Desiree Masters\* (masters.tdm@gmail.com), Ryan Bunge, Saad El-Zanati, Theresa Kamykowski and Isai Almeida-Arrieta. On Cyclic Cycle Plus a Chord Designs.

Let G be the graph consisting of a cycle of length n-1 plus a chord e. We investigate necessary and sufficient conditions for the existence of cyclic G-decompositions of the 2-fold complete multigraph  ${}^2K_{nx+1}$  for every positive integer x. These results were obtained at an REU Site for Pre-service and In-service Secondary Mathematics Teachers at Illinois State University. (Received September 22, 2009)