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**Rudy L. Horne\*** ([horne@math.fsu.edu](mailto:horne@math.fsu.edu)), Florida State University, Department of Mathematics, 1017 Academic Way, Tallahassee, FL 32306-4510. *“Solitary Waves in Discrete Media in the presence of Four-wave mixing products”*.

In this talk, I will discuss solutions that arise in a vector discrete model of the Nonlinear Schrödinger equation where nonlinear inter-component coupling and four-wave mixing are taken into account. We show that the solutions to this model give rise to two single mode branch solutions as well as two mixed mode branch solutions. These solutions are obtained explicitly and their stability is analyzed in the so-called anti-continuum limit. Also, we connect this analysis to recent experiments that motivated this work. (Received January 21, 2008)