READ ME file

**Overview**

This repository contains the data, analysis code, and figures for our project. The data is bulk RNA seq data published from Acosta-Rodriguez et al., (doi: 10.1126/science.abk0297) which has already been normalized to reads per kilobase per million (RPKM). The analysis includes Python (and eventually R) scripts for analyzing the published data.

**Data**

The data provided is from doi: 10.1126/science.abk0297. In this paper, authors sought to break down the independent effects of calorie restriction, time restricted feeding, and circadian feeding. They used a mouse model with automatic feeding schedules, and broke the mice up into 6 groups:

1. Ad libitum: mice had unlimited access to food
2. Calorie restriction, spread: mice were provided 30% fewer calories than the ad libitum group, but were able to eat across a 24 hour period.
3. Calorie restriction, 12 hours, daytime: same calorie restriction, but mice only had access to food for 12 hours during the day
4. Calorie restriction, 2 hours, daytime: same calorie restriction, but mice only had access to food for 2 hours during the day
5. Calorie restriction, 12 hours, nighttime: same calorie restriction, but mice only had access to food for 12 hours during the night
6. Calorie restriction, 2 hours, nighttime: same calorie restriction, but mice only had access to food for 12 hours during the night

The authors harvested liver tissue from 2 mice in each group at young and old ages, and when livers were harvested, they were harvested from mice every 4 hours over a 48 hour period. Bulk RNA seq was performed to assess differences in gene expression across ages, time, and feeding groups.

**Folder Structure**