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Modeling *Salmonella* transmission in swine

Salmonellosis is one of the most common bacterial food-borne illnesses. Farm animals, including cattle, pigs, and chickens are reservoirs for *Salmonella*. In recent years, the proportion of *Salmonella* resistant to several antimicrobial drugs (multi-drug resistant strains) has increased. Humans infected with multidrug resistant strains are at greater risk of hospitalization and death compared to patients infected with susceptible strains. Prevention of human salmonellosis depends on decreasing the prevalence of infections in farm animal hosts as well as identifying and intervening along key transmission routes. This REU project will focus on developing mathematical models of *Salmonella* transmission in swine farms to better understand the factors that favor the transmission and the persistence of these multidrug resistant *Salmonella* in different farm environments.

**This is an Undergraduate Poster