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**Mei Duanmu** and **Nathaniel Whitaker\*** ([whitaker@math.umass.edu](mailto:whitaker@math.umass.edu)), Department Of Math and Stat, University of Massachusetts, Amherst, MA 01003, and **Panos Kevrekidis**, **Anna Vainchtein** and **Jonathan Rubin**. *Steady and Traveling Wave Solutions in a Chain of Periodically Forced Coupled Nonlinear Oscillators*.

Motivated by earlier studies of artificial perceptions of light called phosphenes, we analyze traveling wave solutions in a chain of periodically forced coupled nonlinear oscillators modeling this phenomenon. We examine the discrete model problem in its co-traveling frame and systematically obtain the corresponding traveling waves in one spatial dimension. Direct numerical simulations as well as linear stability analysis are employed to reveal the parameter regions where the traveling waves are stable, and these waves are, in turn, connected to the standing waves analyzed in earlier work. We also consider a two-dimensional extension of the model and demonstrate the robust evolution and stability of planar fronts and annihilation of radial ones. Finally, we show that solutions that initially feature two symmetric fronts with bulged centers evolve in qualitative agreement with experimental observations of phosphenes. (Received June 27, 2016)