Tentative Goals for Research in the Egner Lab - Ziwei Zhang
(*tentative* - if you end up being dissatisfied or bored with cognitive control research or your time in lab, feel free to use this as a guide for other positions as well!)

- If your goal is to go to graduate school, there are a few overall goals to keep in mind-
1. doing a senior thesis to show that you've thought about the material on your own and potentially inspire a line of research that you find interesting and want to pursue.
2. developing programming/coding/statistical skills: PIs like Tobias like the idea of students who can "get off the ground quickly" when they join new research programs, and statistical and coding knowledge are highly valued.
3. building up awards/presentations/data points-- the more you have, the "better" you look on paper. One award that fits neatly with #1 is a summer research fellowship, which Duke has available.

Learning Goals:

Sophomore, Fall 2017, Research Practicum:
- Gain experience with running participants on cognitive control tasks (e.g., SCP_R, SCP_CC), providing you with an idea of what these tasks are like
- Learn how to read science papers properly, particularly those related to the stimulus-control learning literature; consider writing up the findings into notes of your own or as a synopsis to synthesize the literature
- Reacquaint yourself with Python and PsychoPy (i.e., start to learn some general coding principles through the Python Data Science Textbook)
- Start to learn some general statistical principles through additional targeted readings (i.e., the Statistical Sleuth Textbook).

Sophomore, Spring 2018, Independent Study:
- Take charge of a control-learning project; Tobias and I are still talking about the exact project you'd work on and run participants for, but the idea would be that you could take charge of this one (second author, if paper works out)
- Because you'd be taking charge of a project, you should perform a literature review on the topic of that project. We'll go over how to do literature reviews more precisely this semester (we went over this some last semester, but less detailed).
- It may be possible to have you present the results of our work from Fall 2017 or this spring semester at a conference; one candidate would be the "North Carolina Cognition" conference, and we could get you to apply for a travel grant (http://undergraduateresearch.duke.edu/urs-programs/urs-travel-grants) that would pay for registration and the likes (it'd be cheap, because it's in NC). The only snag is that it depends on *when* the conference is held, because I would like to go with you, and there's a chance it might coincide with another conference. Presentations also look great when applying to grad school, and it'll give you experience with conferences more broadly.
- Be involved in a manuscript revision; if SCP_R and SCP_CC work out, the plan is to submit these (and maybe another experiment, depending on how reviewers evaluate the initial manuscript that I showed you) for publication. I asked Tobias; he said he'd be fine

with you on the paper. If he changes his mind, regardless, I would like to show you what manuscript revisions and preparations look like.

- Take statistics as a course - with the background you built up in fall 2017, hopefully this would be a little easier, but hopefully it will give you a good background of the material
- With the project that you're taking on, you should be involved in the data analysis (i.e., I will provide you with scripts to analyze the data--you should know how to apply these, and we might work on your coding skills, where I'd ask you to recreate the scripts on your own).
- Hopefully, you can attend lab meeting, and that way you'd also present one time in the semester during lab meeting, so that you'd get experience presenting a journal article or the results of our project

Summer?: This depends on you and/or Tobias. If you don't want to do summer research, no worries. Also, there is no SONA pool in the summer, so Tobias would have to be willing to pay to fund you and/or studies.

There are opportunities for funding, though: You might qualify for the Vertical Integration Program in the Psychology department (https://psychandneuro.duke.edu/sites/psychandneuro.duke.edu/files/site-images/VIP%20info%20and%20application%20form%202017%20-%20editable.pdf). Also the dean's summer research fellowship? (http://undergraduateresearch.duke.edu/urs-programs/deans-summer-research-fellowships). You could also look at the opportunities beyond Duke (http://undergraduateresearch.duke.edu/opportunities); these would probably look good on a graduate application as well.

Junior, Fall 2018:
- Program your first experiment in PsychoPy or JavaScript (this may take an entire semester). The actual experiment may be one that you want to pursue, inspired by your spring 2018 project or other interests.
- Continue running and participating in other experiments
- Same with lab meeting; potentially some of the bullet points from Spring may apply here
- Think about the Summer Neuroscience Program application (do you want to get a head start on thesis research? https://dibs.duke.edu/undergraduate/program/undergraduate-research-opportunities/snp). I think this is due sometime in spring, but it'd be good think about early on.

Junior, Spring 2019:
- Propose own experiment or pilots; be thinking of what you would like to do for your senior thesis project
- Participate in other expts in the lab
- Lab meeting, etc.

Summer?: Summer Neuroscience Program to jumpstart work on your thesis?

Senior, Fall 2019:

- Start writing your senior thesis. We'll set deadlines for when you have your introduction and methods done (I believe those are due in the fall, whereas the full thing might be due later).
- We may have to run the subjects for your thesis this fall, if we haven't already collected the data for it by then.
- More projects, etc. Bullet points from above still apply.

Senior, Spring 2020:
- Finish up your senior thesis!
- Graduate!
- Job! School! Career of your choice!