

Meeting: 1003, Atlanta, Georgia, SS 9A, AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates, I

1003-57-1668 **Rachel Betz*** (rabetz@vassar.edu), Department of Mathematics, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604-0257, **Sandra Eckel**, Department of Mathematics, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604-0257, and **Peter Pappas**, Department of Mathematics, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604-0257. *Cyclic Structures with Lag-time Generators: Lag-Time Sequences, Matrices, and Torus Knots.*

The aim of our work is to introduce the notion of lag-time sequences and to construct finite cyclic lag-time sequences in any number of dimensions. Our main results give necessary and sufficient conditions for lag-time sequences to be cyclic. Our main applications study the precise nature of lag-time sequences as torus knots. Here we completely classify torus knots arising from cyclic lag-time sequences. We conclude by showing that non-cyclic sequences have a uniform intersection property on the surface of a torus. (Received October 06, 2004)