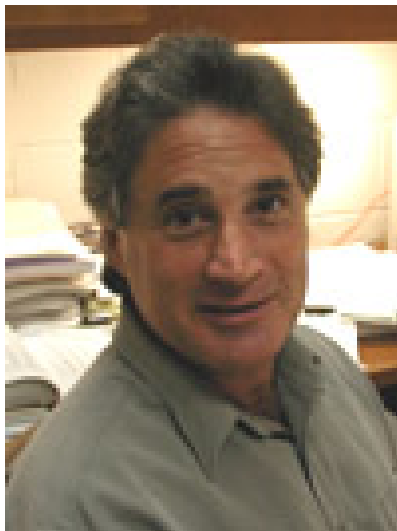


JOHN P. MCGOVERN LECTURESHIP IN BIOMEDICAL COMPUTING AND IMAGING

New Methods in Helical Reconstruction Yield New Insights
into Motility, Recombination and Bacterial Pathogenesis



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Some of the earliest methods for three-dimensional reconstruction from electron microscopic images were developed for helical objects. Dr. Egelman's research is focused on the structure and function of helical macromolecular assemblies, using the techniques of electron microscopy and computed image reconstruction. An approach is presented for the application of single-particle methods to helical filaments that surmounts many of the difficulties of helical image analysis, including indexing, unbending and the need to find long helically symmetric filament segments. Work on protein-DNA complexes active in homologous recombination and replication, and F-actin shows that the novel approach converges without user intervention to a stable solution and allows for the *ab initio* determination of helical symmetry, when no prior knowledge exists.



DATE: Wednesday, April 6, 2005
TIME: 4:00PM – 5:30PM
**PLACE: Trevisio Restaurant, 6th floor,
John P. McGovern Medical Center Commons,
6550 Bertner Ave., Houston, TX 77030**

Parking in the Commons will be validated by Trevisio Restaurant
For information contact Dr. Yao Cong at 713.500.3981



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