

Defense Advanced Research Project Agency

SPARTAN: Single Protein Actuation by Real-Time Transduction of Affinity in Nanospace

- Phase I
 - Demonstrate proof of concept of control of protein conformation (CPC)
- Phase II
 - Deliver a chip level, tunable chemical and biological sensor

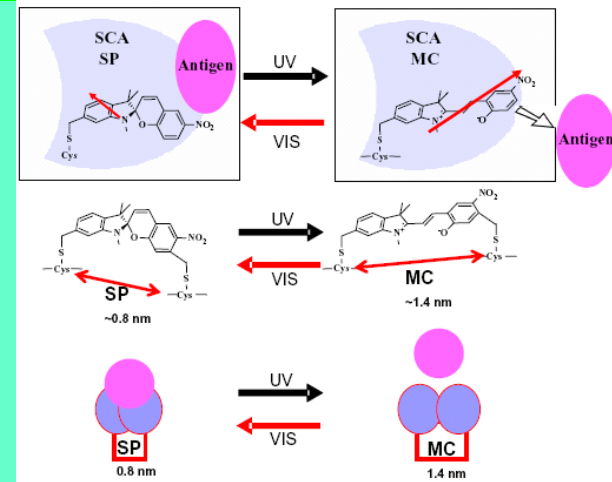


Control of Protein Conformations (DARPA)



- SPARTAN: Single Protein Actuation by Real-time Transduction of Affinity in Nanospace
- With Vanderbilt, U Texas Austin, U Wisconsin Madison, ORNL, UT Knoxville

- Label protein with sp-FRET dyes to sense conformation
- Also label with reversible photo-activatable switch for control
- Use nanochannels to trap single protein and enhance signal
- Maximum-likelihood sensing and real-time control of protein conformation, to modulate protein affinity



Antibodies of PA (Protective antigen of **b. anthracis**); periplasmic binding protein that binds **Soman** (nerve agent)

