

The Center for Structural Molecular Biology at Oak Ridge National Laboratory

V.S. Urban¹, W.T. Heller², G.W. Lynn², P.D. Butler², G.D. Wignall², M.V. Buchanan¹
and D.A.A. Myles¹

¹Chemical Sciences Division, Oak Ridge National Laboratory

²Condensed Matter Sciences Division, Oak Ridge National Laboratory

A Center for Structural Molecular Biology (CSMB), which is funded by the Department of Energy's (DOE) Office of Biological and Environmental Research (OBER), has been established at Oak Ridge National Laboratory (ORNL). The CSMB will integrate the existing strengths in the neutron sciences at ORNL with new capabilities being developed in computational biology and stable isotope labeling of proteins and make them available to a broad user community. The cornerstone of the CSMB is a small-angle neutron scattering instrument (Bio-SANS) that is currently under construction at the High Flux Isotope Reactor (HFIR) at ORNL. Bio-SANS will have a neutron flux and performance that is unprecedented in the US and that will provide the user community with world-leading capabilities in the field. The development of new computational methods for the analysis of biological scattering data and of facilities for the selective H/D labeling of complex macromolecular assemblies will provide the tools necessary to fully exploit these advantages in the application of SANS to complex problems in biology. Bio-SANS will be a critical resource for the US structural biology community and the CSMB will provide a wide range of scientific and educational opportunities for scientists and students working in the field.

Research sponsored by the Office of Biological and Environmental Research, U.S. Department of Energy, under contract No. DE-AC05-00OR22725 with Oak Ridge National Laboratory, managed and operated by UT-Battelle, LLC.

"The submitted manuscript has been authored by a contractor of the U.S. Government under contract No. DE-AC05-00OR22725. Accordingly, the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes."