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RESEARCH INTERESTS:

- Theory and Applications of Graph Achievement Games

CURRENT RESEARCH:

Let F be a graph with no isolated vertices and q edges. The economical F -achievement game on the complete graph K_n is a two-player game. Player A first colors an edge green. Then Player B colors a different edge red. They continue alternately coloring the edges. The graph F is e -achievable on K_n if Player A can make a copy of F in his color in q moves. The graph F is ultimately economical (u.e.) if there exists an N such that F is e -achievable on K_N . In a previous paper, it was shown that every graph F has a supergraph which is ultimately economical. Let G be a u.e. supergraph of F with the least number of edges. The u.e. plus number of F , $ue^+(F)$, is the number of edges in the complement of F in G . We determine $ue^+(F)$ for cycles and theta-graphs, and find some upper bounds for $ue^+(F)$ for cacti and complete graphs. We show that minimal u.e. supergraphs are not unique, and exhibit graphs F such that for any nonnegative integer n , $ue^+(F) = n$.

SELECTED PUBLICATIONS:

- *On Achieving Channels in a Bipolar Game*, African Americans in the Mathematics, DIMACS Series in Discrete Mathematics and Theoretical Computer Science, AMS, Volume 34, 1997, pp. 23-27, Nathaniel Dean, editor.