



Glenn T. Seaborg Center Seminar

Selective Recognition of Heavy Elements by Protein-Based Reagents

Chuan He
Department of Chemistry,
University of Chicago

Wednesday, February 10, 2010
4:00 - 5:00 pm
Building 70A, Room 3377

We are interested in constructing protein-based reagents that can selectively bind various actinides. These reagents may be used to sense and sequester actinides from the environment, and may also be employed for the fundamental study of separating trivalent actinides from trivalent lanthanides. I will present our early success in converting a nickel(II)-responsive NikR regulatory protein into a uranyl-specific binding protein via rational protein engineering. This new protein binds promoter DNA only in the presence of uranyl. Our research efforts to engineer other protein scaffolds to bind radioactive metals will be discussed as well. Lastly, our research efforts in the general area of selective metal ion recognition and sensing will be presented.