology approaches to a particular topic. This discussion does not need to be too detailed and should last no more than about 10-12 min. Here, it is the student's responsibility to describe what she or he thinks is still left unknown from the articles under discussion and what the important next steps are at an empirical or theoretical level. *Again, doing the latter will help with proposal writing later in the semester.*

### **Class Requirements and Grading:**

In this class, you will be evaluated on the basis of (1) your active participation in discussions and feedback that you provide to your colleagues; (2) the quality of your questions posted on CourseWeb for in-class discussions; (3) your skill in presenting, leading, and moderating discussions of research articles; and (4) the quality of your papers.

#### **1. Attendance, feedback, and active class participation (10 points):**

Students are expected to read the assigned papers (e.g., chapters and research articles) before each class, and to contribute to discussions by speaking up, asking questions, and making comments on a regular basis. Attendance includes arriving to class on time and staying until the official end time. Thus, these points are based on being in class, and when in class actively participating in and contributing to class discussions. The goal is for all of the seminar participants to have a roughly equal voice in the discussions—so, please be mindful of others as you join discussions. Finally, part of your class participation will involve providing feedback to the other students in the class. Specifically, you will be asked to provide constructive feedback (no more than 1 page, single-spaced) on a draft of a

research proposal written by one other course participant. I will evaluate the quality of this feedback and assign participation points accordingly.

## **2. Posting discussion questions (10 points):**

To ensure adequate class preparation, all students must post at least one discussion question on each assigned article on CourseWeb no later than 7PM on the day prior to our class meeting (see course schedule below). We may move this deadline if students indicate that this will not allow them adequate time to prepare to moderate the discussions. In the event that CourseWeb is inaccessible, questions should be emailed to me so that I can share them with the class. Students moderating a discussion are not required to post questions about the articles they will discuss.

The best questions will draw parallels between the 2 papers and will be theoretical or integrative in nature. Questions may also point out a confound or problem with the methods of a study, a weakness or issue with the authors' interpretations of their results, results that contradict ideas or findings presented in other readings, and even new ideas for future research. **Questions are not to be about clarification (e.g., "I don't understand what the authors mean by the income-to-needs ratio. Can you please explain this?" , although clarification questions are welcome during class.**

Your questions will generally form the basis of our in-class discussions. Scoring of questions will be based on perceived effort.

## **3. Moderating discussion (30 points):**

All seminar participants will be expected to moderate a class discussion and to help choose the articles for that class meeting with my input and approval. Moderators should prepare by reading the assigned articles thoroughly and by reading all posted questions. It will also help if moderators read additional materials (e.g., especially supplemental materials, and possibly other papers cited in the article under discussion). Moderators are expected to keep the discussion going until the end of the class period or until I end the class. Assignment dates for student-led discussions will be made in the first or second week of class. Your specific requirements are to choose:

- 1 empirical paper that provides a health context (required)
- 1 empirical paper that provides a neuroscience context (required)
- 1 *suggested* review paper or chapter that provides an overall context for the topic under discussion. This might be a reading that is used for Part 1 of your discussion. *It is not required reading for other students.*

When moderating a discussion of a research article, it is your job to answer these questions for your classmates:

1. What research questions are being addressed, and what is the importance of this study?
2. Who are the subjects, and what is the design of the study?
3. What methods are used and what is being measured, manipulated, compared, or correlated?
4. What are the main findings?
5. What are the take home messages, and what can we conclude from the study?
6. What are the strengths of this study?

After addressing the questions above, it is then the students' job to offer a constructive critique of the work, focusing on the issues below. It is at this point where we should begin to consider and incorporate the questions posed on CourseWeb from fellow students:

1. Are the study's questions asked in the best possible way, or are there other ways in which the study's questions could have been better framed?

2. Is the study designed/executed in a way that enables the questions to be addressed? What are alternative ways this study could have been designed?
3. Were different constructs (e.g., socioeconomic status, ethnicity, etc.) measured in the best possible way? If not, then what could have been done differently?
4. Are the measures consistent or different with what other researchers in the field have done? And what are the implications of these similarities or differences in measurement approach? Here, it may be helpful to use the text for guidance about other research.
5. How well do the findings answer the research questions? To what extent do they raise new questions?

For Part 3 of the discussion each week, it is critical to address the following:

1. ***What could be done to integrate the studies from the two fields and push the area of research forward from a health neuroscience perspective?***

In your presentations, you may find it helpful to refer to specific figures and tables in the article to explain results. You may find it helpful to create a single handout or PowerPoint presentation for Parts 1-3. If you choose to make a handout, I can post these on CourseWeb or email them for the students to have before class.

Note that asking and addressing the questions above is meant to help develop your skills in critically and creatively evaluating the evidence and basis for researchers' claims and beliefs, not only in this field but in others as well. Developing these skills may also help you to better appreciate and think about the basis of your own views and beliefs about different topics. In short, these are important skills that will extend to situations beyond this classroom and your college experience. The main question for Part 3 is meant to help you think in an integrative way about research from different fields.

