

1035-B1-1816 **Sheila K. Miller*** (sheila.miller@usma.edu) and **Josh Helms**. *The 1918 Influenza Pandemic: Mathematics, Biology, and History*.

We describe a biomodeling project given to students in a lower division modeling class. This project incorporates the story of the 1918 Influenza Pandemic, which infected $\frac{1}{5}$ of the world's population and killed more U.S. soldiers fighting in World War I than the war itself. The project teaches Leslie matrices and SIR (Susceptible, Infected, Recovered) models by tracking the progress of the disease in one of three cities (Boston, San Francisco, and Philadelphia). Students learn about the implementation of what was then a new approach to disease outbreak—a scientific one that relied on medical breakthroughs such as the discovery of the immune system and microbial pathogens—and evaluate effectiveness of attempts to contain the outbreak. As many of these methods were quite extreme, there is a natural opportunity to discuss current events and the tension between individual freedom and the protection of the whole society. (Received September 20, 2007)