**Phenomaster Protocol**

**Razani Lab**

**6-14-16**

-Contact Sangeeta Adak (sadak@dom.wustl.edu) to reserve the phenomaster well in advance of when you will need it (often it is reserved over a month in advance).

Place a monolayer of bedding at the bottom of each cage (too much may disturb cage activity sensors). Record weight of each mouse before putting it in, in order 1->8, let them acclimate a bit while you finish setup and put tops down.

Prepare for each cage water at least half full and 5 pellets of easily accessibly/chewable food (pellet orientation matters). This is plenty for 24-48h but may need to be refilled if going 72 or more. Hang these in appropriate slots (water is rear right, food is rear left). Be sure that these are not twisted towards the edge of the cage which would make it more difficult for the mouse to eat or drink.

Lock down cages and add top tube to seal.

**On the computer:**

**­**-Please don’t close the computer cabinet door – it jams

-Empty the dehumidifier water trap daily

-Settings for experiment should read flow 0.4, ambient 02 20.84 CO2 0.05 or close.

-The minimum analysis interval for all cages (time it takes to accurately read 8 in succession) is 13 minutes, setting the interval to 15 minutes makes analysis easier later.

Enter weights and ID’s for each mouse in appropriate cages, hit
“start experiment”. Generally please do not alter calibration or settings unless there is a specific concern.

After: “Stop experiment” -> weigh mice and return to cages, return cages to CSRB basement room. Clean Phenomaster cages ( empty bedding and use a bit of clidox to wipe, leave it tidy.

**Notes and Data Analysis:**

-Start cohorts of mice at the same time of day, near the start of the night cycle (6pm) works well because increased activity as the result of cage acclimation will have relatively less impact during the active night cycle than it will during the relatively sedentary day cycle.

-When analyzing, be sure to sync the exact start time of mouse cohorts. Generally bin each mouse’s data into hourly intervals, then take a group average and standard deviations across those bins.

-Be wary of reintroducing male mice into the same cage after the phenomaster, they will be prone to fighting.

-When analyzing, closely examine and consider the impact of the behavior of individual mice (physical activity, food intake) and how this may impact other outcome measures (VO2, VCO2, RER).