

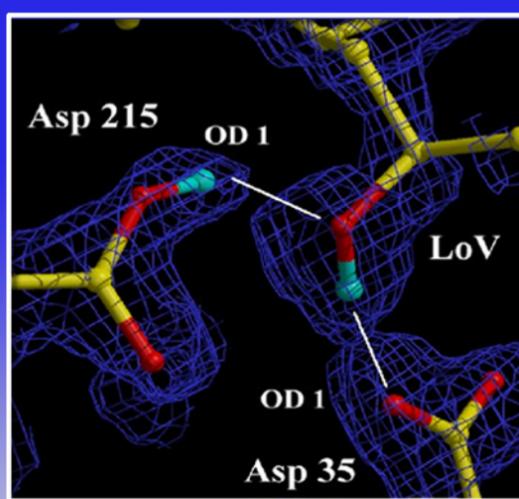
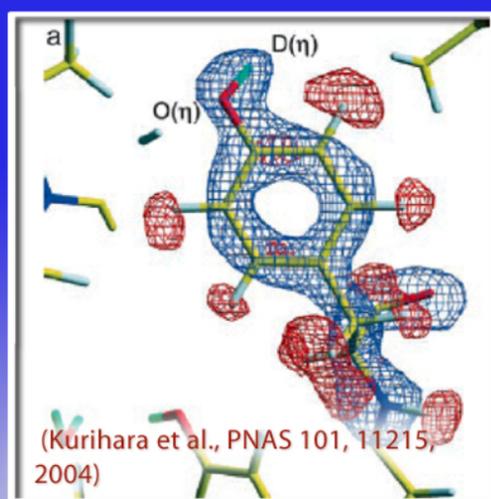
Conference on New Frontiers in Neutron Macromolecular Crystallography

July 12-13, 2005 • Spallation Neutron Source • Oak Ridge National Laboratory, Oak Ridge, TN, USA

Recent advances in structural biology and genomics present new opportunities to understand biological structure and function at the atomic level. Accurate determination of proton positions, protonation states and hydration in macromolecular systems remains an ongoing challenge in the area of structural biology research. Neutron Macromolecular Crystallography (NMC) can serve as a powerful tool to address this challenge due to its unique ability to view protons in macromolecular crystals even at a moderate 2 Å resolution.

The Spallation Neutron Source (SNS) offers an exciting opportunity to develop new world-leading capabilities for NMC that can provide 10-100 fold gains in performance compared to current facilities. The structural biology community has proposed to develop a state-of-the-art dedicated high resolution Macromolecular Neutron Diffractometer (MaNDi) for the SNS. Design calculations show that the unprecedented data rates and resolution limits achievable with MaNDi will greatly advance the fields of structural biology, enzymology and computational chemistry.

The objective of this conference is to focus the structural biology community's thinking and interest in this area. In addition to talks by leading scientists, this conference will host a poster session to highlight the important problems that NMC can address with MaNDi. We invite you to actively participate and guide the development of this resource for the structural biology community.



Expected outcomes:

- Increase interest in Neutron Macromolecular Crystallography among scientific leaders in structural biology research whose endorsement and support will increase the visibility of this technique at national and international levels.
- Identify important forefront macromolecular systems whose function mechanisms will greatly benefit from the unique structural information provided by Neutron Macromolecular Crystallography.
- Develop a strong plan, including individual roles and responsibilities, for MaNDi to receive timely funding for its design and construction and related SNS infrastructure.

Confirmed Speakers

Anthony Kossiakoff, *University of Chicago*
Wayne Hendrickson, *Columbia University*
Brian Mathews, *University of Oregon*
Dagmar Ringe, *Brandeis University*
B.C. Wang, *University of Georgia*
Jenny Glusker, *Fox Chase Cancer Center*
Keith Hodgson, *Stanford University*
Andrzej Joachimiak, *Argonne National Laboratory*
Alberto Podjarny, *IGBMC, Strasbourg, France*

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