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Bryan Adams* (bryan.adams@usma.edu), United States Military Academy, 646 Swift Road, West Point, NY 10996, and **Dusty Turner** and **Andrew Plucker**. *Academic Apps: Teaching with Technology to Motivate Instantaneous Rates of Change*.

Fundamental to understanding differential calculus is understanding the derivative as an instantaneous rate of change. Despite rudimentary examples presented in textbooks, students often fail to see applications of a derivative to their daily lives. For first-time calculus students, this disconnect can severely limit their understanding of fundamental concepts and theorems presented in a calculus course. Thus, we offer a technique that allows students to collect personal activity data using a commercial application, RunKeeper, on a personal device. Once the data is collected, a ShinyApp created in RStudio transforms the data into a comma-delimited file that students can manipulate in order to investigate their own rates of change. The process of collecting and analyzing personal activity data serves two purposes in the classroom: it allows students to discover the necessity of the limit as they analyze their own rates of change and it allows students to see how calculus is used to describe the physical world. (Received August 30, 2018)