

CryoEM Current Practices Webinar

Determining structural mechanisms of allosteric regulation in ABCC family transporters using a remote cryo-EM pipeline



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The democratization of cryo-EM has rapidly advanced thanks to the emergence of cryo-EM centers, making it possible for institutions lacking the infrastructure to pursue structural investigations by cryo-EM. Using the tools and expertise available at PNCC, our group at the University of Arizona has been able to successfully employ cryo-EM for structural studies on ABCC family transporters, in the process establishing an almost entirely remote pipeline for determining high-resolution structures. In this talk, I will share the strategies we have taken to build an efficient workflow that maximizes center resources to advance our understanding of the structure/function relationships in the allosteric regulation of ABC transporters. Our structures shed light on the role of post-translational modifications and lipid-like substrates in the functional regulation of dynamic and flexible membrane proteins involved in oxidative stress and multi-drug resistance which I will also present in this webinar, with an emphasis on data processing strategies used together with orthogonal tools to cross-validate our findings.

All are welcome to attend. Registration is at no-cost, but sign-up is required:
https://us02web.zoom.us/webinar/register/WN_lx_6ITNMQ2-IEycocip2qw

This webinar series is jointly hosted by the NIH Transformative High Resolution CryoEM Program Service Centers: the National Center for CryoEM Access and Training (NCCAT), the Pacific Northwest Center for CryoEM (PNCC), and the Stanford-SLAC CryoEM Center (S2C2) who provide no-cost access to cryoEM instrumentation and training. In this monthly series, we will highlight cryoEM methods and use the Q&A session after the seminar to stimulate discussion of best practices and interesting challenges that will be helpful to researchers new to the field. Representatives from all three service centers will also be on hand to answer questions about the CryoEM resources available to biomedical researchers and how to access them.