

Abstract Submitted  
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**Modeling Political Populations with Bacteria** CHRIS CLEVELAND, Princeton University, DAVID LIAO, U. California San Francisco — Results from lattice-based simulations of micro-environments with heterogeneous nutrient resources reveal that competition between wild-type and GASP rpoS819 strains of *E. Coli* offers mutual benefit, particularly in nutrient deprived regions. Our computational model spatially maps bacteria populations and energy sources onto a set of 3D lattices that collectively resemble the topology of North America. By implementing Wright-Fisher reproduction into a probabilistic leap-frog scheme, we observe populations of wild-type and GASP rpoS819 cells compete for resources and, yet, aid each other's long term survival. The connection to how spatial political ideologies map in a similar way is discussed.

Chris Cleveland  
Princeton University

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