**HW Number 4, Due May 2nd**

1. Explain the difference between work function and topography contrast in a SEM, properly citing any sources that you use.

2. https://www.youtube.com/watch?reload=9&v=kdb6dHEHCA0 states that SEM works on the principle of "scattering of electrons on the surface of the sample", as well as some other errors. Point out the errors, explaining better, including the statement about "3D images". (Think about this, and properly cite any sources you use.)

3. You have a sample of a thin film grown on silicon substrate. You want to examine your specimen in cross-section to check the resulting film microstructure. Explain how you would prepare the sample, what conditions (kV, detector(s)) you would choose for imaging.