

# Joint Physical/Chemical Biology Seminar

Tuesday,  
November 23, 2010

11:00 a.m.

Room 1315  
Chemistry Building

## Macromolecular Crowding and Protein Chemistry: Views from Inside & Outside Cells



Professor Gary J. Pielak

*Department of Chemistry  
University of North Carolina at Chapel Hill*

I will discuss the successes and challenges of in-cell protein NMR. One challenge is the inability to observe  $^{15}\text{N}$ - $^1\text{H}$  NMR spectra from globular proteins. To gain insight into this problem we turned to *in vitro* experiments where conditions can be controlled with precision. Using both synthetic polymers and globular proteins we studied the effects of crowding on the diffusion and stability of the test protein, chymotrypsin inhibitor 2. The results pinpoint the source of the problem and shed new light on the biological effects of crowding.

Refreshments will be available prior to the seminar at 10:45 a.m. outside room 1315

Graduate Students and Post Docs may meet with the speaker at 1:00 p.m. in Room 8335