

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Long range electronic transport in microbial nanowires bridging an electrode and scanned probe¹ JOSHUA VEAZEY, SANELA LAMPAPASTIRK, KATHY WALSH, JIEBING SUN, PENG PENG ZHANG, GEMMA REGUERA, STUART TESSMER, Michigan State University — The filament-like appendages known as pili, expressed by the bacterium *Geobacter sulfurreducens*, are believed to act as electrically conductive nanowires [1]. Previously, we used scanning tunneling microscopy to study the local density of states at different positions along the wire. However, the long range electron transfer believed to occur in this protein has not been directly observed. Here we discuss a system for verifying long range transport using a scanning probe technique. Transport at distances of more than a few nanometers would require a novel biological electron transfer process.

[1] G. Reguera, K.D. McCarthy, T. Mehta, J.S. Nicoll, M.T. Tuominen, and D.R. Lovley, Nature 435, 1098 (2005)

¹The authors gratefully acknowledge support from the National Science Foundation (MCB-1021948) and the Michigan State University Foundation (Strategic Partnership Grant)

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Date submitted: 17 Dec 2010

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