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Alun L. Lloyd* (alun_lloyd@ncsu.edu), Department of Mathematics, North Carolina State University, Raleigh, NC 27695. *Stochasticity and Heterogeneity in Models for Vector-Borne Diseases.*

Demographic stochasticity and heterogeneity in transmission can have important impacts on the dynamics of infectious diseases. Simulation of stochastic models can be highly time consuming, so analytic insights are of great value. We discuss the use of branching process theory and moment equations to assess the impact of demographic stochasticity on the transmission of vector-borne diseases in both well-mixed and heterogeneous settings. (Received February 10, 2009)