

Hypothesis

Name: _____

NeuroCore Project Presentations

Date: _____

	Yes	No	Checkmark
Background	<p>Give sufficient background information leading up to the hypothesis for others not in your field to understand.</p> <p>Suggested format with slide(s) each on:</p> <ol style="list-style-type: none">1. Introduction to the disease/system related to your project (ex. What is epilepsy? What is the protein C9orf72? What is plasticity? Etc.).2. Significance statement on why it's important to study (ex. Why is it important to study epilepsy, c9orf72, plasticity, attention, perception, etc.).3. Current knowledge and gap in knowledge in what you want to study (ex. In relation to the problem you want to solve, what is the precipice of what we know, and what don't we know).	<p>Does not give enough detail to understand the hypothesis. Those in the class not in your field (including prof and TA) should be able to follow along.</p>	
Hypothesis	<p>Clearly state the hypothesis.</p> <p>Example: a single slide with the hypothesis explicitly written out</p>	<p>Does not clearly state hypothesis.</p>	
General Presentation Organization and Overall Appearance	<p>Project is organized, neat, and easily understood.</p> <p>Displays mastery of material expected for a first year PhD student in NGG.</p>	<p>Project is generally not well organized, neat, and/or easily understood.</p>	

Relevant sites for your project:

1. Penn Box
 - a. <https://upenn.app.box.com/>
 - b. We created a NeuroCore class folder and shared individual folders of your last name earlier in the semester. Let us know if you cannot access it.
2. GitHub
 - a. Class GitHub: <https://github.com/PennNGG/Statistics>
 - b. GitHub tutorials from a command line:
 - i. Windows: https://www.youtube.com/watch?v=SWYqp7iY_Tc
 - ii. Mac: <https://www.youtube.com/watch?v=0fKg7e37bQE>
3. LabArchives
 - a. <https://mynotebook.labarchives.com>
 - b. We created a NeuroCore class notebook and shared individual folders of your last name earlier in the semester. Let us know if you cannot access it.

DATA VISUALIZATION

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Note: The focus is on data visualization. Please be brief on the background and hypothesis. Begin thinking about the statistical analysis you want to perform for the next presentation

	Yes	No	Checkmark
Background	<p>Brief background highlighting the main points you talked about in the last presentation – serves as a reminder for everyone.</p> <p>Can be one slide with rapid-fire points: Example – “As a reminder from the last presentation, I study medically refractory epilepsy patients who underwent surgical treatment; what I study is significant because many patients continue having seizures despite treatment; currently, x and y are how we localize seizure onset which is what I talked about last time, however, z is a new method I want to study and shows promise for aiding surgeons to find and target seizure onset.”</p>	Does not give a reminder background slide	
Hypothesis	Reminder of hypothesis	Does not clearly state the hypothesis.	
Experimental Design	Explain the experimental design you are doing to test your hypothesis. State what you are measuring.	Does not state the experimental design or state what is being measured.	
Data Visualization	<p>A plot (or multiple plots) showing the data you have so far. Note that it does not need to be an N of publication quality at all! You may use whatever software/program to visualize your data, but whatever you use should go on GitHub (even excel spreadsheets with your graphs).</p> <p>Answer why have you chosen your particular way of displaying your data. To answer this, please incorporate (1) why you think it adequately shows the distribution of what you measured, (2) how it reflects your experimental design, and (3) how it illustrates the signal and noise that you found.</p> <p>From the syllabus: Ultimately your ability to convince other people that you have a robust finding will not depend on the results of a statistical test but rather on your ability to show the finding in</p>	Plots do not (1) show transparency in what you measured, (2) reflect the experimental design, and/or (3) illustrate both the signal and noise that you found.	

	a clear and compelling way; that is, in a way that is (1) transparent in terms of what you measured, (2) clearly reflects the experimental design, (3) and illustrates both the signal and noise that you found.		
GitHub	<p>Upload any relevant code/software output used to analyze your data.</p> <p>A perfectly organized repository is not expected yet, however, keep in mind other researchers may ask you for any code or analysis tools you used in your publications. It will save you a lot of time on the backend to have enough organization and comments in your GitHub for others to reproduce your work. At the very least, it adds transparency to your work. Please try to emulate this as much as possible for this project!</p>	Nothing is uploaded to your GitHub repository used for the class.	
Penn Box	<p>Upload any relevant data to your Penn Box account.</p> <p>A suggested way to organize your data: (1) have a separate folder dedicated solely for raw data – also good for long term storage (2) have a separate folder for your processed data. You may also upload data to your GitHub account for easy access for your code to analyze your data, but please upload at least your raw data to Penn Box. GitHub does have upload size limits, Box does not.</p>	Nothing is uploaded to your Penn Box folder created for this class.	
LabArchives	<p>You have been using Lab Archives for this project. At the minimum, we are looking for a narrative of what steps were taken to visualize the data (and implement the statistical tests in the third presentation). You may want to directly link in your notebook what code on GitHub and what data on Box were used.</p> <p>Note: We know it may be the first time many of you have been using lab archives. This is more of a check to see if you can use it and familiarize yourself with this type of record keeping. Outside the course, you may use whatever you need.</p>	Nothing is posted to your class Lab Archives account.	
General Presentation Organization and Overall Appearance	<p>Project is very organized, neat, and easily understood.</p> <p>Displays mastery of material expected for a first year PhD student in NGG.</p>	Project is generally not well organized, neat, and/or easily understood.	

STATISTICS

Name: _____

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Note: The focus is on your statistical analysis. Please be brief on the background and hypothesis.

	Yes	No	Checkmark
Background	Brief background highlighting the main points – serves as a reminder for everyone. Can be one slide.		
Hypothesis	Reminder of hypothesis	Does not clearly state hypothesis	
Experimental Design and Data Visualization	Re-show plots from last presentation and enough of the experimental design to understand the plots – serves as a reminder. You may update your plots if you have collected more data from last time and/or found a better way to display your data	Does not re-show plots	
Statistics	State the statistical test you want to perform and give your reasoning. If possible, perform a power analysis to find the N you need at 80% power given $\alpha = 0.05$ and an effect size from the preliminary data you have so far.	Does not state the statistical test you want to perform and give your reasoning	
GitHub + Penn Box	Upload any relevant code/software used to analyze your data. Upload any relevant data to your Penn Box account.	Nothing is uploaded to your GitHub repository used for the class.	
LabArchives	You have been using Lab Archives for this project. At the minimum, we are looking for a narrative of what steps were taken to visualize the data and implement the statistical test(s).	Nothing is posted to your class Lab Archives account	
General Presentation Organization and Overall Appearance	Project is very organized, neat, and easily understood. Displays mastery of material expected for a first year PhD student in NGG	Project is generally not well organized, neat, and/or easily understood.	