

Abstract Submitted  
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**Live cell imaging and determination of protein-protein rupture force with AFM** ANWESHA SARKAR, EDWARD KRAMKOWSKI, ELSA VARUGHESE, Wayne State University, ESSA MAYYAS, Wayne State University, PETER HOFFMANN, Wayne State University — Atomic Force Microscopy (AFM) provides superior imaging resolution and the ability to measure forces at the nanoscale. It is an important tool for studying a wide range of biomolecular samples from proteins, DNA to living cells. We are developing AFM measurement procedures to measure protein interactions on live cells at the single molecular level. To achieve this goal, a number of challenging problems need to be overcome. These include live cell imaging, lever functionalization, localizing single proteins on the cell surface, taking the effect of cell membrane deformation into account, developing data analysis methods to determine the protein-protein rupture force (subtracting out cell deformation) and determining bond characteristics and kinetic parameters for the protein interaction. This poster presents preliminary results obtained with AFM and addresses these various aspects.

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