

Access to the Duke (SMIF) Titan Krios

About the Duke Titan Krios

The Titan Krios located in the Duke Shared Materials Instrumentation Facility (SMIF) is a cryo-transmission electron microscope (Cryo-TEM) designed for high resolution studies on frozen biological specimens. The Krios is used for single particle and tomography data collection.

Krios Usage Request:

Krios usage is limited to Duke University researchers. External researchers may access the Krios via collaboration with a Duke University researcher.

Researchers interested in high resolution data collection using the Krios are required to submit a Krios project proposal. Project request submission forms can be found on the SMIF web site at <http://smif.pratt.duke.edu/node/55048>. Requests for multiple measurement sessions can be made within the same proposal for specimens that are closely related and have been previously shown to behave similarly under cryo-EM conditions (e.g. a particular complex with different ligands or binding partners).

For high resolution data collection proposals, the aim is to demonstrate that the specimens are ready for high resolution data collection. This requires that specimens are screened on a separate Cryo-TEM prior to imaging the samples in the Krios. Specimen optimization screening sessions are generally not allowed in the Krios except under special circumstances approved by the DKAC.

Proposal Handling and Sample Scheduling

Proposal submissions will be time stamped by the SMIF staff upon receipt, and forwarded to the Krios Proposal Review Committee (KPRC). The function of the KPRC is to review Duke Krios proposals weekly; communicating through email or meeting via teleconference is acceptable. The KPRC is composed of the SMIF Director, the Duke SMIF Staff Krios Lead, and a minimum of two faculty members from the Duke Krios Advisory Committee (DKAC). The high resolution data collection proposal evaluation will be based on the assessment of preliminary data. The SMIF Staff Krios Lead will administer the execution of the evaluation process.

The result of the evaluation will be communicated to the applicant within seven days. Approved proposals will be assigned an approval code. Proposals that are not approved for Krios measurements will have the opportunity to work with SMIF Staff and/or the DKAC to revise the proposal toward successful re-evaluation. Resubmitted proposals will receive a new time stamp.