

Abstract Submitted  
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**Surface motility of Myxococcus Xanthus** MAXSIM GIBIANSKY, University of California, Los Angeles, Bioengineering Department, WILLIAM HU, University of California, Los Angeles, School of Dentistry, FAN JIN, University of California, Los Angeles, Bioengineering Department, KUN ZHAO, WENYUAN SHI, University of California, Los Angeles, School of Dentistry, GERARD WONG, University of California, Los Angeles, Bioengineering Department — We examine the surface motility of Myxococcus Xanthus, a bacterium species found in soil that exhibits a broad range of self-organizing behavior, including predatory “swarms” and survival-enhancing “fruiting bodies.” To quantify the effects of exopolysaccharides (EPS) on surface adhesion and motility, we use modified versions of particle tracking algorithms from colloid physics to analyze bacterial trajectories, and compare the wild type (WT) strain to EPS knockout and EPS overproducer strains. We find that EPS deficiency leads to an increase in the number of “standing” bacteria oriented normal to the surface, attached by one end with minimal motility. EPS overproduction, by contrast, suppresses this phenotype. A detailed investigation of the influence of EPS on Myxococcus social motility will be presented.

Maxsim Gibiansky  
University of California, Los Angeles, Bioengineering Department

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