

1067-Q1-1740 **Andrew E Long*** (longa@nku.edu), 495 Rossford Ave, Ft. Thomas, KY 41075. *Global Warming-Based Calculus*. Preliminary report.

I'm trying an experiment in calculus: rather than teach the **tools** of calculus, I've decided to focus on the **ideas** of calculus, and trust that the tools (skills) of calculus will follow. Keith Devlin recently asserted that "Mathematics is a way of thinking about problems and issues in the world. Get the thinking right and the skills come largely for free." I decided to take Devlin at his word, and present the right thinking of calculus through the data and ideas of global climate change.

Each class my students work in groups on a lab which I've created, focusing on some specific issue of calculus (e.g. rates of change), but going at it from the standpoint of, say, the rate of change of global sea level. We're using real data, obtained from various primary sources such as NOAA's National Climatic Data Center.

In my talk I will 1) present more about my motivation to improve my calculus instruction in this way; 2) explain why I believe that the data of climate change is so important (and so appropriate) as source material for the ideas of calculus; 3) provide access to the data that I've used or created for classroom use; 4) show examples of the labs I've created; and 5) describe results from this first attempt at global warming-based calculus. (Received September 21, 2010)