The Neuroscience Junior Tutorial in the Fall Semester

In the Fall semester of your junior year, you will participate in small group tutorials to discuss research papers from the primary literature. These tutorials 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 postdoctoral instructors once a week for 1.5 hours. The tutorial is broken into two 4-week sections, each with a distinct topic area. At the end of each section, 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 2 short papers for the fall tutorial.
Fall Tutorials Schedule, 2018

Part I

Week of September 10th:
Sign up for tutorial groups.

Week of September 17th through week of October 8th:
Session #1 of Fall Junior Tutorials begins
Meet 4 times with instructor.

Week of October 15th:
Research skills: databases, referencing, pdf management. Meghan Testerman, our science librarian, will lead sessions this week.

November 5th (5:00pm):
First paper is due. Email it to your tutorial group leader.

Part II

Week of November 5th:
Society for Neuroscience conference (Nov 3 – 7).
No meeting in groups

Week of November 12th:
Session #2 of Fall Junior Tutorials begins, with a new Instructor
Meet 1 time with tutorial group.

Week of November 19th:
No meeting - Thanksgiving Break

Week of November 26th through week of December 10th
Meet 3 times with tutorial group.

January 8th (5:00pm) [University deadline for submitting Junior Independent Work]:
Second paper is due. Email it to your tutorial group leader
Session Times, Tutorial Leaders and Rooms

Part I (Week of September 17 through Week of October 8)

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Leader</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>730-900pm</td>
<td>Marlies Oostland</td>
<td>PNI 130</td>
</tr>
<tr>
<td>Tuesday(1)</td>
<td>300-430pm</td>
<td>Silvy Collin</td>
<td>PNI A59</td>
</tr>
<tr>
<td>Tuesday(2)</td>
<td>300-430pm</td>
<td>Sama Ahmed</td>
<td>PNI 230</td>
</tr>
<tr>
<td>Wednesday(1)</td>
<td>730-900pm</td>
<td>Yisi Zhang</td>
<td>PNI 130</td>
</tr>
<tr>
<td>Wednesday(2)</td>
<td>730-900pm</td>
<td>Ahmed El Hady</td>
<td>PNI A59</td>
</tr>
<tr>
<td>Thursday</td>
<td>300-430pm</td>
<td>Dan Bennett</td>
<td>PNI 259</td>
</tr>
</tbody>
</table>

Part II (Week of November 12 through Week of December 10)

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Leader</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>730-900pm</td>
<td>Sama Ahmed</td>
<td>PNI 130</td>
</tr>
<tr>
<td>Tuesday(1)</td>
<td>300-430pm</td>
<td>Dan Bennett</td>
<td>PNI A59</td>
</tr>
<tr>
<td>Tuesday(2)</td>
<td>300-430pm</td>
<td>Silvy Collin</td>
<td>PNI 230</td>
</tr>
<tr>
<td>Wednesday(1)</td>
<td>730-900pm</td>
<td>Ahmed El Hady</td>
<td>PNI 130</td>
</tr>
<tr>
<td>Wednesday(2)</td>
<td>730-900pm</td>
<td>Yisi Zhang</td>
<td>PNI A59</td>
</tr>
<tr>
<td>Thursday</td>
<td>300-430pm</td>
<td>Marlies Oostland</td>
<td>PNI 259</td>
</tr>
</tbody>
</table>
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.

Students may not refer to previous student papers on the topic.

Each of the two papers shall include the following sections (lengths are approximate; concise and well-articulated 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 ½ 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)
- a minimum of 1 inch margins all around
- Arial 11 or Times New Roman 12 font only

Cover Page

Please include your name, the date, instructor’s name and tutorial group number. A signed honor pledge should be on the cover page as well.

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? Could an experiment have been conducted differently to answer the question at hand?)
2. Evaluate the conclusions made by the authors. For example, are there alternative explanations or conclusions for the data?
3. Evaluate the major implications of the findings in the article as they relate the field of study.
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 found at the end of the document.
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). Many items found on the internet have not undergone “peer review” scrutiny and may be unreliable. 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>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class participation Part I</td>
<td>20%</td>
</tr>
<tr>
<td>Paper for Part I</td>
<td>30%</td>
</tr>
<tr>
<td>Class participation Part II</td>
<td>20%</td>
</tr>
<tr>
<td>Paper for Part II</td>
<td>30%</td>
</tr>
</tbody>
</table>

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.