The Neuroscience Junior Tutorial in the Fall Semester

In the Fall semester of your junior year, you will participate in a small group tutorial to discuss research papers from the primary literature. The tutorial will provide an interactive format for you to learn to read and analyze current primary scientific literature—this is essential for you to develop new ideas about research and for formulating hypotheses. You will participate in discussions headed by a postdoctoral instructor once a week for 1 ½ hours.

The tutorial will meet for 8 weeks and at the end, you will be asked to write a short critique of a relevant research paper assigned by the instructor. You will attend and participate in a total of 8 discussion groups and will write one paper for the Fall tutorial.

Fall Tutorial Schedule, 2023

**Timing of the sessions** are below (all of which will be held in the PNI building). You'll be assigned one of these days/times. The times are set according to University regulations.

Monday 730-900pm  
Tuesday 300-430pm  
Wednesday 730-900pm  
Thursday 300-430pm

Sessions are in-person only; no zooming.

**Calendar of the sessions:**

**Week of September 11th through week of October 2nd:**
Meet weekly with tutorial leader

**Week of October 9th:**
No meetings because of Midterm week

**Week of October 16th**
No meetings because of Fall break

**Week of October 23rd through week of November 13th:**
Meet weekly with tutorial leader

**January 16th (5:00pm) [University deadline for submitting Junior Independent Work]:**
*Paper is due. Email it to your tutorial leader.*
Junior Tutorial Paper Guidelines and Structure

Each student will be given an article to analyze for the paper. While students may discuss their paper with peers and their instructor, each student should work individually when writing the paper. If students would like to get writing feedback from a peer or from the Writing Center, the person providing the feedback must not be in the student’s group.

Papers shall include the following sections (lengths are approximate; concise and well-written content is always preferable to longer, less clear text):

- Summary/Abstract (no more than 200 words, approximately ½ a page)
- Background (approximately 1 page)
- Experimental Approach and Findings (approximately 2 pages)
- Critical Review/Original Analysis (approximately 2 pages)
- References (approximately 1 page)

The format for the paper should be:

• 5 - 7 pages in length (but no longer than 7 pages, excluding abstract and references)
• Double-spaced (except for references)
• 1-inch margins all around
• Arial 11 or Times New Roman 12 font

When submitting, please include your name, the date and tutorial leader’s name.

Summary/Abstract (no more than 200 words)
Describe the major findings presented in the article along with a summary of your critical review of the findings. Abstracts should be concise.

Background (approximately 1 page)
Conduct a literature search and summarize the major and most relevant findings in the field. The background should be a succinct review of the topic in the paper being critiqued. You should rely on review articles to point the reader to a more extensive source of information, but don’t use a review article as a primary citation for a fact. You are strongly encouraged to research beyond the articles discussed or provided in class. Typically, 5 - 10 references should be used for the background section.

Experimental Approach and Findings (approximately 2 pages)
For the key experiments in the article, briefly summarize the following:
1. The question addressed
2. The experimental approach used
3. The results of the experiment

Critical Review/Original Analysis - (approximately 2 pages)
Discuss each of the following in your paper:
1. Evaluate the quality of the data (e.g., Do the experiments include the appropriate controls?)
2. Evaluate the conclusions made by the authors.
3. Evaluate the major implications of the findings in the article as they relate the field.
4. Propose future experiments not mentioned in the research article.

References - (not included in the page limitation and may be single-spaced)
1. You may use any appropriate scientific format for listing references.
2. Any fact that is discussed should be referenced.
3. The complete references should be detailed in a Reference Section.
4. List all of the articles cited. Only include a reference if it is specifically cited.
5. Do not cite the Internet (e.g., Wikipedia). Rely on published, peer-reviewed articles.

Grading of the Junior Tutorial Papers

Students will be evaluated based on class participation in each section and on the two papers. As a % of total grade, the breakdown is as follows:

<table>
<thead>
<tr>
<th>Class participation</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>60%</td>
</tr>
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There are multiple components to the Fall Junior tutorial papers. In general, the best papers are concise, but thorough, analyses of the experimental approaches in the primary literature, and in-depth critiques of data and conclusions. Remember that the goal of the assignment is to practice how to assess experimental methods and results and then to shape that assessment into an effective argument. This will help develop important skills for writing your research proposal and senior thesis.

Students will receive comments on their papers in addition to their grades. Students are encouraged to discuss their paper evaluations with their instructor, as well as with Professor Ghazanfar.