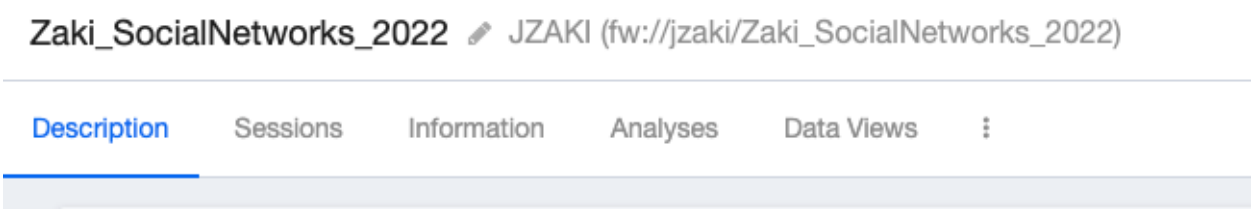
Flywheel to Oak

About

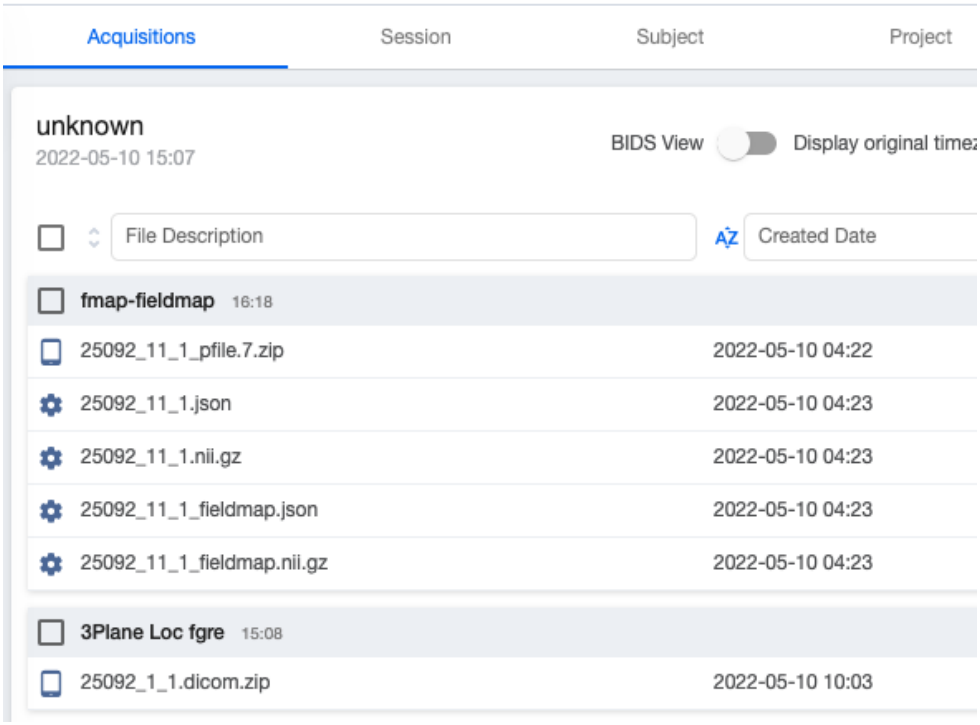
After we end a subject's session at the CNI, their data is uploaded to a data warehouse called Flywheel. We'll perform a few operations on the data in the Flywheel ecosystem before exporting to our storage space on Oak. See below for more details.

Flywheel

- In a Google Chrome browser, log in to Flywheel at cni.flyweel.io
- You should see a list of your projects on the home screen, hit Zaki_SocialNetworks_2022



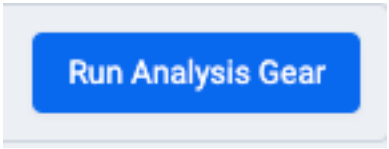
- Each individual subject is listed under the Sessions tab
- The default view is “non-BIDS” … that’s presented in the order that we scanned for each participant (localizers, functional runs, T1’s, etc.)



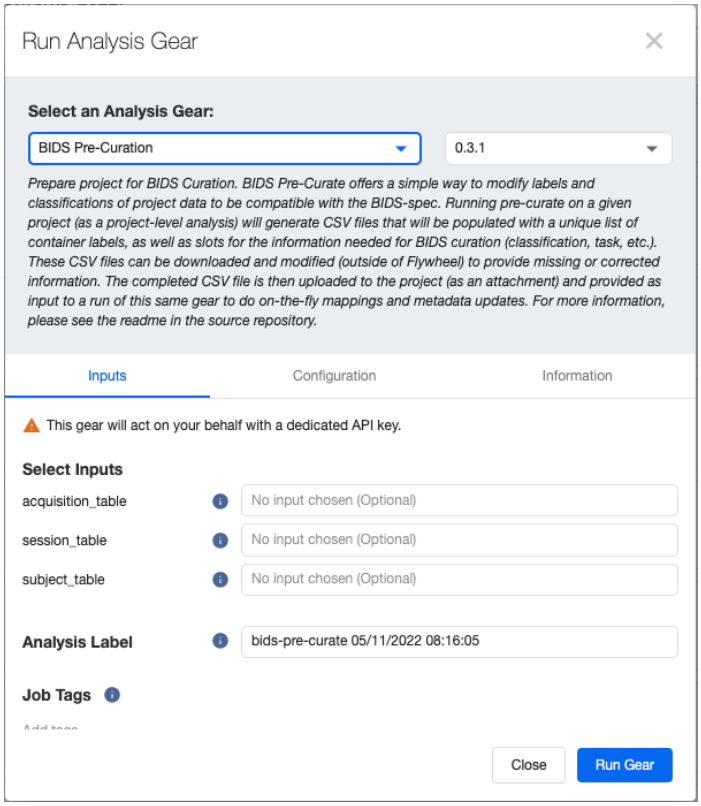
- Our goal here is to programmatically update each subject's data structure to be in BIDS format
    - See https://bids.neuroimaging.io/

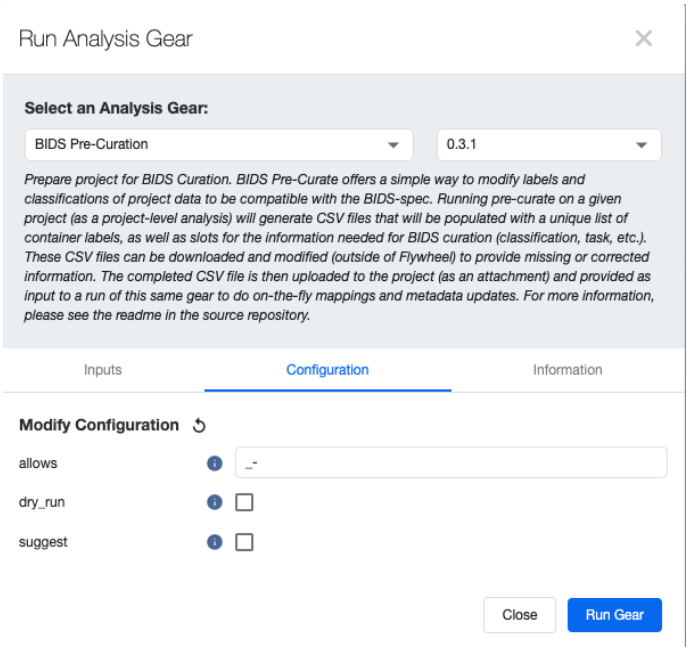
Perform the following steps:

- Tab over to Analyses
- Click "Run Analysis Gear"



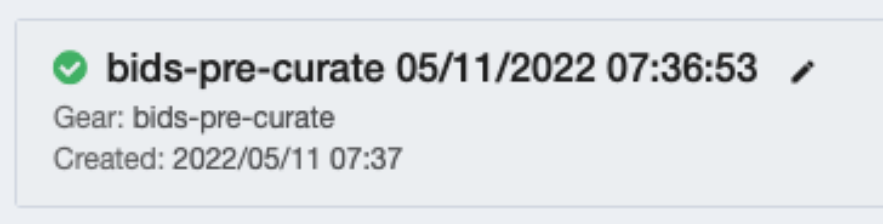
- Select "BIDS Pre-Curation" with **no inputs**
    - I recommend you tab over to Configuration and un-select "Suggest"

