

Welcome to the Molecular-Machine-Shop

Date: Wednesday, Jan. 5th, 2005, 4pm.

Venue: Bioinformatics Collaboratory,
CMS Building, 2nd floor.

Speaker: Joachim Frank
HHMI Investigator
Director of Center for Molecular Machines

Title: Cryo-EM of the Ribosome –
Glimpses of a Molecular Machine in Motion.

Cryo-EM is being used to obtain three-dimensional images of the ribosome in different functional states. Such 3D snapshots portrait a complex pattern of conformational changes in both the ribosome and its ligands (tRNA, initiation, elongation and release factors, etc.). By analyzing these observations in the context of existing atomic structures, a rough outline of the dynamics of translation can be drawn.

Dear Colleagues,

In conjunction with the formation of a Center for Molecular Machines we are pleased to announce the inaugural session of our monthly Molecular-Machine-Shop seminar series.

The Center is a new initiative that seeks to capitalize on the strengths of the Wadsworth Center in three-dimensional imaging with a wide range of resolutions and levels of structural detail. Cryo-EM in particular has been recognized for its ability to capture different stages of processive macromolecular machines and intermolecular interactions in isolated systems, but the information it provides cannot be deciphered in the absence of atomic structures from X-ray crystallography and NMR. Methods of fitting and dynamic modeling are required for a full picture of functional processes.

The Center, currently a concept, will become a reality through the imagination and efforts of those actively involved. We hope it will become a rallying ground for collaborations, and an inspiration for teaming up for collaborative research programs worthy of Program Grants. Development of a Training Grant is one of the obvious opportunities to be pursued. The Center is NOT meant to be a club of structural biologists, but is open to participation by ALL investigators, postdocs and students who have an active interest in "biomolecular machines" in the widest sense of this term.

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