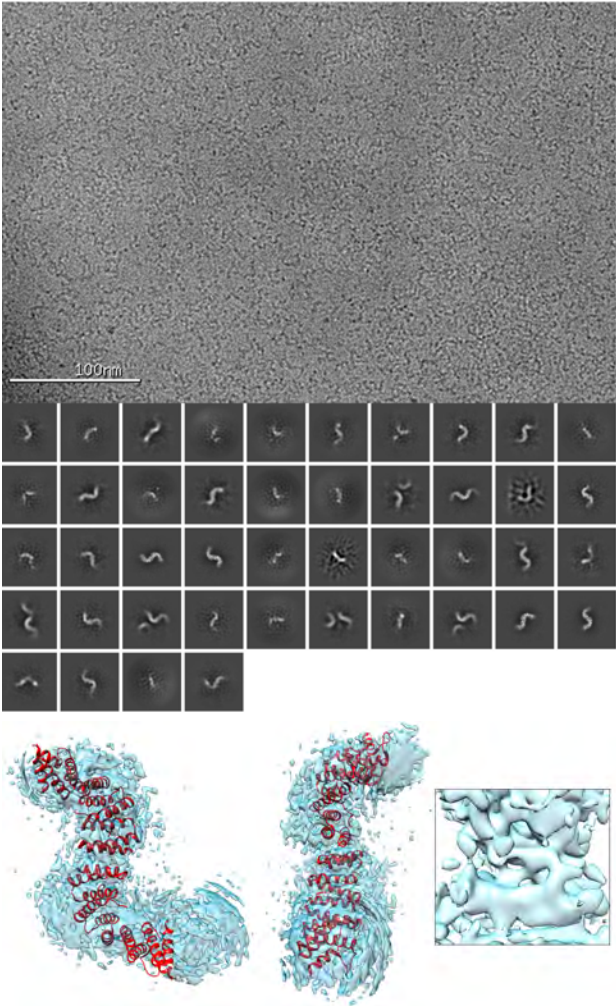


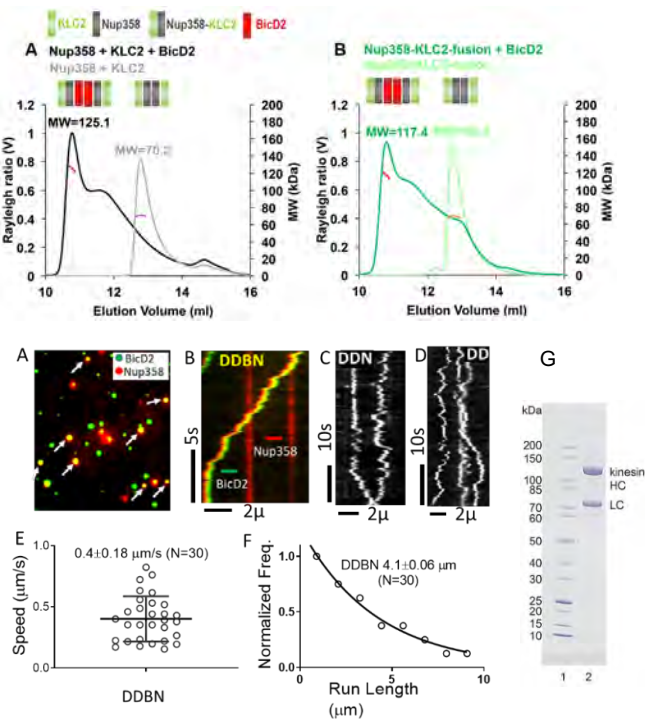
Preliminary Results



**Fig. 1. 2D classes of the minimal Nup358/ KLC2 complex.** Top: representative cryo-electron micrograph, collected by the PI with the Krios6 cryo-TEM at NYSBC. Bottom: representative 2D classes of 1,355,298 particles from 4188 micrographs.

**Fig. 2. Cryo-EM map of a minimal KLC2/Nup358 complex** which the PI has determined at the NCCAT center;  $\alpha$ -helices are visible. The published X-ray structure of KLC2 fused to a short LEWD peptide is docked into the map.

**Fig. 3. BicD2-CTD, Nup358-min and KLC2 form a ternary complex with 2:2:2 stoichiometry.** Proteins were analyzed by size exclusion chromatography coupled to multi-angle light scattering to determine molar masses (MW).



**Fig. 4. The dynein/dynactin/BicD2/ Nup358 complex (DDBN) moves processively on MT.** Top panel: DDBN complex. (A) Yellow dots show that Nup358 (red) binds to BicD2 (green). (B) Kymograph of DDBN. (C,D) Both dynein/dynactin/Nup358 (DDN) and dynein/dynactin (DD) complexes diffuse on MT. (E,F) Speed and run length of the active DDBN complex. (G) SDS-PAGE of *Ms* kinesin-1 with heavy chains (HC) and light chains (LC).