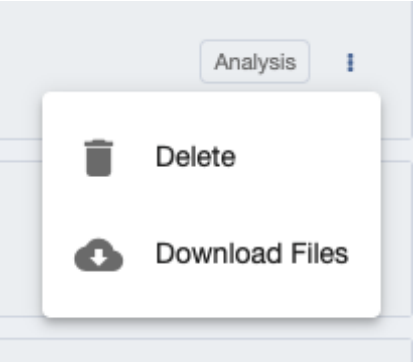




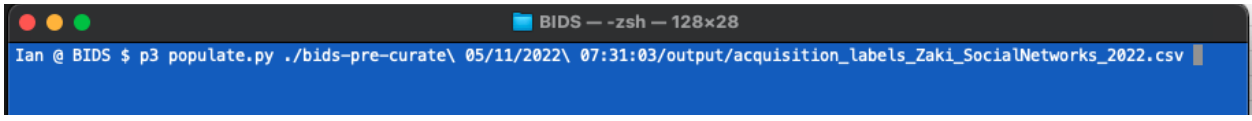
- Click **Run Gear**

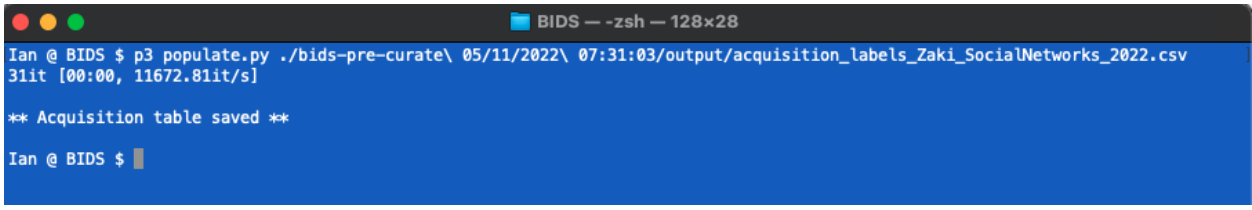
- Assuming you have no issues, click on the three dots to the far-right of the screen and download the files locally





- Use the **populate.py** script in this repo to fill in the acquisition labels
    - NOTE: This is hard coded for the present study, and should be updated before being used on other projects

