RAP1 Proposal
October 25, 2024

Project Title: Exploring the Regulation of Lipoprotein Lipase with CryoEM

NCCAT Proposal ID: NCCAT-GUP2-AW230929

Goals and Expectations
I am requesting a data collection session on a Krios during my follow-up visit allocated as part of my active GUP2 application. During this return visit, I am hoping to use the vitrobot to freeze my sample on UltrAuFoil grids. If necessary or preferred, we can provide our own UltrAuFoils. Imaging parameters similar to those used previously will be fine, but if it ends up being possible (there are enough good squares and we already have untilted data) I would also like to collect some images at a tilt, since this protein has a preferred orientation. Historically I have collected at 0 and then 40 or 45 degrees on our Arctica.

If possible, I would like to also ship some grids made on our own local premises (same purpose, sample, and grid type, but with a lipid monolayer applied to the grids) to be screened and potentially collected on during this same visit. The lipid layer would likely be tricky to apply at the NYSBC facility as it requires a couple organic solvents, special tweezers and glassware, and a humidity chamber, all of which we already have set up here at UNC.

Supplementary Information: (Arctica, K3 camera)

Low Mag – Lipid Grid (POPC)	High Mag – Lipid Grid (POPC)