#### **4. Term paper (50 points):**

The paper will be in the form of a proposed study, and it should include an introduction (literature review ending with a clear statement of aims or objectives), a (proposed) method section, a (predicted) results section (organized by aims or objectives, and with simulated figures or tables), a general discussion, and a reference section. If appropriate, the results and discussion can be combined.

First draft (10 points): **The first draft of the paper will be due on March 6 (before class).** The draft should be approximately 4-6 pages or longer, double-spaced, and should use a 12-point font and 1" margins. This draft should carefully follow APA 6th edition format! This draft is intended to be a very early statement of the intentions for the final paper, but should not be a simple outline. More complete drafts will elicit higher quality comments. Be sure to proofread the draft prior to turning it in.

The first draft of your paper will be distributed to one of your classmates who will serve as a peer reviewer. Each reviewer will be asked to submit a critique of the proposal he/she receives. You will be asked to review the proposals written by one of your classmates. **Reviews are due to me by Thursday, March 20<sup>th</sup>.** I will send you the reviews of your proposal along with my own feedback, and you will have the opportunity to revise your proposal and address the issues raised. My comments will include guidance on the selected topic, other relevant readings, and feedback on writing. Although the first draft is worth only 10 points, it must be turned in by the deadline, otherwise a final paper will not be accepted.

Final draft (40 points): The final draft of the paper will be due on turnitin.com on April 17 by 8 PM. This paper should be no more than 15 pages in length, not including references, figures, or tables. This final paper should include an additional short cover note indicating how you have handled the issues

raised by me and the classmate reviewer (this does not count toward your 15 pages). Please follow the formatting guidelines listed above. Final drafts of papers will be returned to students with comments after grading.

*Please note that I do not offer exceptions to deadlines except in true emergencies, so please be sure to plan ahead.*

**Please do not use a paper that you wrote for another class in this one. If it becomes clear that you have done this, it will adversely affect your grade. In some cases, I may use online tools to evaluate potential cases of plagiarism.**

### **USING TURNITIN.COM**

We will be using turnitin.com for the Final Papers. You may need to create an account if you don't have one. Once you have an account, I will provide instructions later in the semester on how to sign up for this class.

You must use your Pitt email address to create your turnitin.com account.

Additional guidelines: Your work must be completed independently. Your assignments will be checked against other assignments from this class and other existing materials to guard against plagiarism, so be sure that your work is entirely original and your own. If you wish, you may check your "originality report" to see that your work is not seen to overlap with that of others (a low % overlap indicates unique work). Please refer to the cheating and plagiarism policy in the syllabus for more information.

**This is also very important: When you are directly referring to or talking about material from other sources, be sure to cite! Avoid using quotations or direct quotes. Use your own words.**

### **Grading Scale:**

Grade	Minimum	Maximum
A+	98	100
A	93	97
A-	90	92
B+	87	89
B	83	86
B-	80	82
C+	77	79
C	73	76
C-	70	73
D+	67	69
D	63	66
D-	60	62
F	0	59

### **Auditing this course:**

To maintain a consistent class environment, unofficial audits of this course will not be allowed, and individuals who wish to audit this course formally will be expected to attend at least  $\frac{3}{4}$  of the class meetings (at least 10), and to complete the above-stated participation, question posting, and moderation requirements. Auditors will not be expected to write papers, but may do so if they wish.

### **Disabilities:**

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify me and the [Disability Resources and Services](#) no later than the 2nd week of the

term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 140 William Pitt Union.

**Academic Integrity:**

Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy.

If you are unsure about what constitutes plagiarism, please see me. It is your responsibility to determine this *prior to* turning in drafts or papers. All violations of academic integrity in this course, including plagiarism, will minimally result in having violation of academic integrity paperwork filed with your academic dean.

**Statement on Classroom Recording:**

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

<b>Tentative class schedule</b>			
<b>Month</b>	<b>Day</b>	<b>Topic</b>	<b>Moderator(s)</b>
January	9	<ul style="list-style-type: none"> <li>• Introductions and course mechanics</li> <li>• Discussion of Erickson et al.</li> </ul>	Gianaros
	16	<ul style="list-style-type: none"> <li>• No formal class meeting</li> <li>• Individual meetings as necessary</li> <li>• Finalize schedule, topics, and readings</li> </ul>	
	23		TBD
	30		TBD
February	6		TBD
	13		TBD
	20		TBD
	27		TBD
March	6	<ul style="list-style-type: none"> <li>• <b>First Draft Papers Due to my email on March 6 by 12 PM (firm deadline)</b></li> </ul>	TBD
	13	<b>SPRING BREAK: NO MEETING</b>	N/A
	20	<ul style="list-style-type: none"> <li>• <b>Class cancelled</b></li> <li>• <b>Peer Reviews Due to my email on March 20 by 5 PM (firm deadline)</b></li> </ul>	
	27		TBD
April	3		TBD
	10		TBD
	17	<ul style="list-style-type: none"> <li>• <b>Final Papers Due to turnitin.com</b></li> </ul>	TBD