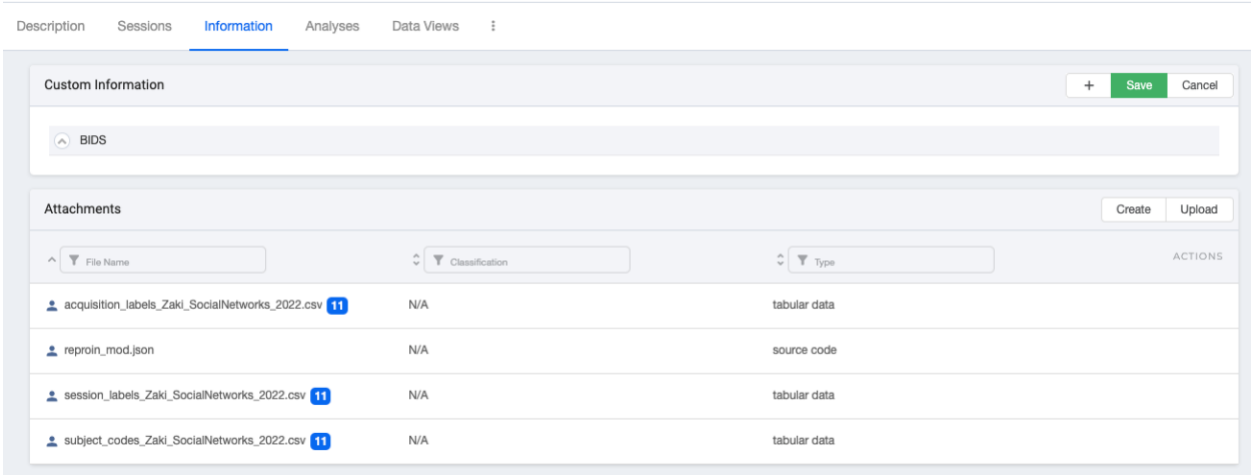




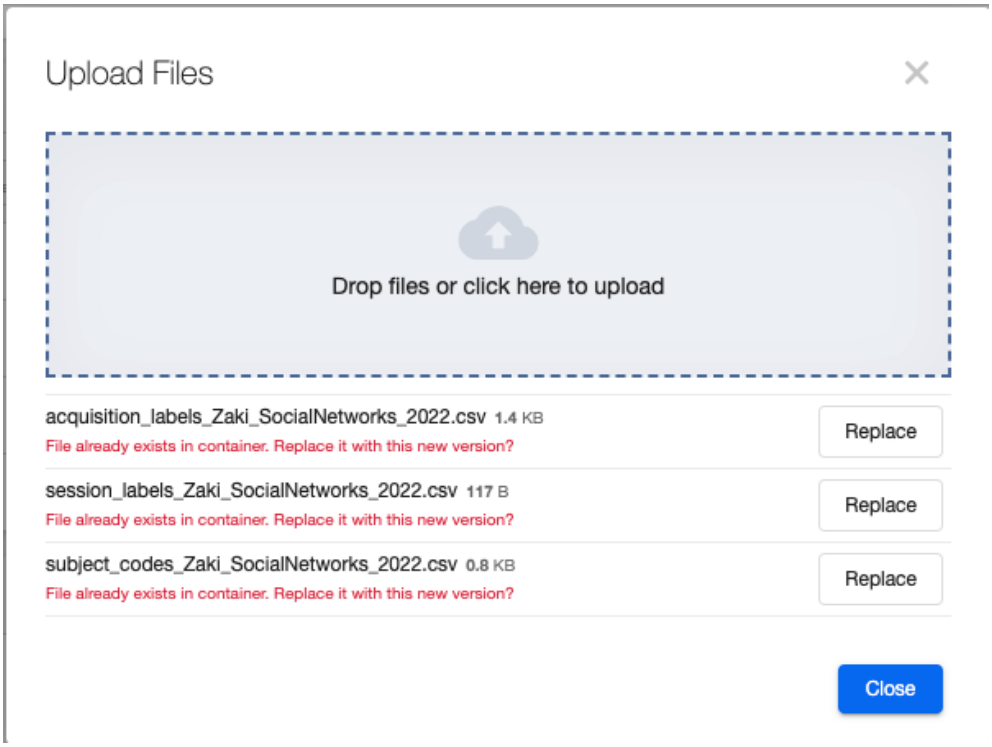
- You may need to fill in any missing entries, you can do this manually

existing_acquisition_label	new_acquisition_label
fmap-fieldmap	fmap-fieldmap
3PlaneLocfgre	
anat-T1w_acq-9mmBRAVO	anat-T1w_acq-9mmBRAVO
GEHOSFOV24	
GEHOSFOV24_1	
func-bold_task-socialeval_run-1	func-bold_task-socialeval_run-1
func-bold_task-socialeval_run-2	func-bold_task-socialeval_run-2
func-bold_task-stressbuffer_run-1	func-bold_task-stressbuffer_run-1
func-bold_task-stressbuffer_run-2	func-bold_task-stressbuffer_run-2
func-bold_task-faces_run-1	func-bold_task-faces_run-1
func-bold_task-rest_run-1	func-bold_task-rest_run-1
fmap-fieldmap_ignore-BIDS	
3Plane Loc fgre	
GE HOS FOV24	
GE HOS FOV24_1	
func-bold_task-rest_run-2	func-bold_task-rest_run-2
GE HOS FOV24_2	
func-bold_task-socialeval_run-1_ignore-BIDS	
func-bold_task-stressbuffer_run-1_ignore-BIDS	
func-bold_task-stressbuffer_run-2_ignore-BIDS	
spiral fieldmap	fmap-fieldmap
fMRI social eval run1 HB4	func-bold_task-socialeval_run-1
fMRI social eval run2 HB4	func-bold_task-socialeval_run-2
T1w .9mm BRAVO	anat-T1w_acq-9mmBRAVO
fMRI stress buff run1 HB4	func-bold_task-stressbuffer_run-1
fMRI stress buff run2 HB4	func-bold_task-stressbuffer_run-2
fMRI faces run1 HB4	func-bold_task-faces_run-1
fMRI faces run1 HB4_1	
fMRI rest run1 HB4	func-bold_task-rest_run-1
fMRI faces run1 HB4_2	
fMRI rest run2 HB4	func-bold_task-rest_run-2

