

## Facility operation readiness and scope expansion at Stony Brook Cryo-EM (SBCEM) Facility

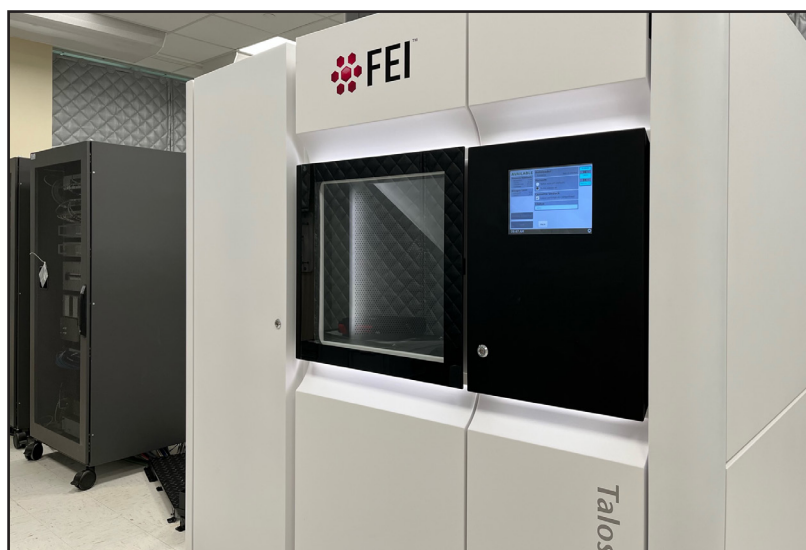
Our SBCEM facility, hosting a Talos Arctica microscope with autoloader (shown below) and Falcon 3 detector, is open to researchers at Stony Brook and outside. We have 6 active user groups with their Cryo-EM SPA projects who utilize our facility for their SPA data collection and/or sample preparation and screening.

In 2022, I became the Cryo-EM facility manager at SBCEM facility. As my previous research experience was in x-ray imaging, I needed Cryo-EM training to be able to run the facility. I was granted a 4-week internship, at Pacific Northwest Cryo-EM Center (PNCC) in June 2022. The intensive training covered both cryo-sample preparation and microscope data collection in-depth. The PNCC training prepared me well for the official reopening of our facility to all users in July and I have been successfully assisting with their Cryo-EM research since then.

At the end of the PNCC training, we discussed the need for future training that would cover

- (1) expert-mode microscope operation for advanced troubleshooting of the microscope, data collection at tilted angles, and cryo-tomography
- (2) SPA data analysis including GPU/data server management
- (3) other issues in facility management.

These advanced areas of training would be necessary to fully operate the facility for a wide range of user support and to advance facility readiness to assist with future Cryo-EM projects. At the moment, there is no additional staff at SBCEM yet it would be very helpful if the facility remains partially open during my training. The proximity of Stony Brook University to NCCAT provides a unique opportunity where I can obtain necessary advanced knowledge, as mentioned above, while minimizing facility downtime from my absence. I am applying for facility manager training at NCCAT to reach this goal.



The SBCEM Talos Arctica microscope