

# 2019 Brainhack Proposal

## What is Brainhack?

Brainhack is an event designed to bring together enthusiasts with diverse backgrounds and interest in the brain to learn from each other and work on collaborative projects in the open.

## 2019 Brainhack Goals

- Teach relevant skills to be a productive, reproducible, and open scientist
- Increase knowledge sharing between participants from different backgrounds
- Grow the brainhack community

## The 2018 Brainhack

With the help of the INI, we hosted our first three-day brainhack in May with a total of 7 participants. We worked on several projects: setting up analysis pipelines for behavioral data, making existing open MRI analysis tools more reproducible, and creating a new open source fMRI analysis tool. Moreover, we held mini workshops introducing participants to tools that encourage open science practices such as: working with a terminal, understanding version control, proper data organization, and using containers to make reproducible software. While much was accomplished during the 2018 brainhack, we believe there are several key changes that will drive the success of this year's brainhack.

## Lessons from the 2018 Brainhack

This year, we hope to improve attendance and impact from the lessons we learned from last year.

- **Move the Brainhack to July**
  - A number of graduate students that wanted to participate were still taking classes and had finals to complete. Adding an event that required their full attention for three days was too much.
- **Shorten the Brainhack to 2 days**
  - Two days of focused work is more than enough to meet new collaborators and get a solid chunk of work completed. With three days, participants became fatigued.
- **Have learning sessions leading up to Brainhack**
  - Learning the tools for technical work takes time. Participants cannot realistically learn a tool in a couple hours and apply it reliably. Thus every week for (at least) 4 weeks leading up to Brainhack, we will be leveraging hacky-hour (linked) to aide in education. Specifically, we will assign course material from the carpentries (linked) at the start of the week, and during hacky-hour at the end of the week, participants will bring questions about the material for help and discussion.
- **Include more faculty participation**
  - We will invite faculty from different departments to give a small ignite speech concerning a (brain related) challenge they are facing in their work. Participants will then be able to work on these challenges if they did not come with a specific project in mind.
- **Advertise Strategically**
  - We now know about several departments/groups with a vested interest in these activities. For example, the computational psychiatry group will be used as a platform to advertise the event in addition to the INI, the department of psychology, the neuroscience program, the IIBI, etc.
- **Create a Committee**
  - Starting with last year's participants, I will be asking others to help me organize the event with the bonus of having a guaranteed spot in Brainhack.
- **Reduce Recruitment Size**
  - We will reduce the estimates of potential attendees from 20 to 15 this year.

## Additional Resources

The work towards the event is being done in the open and can be seen on the 2019-brainhack (linked) repository.

If you would like to read more about brainhacks in general, I have linked a short application I wrote last year (linked).