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Danilo R. Diedrichs* (danilo.diedrichs@wheaton.edu), Wheaton College, Mathematics and Computer Science Department, 501 College Avenue, Wheaton, IL 60187, and **Paul A. Isihara** and **Doeke D. Buursma**. *The Schedule Effect: can recurrent peak infections be reduced without vaccines, quarantines or school closings?*

Using a basic, two transmission level seasonal *SIR* model, we introduce mathematical evidence for the schedule effect which asserts that major recurring peak infections can be significantly reduced by modification of the traditional school calendar. The schedule effect is observed first in simulated time histories of the infectious population. Analysis of the phase plane explains the relationship between the maximum recurring infection peaks and the period of an oscillating transmission function. The response may exhibit period-doubling and chaos induced at certain periods, leading to increased peaks. We show how to take these effects into consideration to design an optimum school schedule. (Received September 16, 2013)