

1035-Z1-680

**Donald E Hooley\*** ([hooleyd@bluffton.edu](mailto:hooleyd@bluffton.edu)), Department of Mathematics, Bluffton University, Bluffton, OH 45817. *A Nave Introduction to Trans-Elliptic Diophantine Equations.*

Students at my institution need accessible introductions to mathematical concepts to generate interest in further study. This talk presents a collection of catchy, easily understood examples from elementary number theory. In particular, we introduce linear and quadratic Diophantine equations through settings involving beetles, spiders and medieval warriors. Higher order elliptic, hyperelliptic and superelliptic curves will be illustrated. Then we will define general trans-elliptic Diophantine equations and begin exploring a specific equation noted by Wolfram. Formal traditional solution techniques using modular arithmetic, continued fractions, descent and bounding will be mentioned briefly. Finally, we will describe several open questions suitable for student investigation. (Received September 13, 2007)