This training is to ensure that the Vitrobot does not become damaged, samples are properly prepared and usable for imaging, and that users remain safe.

Clipping Handout

i. Know what grids you want to clip
ii. Reserve clipping station in iLab
iii. Alert Cryo-EM staff to reservation if any assistance, supervision, or grid retrieval will be needed

1) Acquire all equipment, tools, and supplies
    a. Outer plastic piece
    b. Blue foam piece
    c. Inner plastic piece
    d. Silver metal part of clipping station (pedestal)
    e. Gold metal part of clipping station (dial)
    f. Dissection forceps
    g. Screwdrivers
    h. Ethanol waste
    i. The 8 clipping tools
    j. New rings
    k. New clips
    l. Short, blunt tweezers
    m. Long, fine tweezers
    n. Autoloader tweezers
    o. Autoloader boxes
    p. Lamp
    q. Hairdryer
    r. Kim Wipes
2) Set-up Clipping Station
    a. Ensure that all the equipment parts and pieces are completely dry, use hairdryer and Kim Wipes as needed
    b. Assemble equipment
    c. Cool fully assembled clipping station with liquid nitrogen
    d. Pick, label, and place autoloader grid boxes
    e. Place unclipped grid boxes
    f. Loosen unclipped grid box screws
3) Clip Grids
    a. Use tweezer handle to spin dial to fully reveal groove for ring
    b. Use **BLUNT** tweezers to place ring in the groove
    c. Spin dial to cup ring in a tunnel
    d. Pick up grid with **LONG** tweezers and float grid into the tunnel over the ring
    e. Tap station as needed to center grid in the ring
    f. Use **BLUNT** tweezers to transfer clip to squeezy ring container pad
    g. Use **BLUNT** tweezers to deeply grab the center of clip
    h. Wedge clip fully into clipping tool
    i. Use clipping tool to stamp clip into ring
    j. Use **AUTOLOADER** tweezers to place ringed grid into autoloader box
4) Clean Up
    a. Tighten grid box screws
    b. Fill blue foam dewar with LN2 and quickly transfer grid boxes into it
    c. Place pedestal and dial on the heating block to evaporate
    d. Pour out the clipping station LN2
    e. Place the clipping station in the dehydrator to evaporate, separating all parts
    f. Return all tools to their original locations
5) **FILL OUT CLIPPING STATION NOTEBOOK**