

1023-J5-1451      **Robin H. Lock\*** (rlock@stlawu.edu), Dept. of Math, CS & Stat, St. Lawrence University,  
Canton, NY 13617. *What is  $R^2$ ? Using Dynamic Graphs to Illustrate Ideas in Regression.*

Although students in an introductory course can easily square a correlation, they have difficulty interpreting that value as a proportion of variability in the response variable that is explained by the linear regression on the predictor. Even if they learn to mimic the interpretive sentence properly, they typically have little experience with measuring "total" variability or "explained" variability so that the interpretation can make sense. We describe an activity that uses the dynamic "moveable line" capability in the Fathom software package to help students easily see the improvement in the variability explained using a linear function of a predictor. Student understanding of other regression concepts such as least squares fit, influential points and variable transformations can be enhanced through demonstrations and explorations with graphs that move, especially when the student can control that movement. (Received September 26, 2006)