

1096-M5-2699 **Lee Windsperger*** (lwindsperger@winona.edu), Gildemeister 322, Department of Mathematics & Statistics, Winona State University, Winona, MN 55987, and **Aaron Wangberg**. *Mathematical Investigations Using Interactive Graphing Tools in Precalculus*. Preliminary report.

Every topic in a typical precalculus course could easily provide opportunities for students to generate patterns, propose conjectures, and discuss conditions regarding the unknown underlying mathematical phenomena. The challenge, of course, is in the presentation! Interactive graphing tools provide one way to make precalculus concepts accessible to students before theorems and algebraic rules are revealed during lecture. In this talk, we will share activities and interactive graphing tools developed using the free, open-source Javascript library JSXGraph from the University of Bayreuth. These interactive graphing tools work on all web platforms and provide a quick means for the investigation of graphical phenomena. Furthermore, the tools developed using JSXGraph provide opportunities for students to apply precalculus concepts to data analysis. We will also highlight data collected from three sections of precalculus on how the interactive graphing activities are (a) impacting student learning, (b) shifting student expectations and the classroom learning environment, and (c) broadening student concepts of mathematical thinking. (Received September 18, 2013)