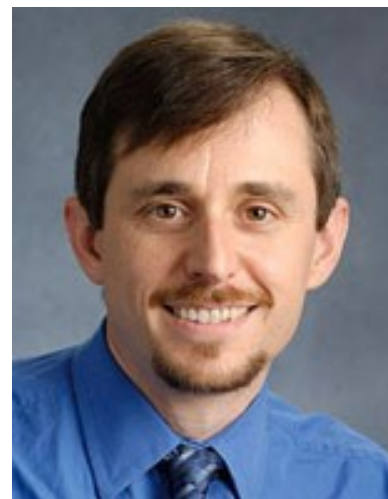


Professor David Weis

Kansas University



“Exploiting the role of flexibility in protein function and dysfunction with H/D exchange mass spectrometry”

Analytical Seminar

UW Department of Chemistry - Analytical Sciences Division

Thursday
May 9
12:15 pm
1315 Chemistry

Although proteins were once considered to be rigid structures, the importance of dynamics in protein function and dysfunction is now widely-recognized. Information about protein dynamics, particularly in large or disordered proteins, remains difficult to obtain. Amide H/D exchange mass spectrometry has matured into a well-accepted approach to map backbone dynamics of proteins. This seminar will highlight two projects in which such measurements have contributed to a better understanding of protein function and dysfunction. Calcineurin is an essential phosphatase that is auto-inhibited by a long, disordered region. H/D exchange, combined with classical biophysical methods, has provided new insights into how calmodulin relieves this inhibition. Aggregation is a long-standing problem in the formulation of biotherapeutics. We have used H/D exchange to obtain new insights into how stabilizers and destabilizers alter monoclonal antibody aggregation by modulating protein dynamics.