SEM4 Hitachi TM3030+ Operating Instructions.

Start up:

- Turn on power switch on right side of instrument.
- Turn on computer.
- Power Up video https://youtu.be/6MtTPvK7tAs

- Put sample onto stage with double sided carbon or copper tape or switch to stage with holes for SEM stubs and insert stub into hole.
- Adjust stage height by unscrewing locking plate at bottom, use main post to move stage up/down so that tallest part of the sample is ~2 mm under the overhang on the black stage holder.
- Stage height video https://youtu.be/lQjXF6aHxIs

- Push Evac/Air button (big white button) to introduce air into the sample chamber. When air button is solid green, OK to open.
- Put stage with sample into instrument and tighten set screw with allen wrench.
       Be mindful of clearance on sample when shutting the door.
- Push Evac/Air button (big white button) to evacuate the sample chamber. When evac button is solid blue, chamber is pumped down.
       May need to hold chamber door shut while it begins pumping down.
- Sample loading video https://youtu.be/zmGaTrmRWCg

- Open Software TM3030Plus (instrument must be on before you open the software).
- Once blue light stops flashing, hit "Start" in the application, this powers filament and autofocuses.

Imaging
- Use autofocus, auto brightness and contrast buttons to get image focused and adjusted.
- Move sample using big X Y knobs on front of instrument. When zoomed in far enough, double click on image moves center.
- Voltages: 5, 15kV, EDX mode (15kV + boosts current)
- Detectors: SE (secondary electron), BSE (backscatter electron), mix (50-50 SE, BSE)
- Modes: regular, charge reduction

Shut down
- Hit Stop to turn off filament.
- Push Evac/Air button (big white button) to introduce air into the sample chamber
- When air light is solid green (not flashing), open chamber and remove the sample
- Close door and push Evac/Air button to evacuate the sample chamber

- Once blue light stops flashing, close the TM3030Plus application
- Shut down computer
  - **Do not put to sleep. Full shut down.**
- Turn off the SEM (flip switch) -software must be closed before you turn off the instrument.