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Chuu-Lian Terng* (cterng@math.uci.edu), Department of Mathematics, University of California, Irvine, CA 92697-3875. *Curves, surfaces, and solitons.*

The theory of soliton equations has been an active research area for the past forty-five years, with applications to algebra, geometry, mathematical physics, and applied mathematics. In this talk, I will explain how many of these equations arise as geometric evolution equations for curves and as the governing equations for surfaces in 3-space. In particular, I will use Quicktime movies and pictures produced in Palais' 3D-XplorMath mathematical visualization program to demonstrate properties of soliton equations and their associated geometric objects. (Received September 21, 2010)