

Abstract Submitted  
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**Anomalous diffusion and passage time distributions of microscopic particles through biological layers**<sup>1</sup> M. GREGORY FOREST, University of North Carolina at Chapel Hill, CHRISTEL HOHENEGGER, Courant Institute, New York University, SCOTT MCKINLEY, Duke University, LINGXING YAO, University of North Carolina at Chapel Hill — The field of passive microrheology was launched by Mason and Weitz in 1997, and has subsequently advanced in a variety of experimental and theoretical directions. The original aim is to infer viscoelastic properties from mean-squared displacement statistics of Brownian particles (beads) dispersed in the material. Extensions to bead-bead correlations have been advanced to screen local particle-material chemical potentials. The experimental measurements are equally, if not more so, ideal for characterizing the anomalous diffusive transport properties of soft matter, which are fundamental to pathogen or drug carrier diffusion through biological layers. Direct and inverse modeling and simulation tools will be presented, together with an evaluation of how well mean squared displacement serves as a proxy for passage time distributions.

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