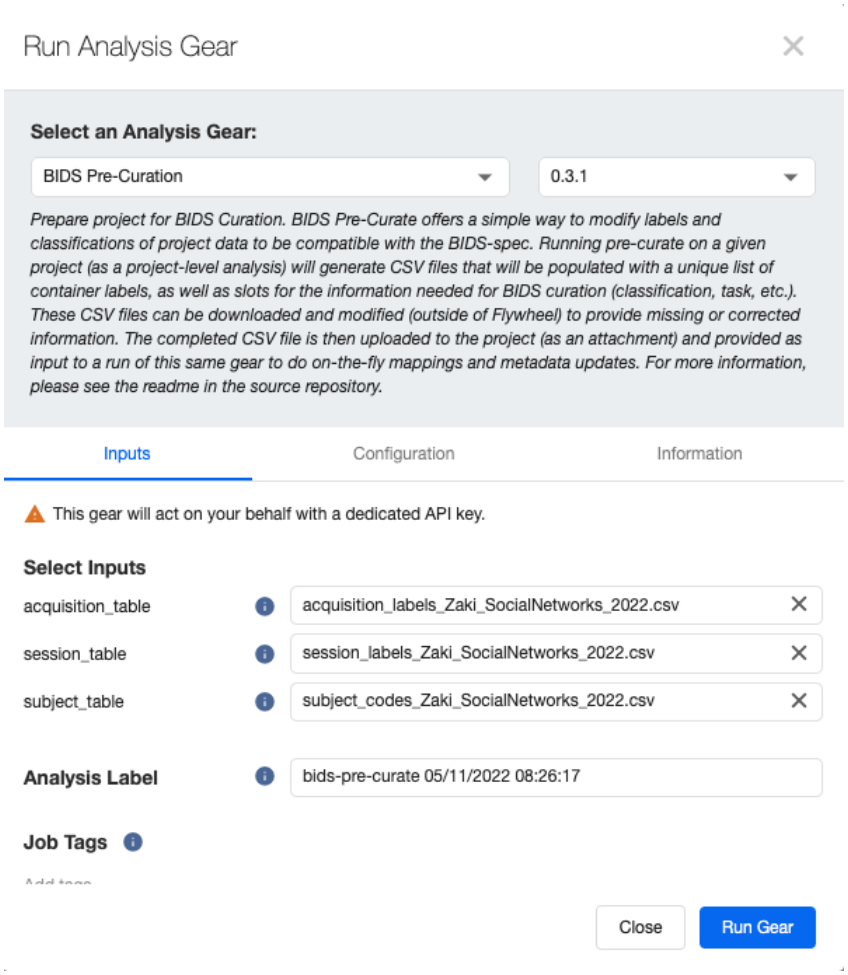
- Once the acquisition table is updated, re-upload these to Flywheel under the Information tab



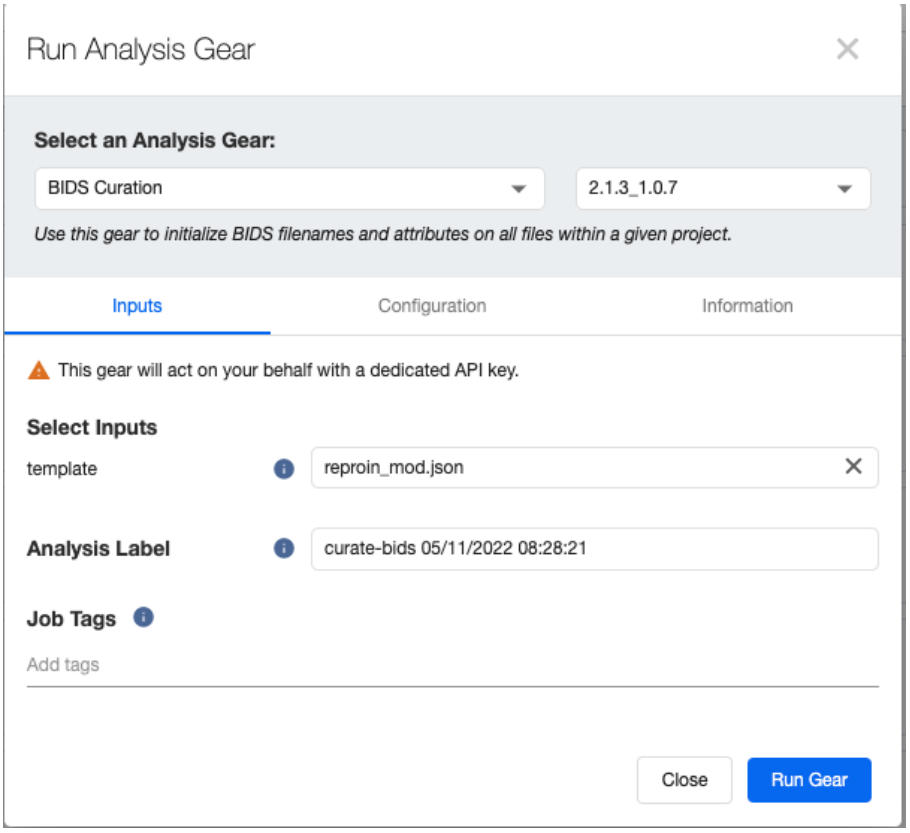
- It will prompt you to replace any existing files – that's cool, go ahead and replace them

