



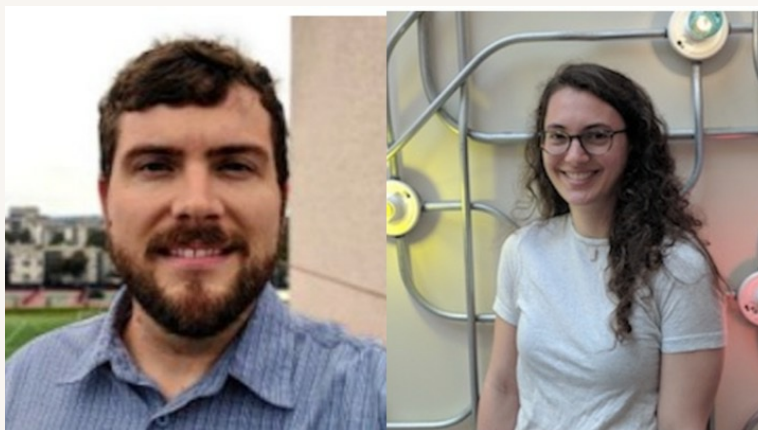
September 2019

The mission of NCCAT is twofold: to provide nationwide access to advanced cryoEM technical capabilities, and to assist users in the development of cryoEM skills needed for independent research. NCCAT provides access to state-of-the-art equipment required to solve structures to the highest possible resolution using cryoEM methods. Supported by the NIH Common Fund Transformative High Resolution Cryo-Electron Microscopy program (U24 GM-129539).

### Story of the Month: Don't Let The Bottlenecks Get You Down

It's morning in Harlem and John and Jenna are in search of breakfast. I guess no one told them about how good New York bagels are since they end up at Dunkin Donuts and a nearby juice bar. They've come to New York from San Francisco because they have been awarded Krios time from NCCAT at NYSBC, something that eluded them

back in San Francisco. Although the University of California San Francisco (UCSF) has two Krios microscopes, getting time on them is very difficult and is a significant bottleneck in their research program.



John Lee is a post doc in James Fraser's lab in the department of Bioengineering and Therapeutic Sciences at UCSF. He is learning CryoEM, after making the jump from NMR and X-Ray crystallography. As a kid he liked to take things apart to find out how they worked and now gets to do that professionally with ribosomes and proteins. Jenna Pellegrino is in her second year of graduate school and recently passed her qualifying exams. She is working with John on a collaboration with Professor Ian Seiple's lab that aims to explore the structural implications of modifying the ribosome-binding streptogramin A antibiotics and studying them in the context of resistance. CryoEM has made the structural biology side of this project possible, allowing them to turn around maps very quickly, that is if they can collect the data. It was fortunate for them that they saw the NIH announcement for three new CryoEM user access facilities – to which they applied right away.

John and Jenna were able to come on site, which not only allowed them to collect their data but also to learn Legimon and some of the high-level theory behind CryoEM as well as how to troubleshoot issues in real-time. They collected enough data in two and a half days to get two sub 3Å reconstructed maps. Since then a paper has been written up and a preprint is available on [chemRxiv](#).

With one of the major limitations solved, John and Jenna are free to deal with the next bottleneck

in their project, whatever that may be.

## Construction Updates

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On August 24 Krios #4 (the first of NCCAT's Krios's) was delivered! And our furniture has also arrived. Fingers crossed for a fast and trouble free build for Krios#4!



## Facility Manager Cross-Training

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In July NCCAT welcomed Puneet Juneja, as part of the TP2 Facilities Manager Cross-Training Program. Puneet spent a week at NYSCB learning the ins and outs of instrument maintenance, best practices, and staff and resource management. This will help his in running his own CryoEM facility at Emory University

## NCCAT at M&M 2019

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This year NCCAT had a presence at the M&M conference in Portland, Oregon along with the other user CryoEM centers,

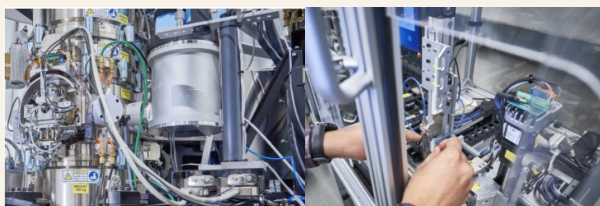


PNCC and SLAC.

If you missed it catch them at ASCB in December!



## Submit Your Proposal to NCCAT



### **NCCAT GUP1 PROPOSAL SUBMISSION**

The [GUP1 early access program](#) supports single particle cryoEM data collection on one of our existing Titan Krios instruments using a Gatan K2 direct-electron detector.

[Submit Now!](#)



### **NCCAT GUP2 PROPOSAL SUBMISSION**

The [GUP2 cycle](#) supports use of [Chameleon](#) (the commercialized version of [Spotiton](#)) and an exploratory screening microscope session.

[Submit Now!](#)



### **NCCAT TP1 PROPOSAL SUBMISSION**

The [TP1 cycle](#) supports embedded scientist training.

[Submit Now!](#)

### **NCCAT TP2 PROPOSAL SUBMISSION**

The [TP2 cycle](#) supports facility manager training

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