Analytical balances

(I) What we have:

We currently have 8 balances:

- Two analytical balances in the gloveboxes
- Two balances RMD409.
    - One bench-top balance (max 1510 g).
    - One analytical balance (max 110 g).
- Two analytical balances in RMD410 (max 320 g).
- Two analytical balances in RMD414 (max 220 g).

(II) Before using the balances:

- All users need to have proper training before starting any task. Contact Brenna and Sam if you need a training.
- Know what you want to measure (What kind of compound? Liquid or solid? Toxic, volatile, smelly, corrosive, etc.? Accuracy? How many digits do you want?, How many grams do you want?).
- Based on what you have in the flask, choose the appropriate balances to use (see section I)

(II) Measuring corrosive and smelly compounds:

The best scenario is to have an analytical balance in a fumehood. If we don't have that capacity, follow these steps:

(1) Choose the vial size that fit with the grams of sample you want to measure. Measuring 10 mg of sample in a 200-mL flask is a good way to have high error in your data.

(2) Put the vial (with cap) on the balance and tare (make all the numbers go to 0.0000). Alternatively, one can record the mass of the vial and cap and do subtraction afterward.

(3) Bring your vial to your hood and put a small amount of sample in your vial.

(4) Measuring the sample on the balance and record the values.

(5) Repeat steps (3) and (4) until you have the right numbers.

(6) Clean the balance and its surrounding area.

(III) Precautions and troubleshootings:

(1) When using the analytical balances, always wear gloves on both hands. Oils and water from our skin will make the value obtained inaccurate.

(2) The vials or flasks used for weighing have to be (best) at room temperature. Hot glassware creates an air convection current which will make the values obtained inaccurate.

(3) Don't lean on or move the bench or the balance. Jumping up and down next to the balances is a way to sabotage your results.

(4) Try to weigh "dry" sample.

(5) Always close the balance doors before reading mass values.

(6) Don't use dichloromethane to clean the left-over on the weighing boats or weighing paper into the reaction flask. They will melt and contaminate the reaction.

(7) If you spill any chemicals on the balance, please clean up.

(8) If you break any part of the balance, please inform Brenna or Sam. It's ok, accidents happen. It's better than letting the whole lab have false data.