

Meeting: 1006, Lubbock, Texas, SS 10A, Special Session on Extinction, Periodicity, and Chaos in Population and Epidemic Models

1006-92-105 **Zhilan Feng*** (zfeng@math.purdue.edu), 150 N. University Street, Department of Mathematics, Purdue University, West Lafayette, IN 47907, and **Miriam Nuno, Maia Martcheva** and **Carlos Castillo-Chavez**. *Dynamics of Two-Strain Influenza with Isolation and Partial Cross-Immunity*.

The time evolution of influenza A virus is linked to a non-fixed landscape driven by tight co-evolutionary interactions between hosts and competing influenza strains. Herd-immunity, cross-immunity and age-structure are among the factors that have been shown to support strain coexistence and/or disease oscillations. We study a model which focus on the identification of competitive outcomes (mediated by cross-immunity) that result from the interactions between two strains of influenza A in a population where sick individuals may be isolated. We show that coexistence of both strains in the oscillatory regime is not uncommon and that oscillatory dynamics are possible for reasonable values of influenza parameters. (Received February 09, 2005)