962-N1-1333   **Al Cuoco*** (`alcuoco@edc.org`), Center for Mathematics Education, EDC, 55 Chapel Street, Newton, MA 02458. *Regression lines through quadratic forms.* Preliminary report.

Elementary statistics and data analysis courses make use of the "line of best fit" when analyzing data. The derivation of the equation for this line is usually devloped via calculus or linear algebra. In this talk, we'll parametrize the space of lines in the plane by two coordinates, develop the condition for two lines to be "equally as bad" with respect to a set of data, and generate the contour lines for this metric in dynamic geometry software. It tuns out that these "iso-badness" lines are conics, provably concentric ellipses, and the common center of the ellipses gives the line of best fit. Other insights emerge from playing with the dynamic model. (Received October 03, 2000)