

**RUTGERS UNIVERSITY**  
**DEPARTMENT OF STATISTICS AND BIostatISTICS**  
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**Seminar**

Speaker: **Dr. John D. Chodera**  
**Memorial Sloan-Kettering Cancer Center**

Title: **Making the most of limited data in biophysics: Challenges in single-molecule biophysics, nonequilibrium statistical mechanics, and drug discovery**

Time: **3:20 – 4:20pm, Wednesday, April 8, 2015**

Place: **552 Hill Center**

**Abstract**

Theoretical and experimental biophysics is replete with challenges for making inferences from limited data, and improved methodologies are sorely needed. In this talk, I discuss several varieties of these challenges using examples from our own work: In single-molecule force spectroscopy under equilibrium conditions, the limited ability to collect data means these experiments can benefit greatly techniques for designing optimal data collection protocols and optimal ways of making use of finite data. Nonequilibrium experiments may offer a powerful new way to collect and analyze data, but questions abound regarding optimal approaches. In drug discovery, computational ligand design demands improved approaches for estimating ratios of normalizing constants. While we have made small useful advances in each of these areas, further progress will only come from additional statistical insight.

**\*\* Refreshments will be served @2:50pm in Room 502 Hill Center \*\***