1003-90-1407 **Greg S Spradlin*** (`spradlig@erau.edu`), Department of Mathematics, Embry-Riddle University, Daytona Beach, FL 32127, and **Christina D. Spradlin** (`spradlin@cs.ucf.edu`), 520 Legume Dr., Port Orange, FL 32127. *Extending Lanchester's Equations to the Time-Space Domain.* Preliminary report.

We generalize Lanchester's equations of warfare to partial differential equations involving time and two spatial variables. Unlike in Lanchester's original ordinary differential equations, the distribution of armies over the battlefield must be considered. Six different modes of attrition are introduced, which generalize Lanchester's equations for area fire and for direct fire. The effect of the distribution of forces and their movement on the outcome is considered, and numerical simulations given. (Received October 05, 2004)