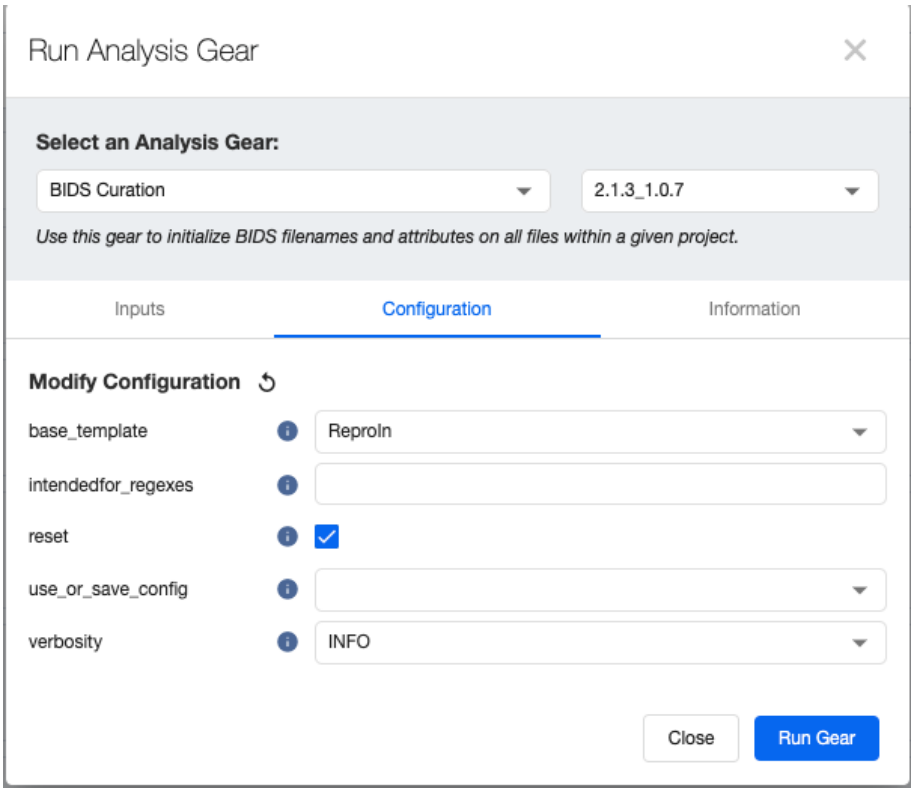


- Re-run the BIDS Pre-Curation with these tables as input (again, I would un-select the "Suggest" field but it's not clear if this has any effect at this stage)

