Kevin Whitcomb is a postdoc in the Chemistry department at Colorado State University. Kevin specializes in single molecule fluorescence, scanning probe microscopy, excitonic nanomaterials, and nanoscience. He has used correlated confocal and atomic force microscopy to study the interaction between close proximity quantum dots. Currently he uses fluorescence and atomic force microscopy to study phage nanoparticles and develop single molecule capillary electrophoresis among other projects.

**Blinking, Antibunching, and Energy Transfer in Small Clusters of Quantum Dots**

This talk will describe the interactions between energy transfer and single molecule phenomena in clusters of nominally monodisperse semiconductor nanocrystals called quantum dots (QDs). I will describe the use of correlated atomic force and confocal microscopy in this investigation and the fluorescence data that led to our current model of energy transfer between close proximity QDs. I will also discuss how this model is used to investigate the fluorescence intermittency (blinking) of QDs in the cluster and how energy transfer leads to collective fluorescence blinking of the cluster. The same processes that cause a cluster of QDs to blink collectively also result in antibunched fluorescence from multiple emitters which is problematic for studies investigating individual QDs with fluorescence.