**Techniques** you learned this week (make sure you understand them, or ask questions if you don’t):

* Visualizing many *frames* of a video, here widefield data
* Understanding how to convert frames into seconds
* Plotting time courses of specific pixels in the widefield data
* Calculating the correlation between two different time courses
* Loading the Allen atlas, and figuring out which region is located where in the brain
* Plotting the mean time course of a specific region
* Version control – using github
* Statistical significance

**Dataset locations**

Spontaneous dataset (baseline): <https://www.dropbox.com/sh/w5zr7txi3w7oe2r/AADOQSD63E-tVjYqZNl3cPP-a?dl=0>

Stimulus evoked dataset (forelimb): <https://www.dropbox.com/sh/2laqh1klovq6dtd/AADfXw9OKw3YN4ts5h5_QZQna?dl=0>

Note: Download these directly to the MATLAB folder. To open a .zip file, just double click on it. Each of these has some data in the file called ‘widefield\_data.mat’ and the brain atlas in the file called ‘warped\_atlas.mat’. You may need to change the paths at the beginning of the scripts to point to these files.

**Homework** for Tuesday

1. Plot the average timecourses of the widefield data from the spontaneous dataset for one region (ex. MOp1\_L). Now plot it for another region (ex. SSp\_ul1\_R). Go through the code section by section, and look at the comments (in green), to figure out what is happening.
2. Plot the average timecourses of the widefield data from the spontaneous dataset for two different regions (ex. MOp1\_L and SSp\_ul1\_R) on the *same* plot, using two different colors (hint: start with plotting a single region using plotaveragetimecourse.m; then look at plottimecourses.m to try and modify the code to plot two timecourses in the same plot).
3. Calculate the correlation between the *average* time courses of the two regions in the spontaneous dataset (hint: look at the end of plottimecourses.m to see how to calculate correlation).
4. Redo both 1. and 2. for two regions in the stimulus evoked dataset; is the correlation stronger for one dataset?