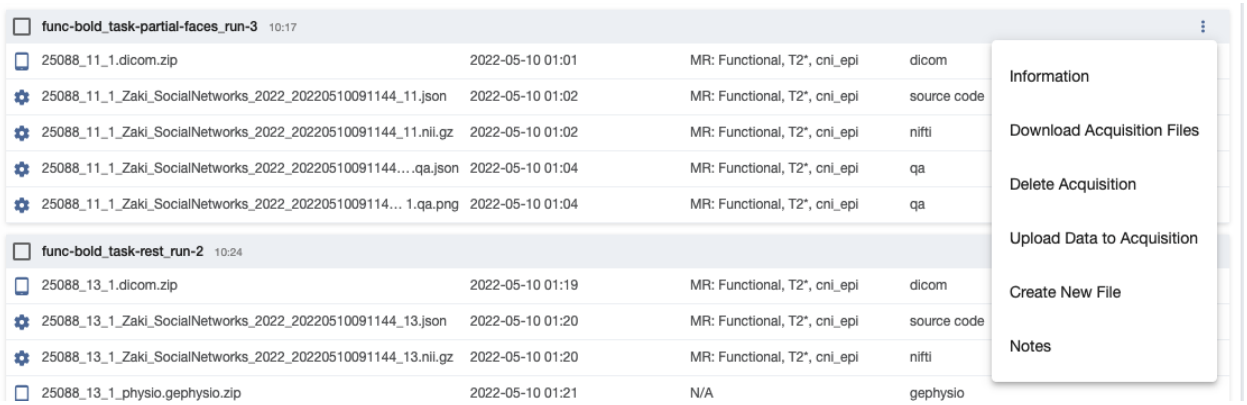


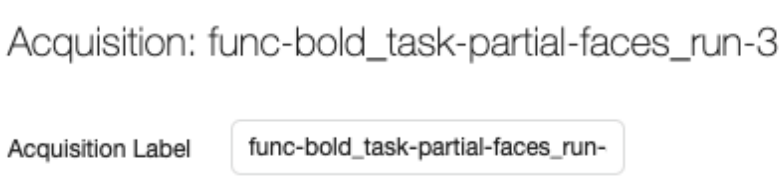
- Assuming this runs successfully, run the BIDS Curation gear with the reproin_mod.json file included as input
    - Tab over and check the “Reset” box as well


Run Analysis Gear
Select an Analysis Gear:
BIDS Curation
2.1.3_1.0.7
Use this gear to initialize BIDS filenames and attributes on all files within a given project.
Inputs
Configuration
Information
This gear will act on your behalf with a dedicated API key.
Select Inputs
template
reproin_mod.json
Analysis Label
curate-bids 05/11/2022 08:28:21
Job Tags
Add tags
Close
Run Gear


Run Analysis Gear
Select an Analysis Gear:
BIDS Curation
2.1.3_1.0.7
Use this gear to initialize BIDS filenames and attributes on all files within a given project.
Inputs
Configuration
Information
Modify Configuration
base_template
ReproIn
intendedfor_regexes
reset
use_or_save_config
verbosity
INFO
Close
Run Gear

- You will get errors if you have duplicate runs here, you can manually rename these prior to BIDS Curation by clicking “Information” under a subject’s duplicated container





Oak

- First, check with Ian to make sure you have access to Sherlock and Oak … otherwise none of this information will be helpful!
- At the command line, log in to Sherlock

ssh [[SUNet@login.sherlock.stanford.edu]]

- Navigate to our BIDS project on Oak

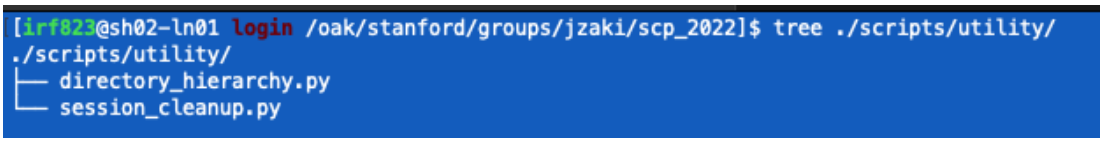
cd /oak/stanford/groups/jzaki/scp_2022

- If you don't have it installed already, install the Flywheel command line interface (CLI) … you can find it at the link below
    - https://docs.flywheel.io/hc/en-us/articles/360008162214-Installing-the-Flywheel-Command-Line-Interface-CLI-
- You can export BIDS data at the project- or subject-level with the following command

  fw export bids -p "Zaki_SocialNetworks_2022" ./bids/ [[--subject 12345]]

- Once a subject's data is exported, you should run the scripts that I've included to do the following:
    - Remove the session subdirectories for every subject

- Update the fieldmap “IntendedFor” fields … this will throw an error during BIDS Validation if it’s not done correctly



- I’ll eventually wrap these in a shell script