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National Network for Cryo-Electron Tomography Application Portal

Matt Larson[1,2], Keith Thompson[1,2], Elizabeth Wright[1,2,3,4*]

[1.] UW-Madison Cryo-Electron Research Center, Department of Biochemistry, UW-Madison, Madison, WI, United States.
[2.] Midwest Center for Cryo-Electron Tomography, Department of Biochemistry, UW-Madison, Madison, WI, United States.
[3.] Department of Biochemistry, UW-Madison, Madison, WI, United States.
[4.] Morgridge Institute for Research, Madison, WI, United States.
* Corresponding author: erwright2@wisc.edu

The **National Network of Cryo-Electron Tomography Service Centers** are equipped with state-of-the-art specimen preparation equipment, cryo-electron microscopes, and skilled staff members to provide world class electron tomography of biological specimens with sub-nm imaging resolution. The mission of this network is to deploy these capabilities in support of original research efforts and to train new users in cryo-electron tomography.

Four national service centers process biological samples with methods including high-pressure freezing, plunge-freezing, cryo-FIB milling, correlative light and electron microscopy, and cryo-TEM imaging. We developed a unified application system at www.cryoetportal.org, a web portal for applying for training and service. Applications provided via the web portal are then reviewed quarterly by independent experts in cryo-electron-tomography. Applicants are to provide clear descriptions of their research goals, requirements for training and service, and current access to cryo-electron microscopy instrumentation.

The goal for the application portal was to provide a common application submission for any of the four national centers, to allow preferences in the selection of a particular center, to integrate the application with the review process, and to support tracking of the progress on approved projects. The web portal was also designed to provide content such as recorded webinars, interactive forums for discussions, and news and information on current events.

The web portal at www.cryoetportal.org interactively handles application submissions and the review process by third-party reviewers, through supported user accounts, a backing record manage system and database. The application portal is hosted on Microsoft Azure services, runs on Python with the Django framework and tracks records in a PostgresQL database. Large files are stored in the cloud with the Microsoft Azure Storage and are shared directly via generated web links to the object storage. The application portal has received two rounds of applicants, facilitated the review process with a panel of independent reviewers, and tracks on-going projects [1].

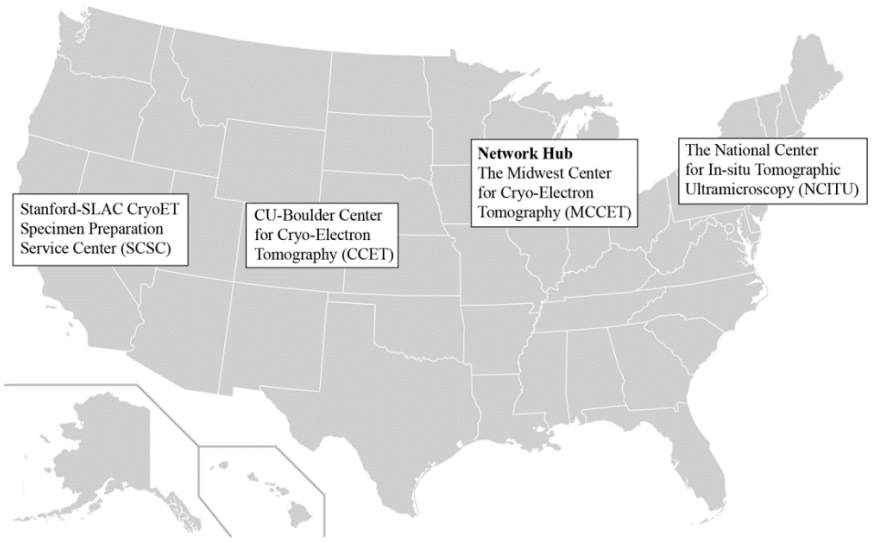

Figure 1. National Network of Cryo-ET Service Centers. Applications can be directed for service and training at any of the four service centers. The Network Hub coordinates the application review process and administrates for the service centers.

Figure 2. www.cryoetportal.org is an application portal for submitting new cryo-ET project proposals. Create a new account, provide information on yourself, and describe the cryo-ET instrumentation, training, and methods required for your project to be successful.

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