1124-92-263 **Garnett Kelsoe*** (ghkelsoe@duke.edu), Department of Immunology, Human Vaccine Institute, Duke University, Durham, NC 27710. *Darwin Writ Small: Population dynamics and selection in germinal centers.*

Germinal center (GC) B cells interact with local T cells to acquire somatic mutations and evolve by a Darwinian process towards increased affinity for antigen. The GC is a complex structure that facilitates this cellular evolution and has been studied primarily in genetically restricted, hapten-specific responses. Such responses are experimentally tractable but focus on intraclonal competition and selection. Recently, we described the population dynamics of genetically diverse GC responses to complex antigens, Bacillus anthracis protective antigen and influenza hemagglutinin, in which B cells competed both intra- and interclonally for distinct epitopes. These responses were significantly different from those to haptens and characterized by increasing clonal diversity as early "winners" were replaced by rarer, high-affinity B-cell clones. Despite affinity maturation, inter- and intraclonal avidities varied greatly, and half of GC B cells did not bind the immunogen but nonetheless exhibited the hallmarks of antigen selection, clonal expansion and competition. GC reactions to complex antigens permit a range of specificities and affinities, with potential advantages for broad protection. (Received September 11, 2016)