A postdoc position is available at the NIST Center for Neutron Research (NCNR) in Gaithersburg, Maryland. NIST (National Institute of Standards and Technology) is a scientific research laboratory of Department of Commerce. This project is a collaborative effort between NCNR and a major pharmaceutical company.

We are looking for a highly motivated postdoctoral scientist to join us to study protein-protein and protein-excipient interactions in concentrated protein formulations using scattering techniques. The postdoc will have opportunities to work closely with industrial scientists as well as collaborate with scientists on NIST campus. This position is open for US citizens only.

Project Description:

There is an urgent need to understand protein-protein and protein-excipient behavior in high-concentration formulations sought in many pharmaceutical products. X-ray and neutron scattering have been traditionally used to study long- and short-ranged interactions in a variety of polymer and protein systems. Understanding interactions between monoclonal antibodies (mAbs) including their anisotropic component is critical to accurately predict the properties of concentrated mAb solutions, and model their stability and phase behavior. By closely working with industrial scientists, this project aims to develop methods to extract anisotropic interaction models for pharmaceutically relevant proteins. Combining the theoretical development, experimental efforts using SANS and SAXS, and molecular simulation, we hope to significantly improve the accuracy of anisotropic protein-protein interaction models used to understand mAb-based therapeutic solutions.

Contacts:

If interested, please feel free to contact Dr. Yun Liu (yun.liu@nist.gov ), Dr. Vincent Shen (Vincent.shen@nist.gov ), Dr. Wick Hatch (harold.hatch@nist.gov) or Dr. Alexander Grishaev (alexander.grishaev@nist.gov ).