

Abstract Submitted  
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**Single Molecule Fluorescence Resonance Energy Transfer (sm-FRET) in Live Cells**<sup>1</sup> JOHN SAKON, KEITH WENINGER, NCSU Physics — This research reports progress towards single molecule fluorescence resonance energy transfer (smFRET) in the cytoplasmic environment of live cells. Recombinantly expressed, externally dye-labeled SNARE proteins were microinjected into cultured cells, tracked and imaged to observe real-time conformational dynamics. We discuss the many obstacles lowering signal:noise *in vivo* (cellular and coverslip autofluorescence, dye photobleaching) and our methods for overcoming these obstacles. Initial findings and the implications for this technique will also be discussed.

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