

Center for Molecular Microscopy
Collaboratory Application: Cryo-EM

The purpose of this application is to give us a general idea of what you're working on, to facilitate our scientific discussions with you, and to let us see whether there are areas of mutual scientific interest that can be explored with the types of technologies that we use. Your answers need not be comprehensive, but the more information you provide the better we can understand the project that you have in mind.

Please attach any relevant images or files to your email along with this document; please send all information in an email to nci-cmm@mail.nih.gov.

A. Contact Information

Principal Investigator:

Institution/ Laboratory:

Point of Contact (POC):

POC email:

POC phone:

B. Short Project Description

Please write a short paragraph (150-200 words) describing the scope of the research project you would like to pursue with us.

C. Detailed Project Description

This section is meant to give us a better idea of how it might be possible to address your scientific question of interest. Please answer any questions that are relevant to your project, and attach or include any relevant figures that may help us understand your research question.

1. What is the central question that you would like to address in collaboration with us? What, specifically, are you looking for?
2. For the macromolecular complexes you are interested in studying, please provide the following information:
 - a. How your protein(s) have been generated, isolated and purified. What expression system are you using? Are your proteins tagged?
 - b. Have you tested for correct protein activity/ correct folding or assembly?
 - c. How are you currently purifying/ maintaining your molecule(s) of interest? Please list current buffer conditions.
 - d. Number and identification of subunits and expected molecular weight

- e. Expected symmetry of the molecule
 - f. Expected number/ stability of conformational states
 - g. Is it soluble or membrane-integral?
 - h. Have you analyzed your complex for purity and stability by gel filtration or SDS-PAGE? Analytical ultracentrifugation? Dynamic light scattering? Native gel? Negative stain or other EM? Please attach any relevant data.
 - i. If detergents are required, which detergents have you used in the purification process? Which detergents don't work and why?
3. Has your system been studied by other structural methods? Why choose cryo-EM for your project?
 4. When collaborating with the CMM, it is expected that the proposing group will commit significant time and resources towards the project. In undertaking this project, what resources (personnel, equipment, time, or supplies) are you able to dedicate to the collaboration?
 5. Should this collaboration be successful, what do you see as future directions for the research to take?

D. Previous work and citations

Please include detail about any previous experiments and/or list any citations on previous work that relates to this project.