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Rodney X. Sturdivant* (sturdivant.11@osu.edu), **Shonda Kuiper** and **Kevin Cummiskey**. *Playing and Getting “Messy” with Data*.

Decisions about data cleaning and how to handle violations of statistical assumptions can have great impact on the validity of conclusions in real research studies. Unfortunately, in typical introductory statistics course students are not forced to make such decisions or to wrestle with the implications. During the course of a three year National Science Foundation Grant, DUE TUES #1043814, we developed and implemented web-based games and corresponding investigative laboratory modules (labs) to effectively teach statistical thinking and the process of scientific research. We found a bonus in that several of the lab data sets have “messy” features and force students to carefully consider the role of underlying statistical assumptions. In addition to being engaging for the students the impact of data cleaning and violations of model assumptions were made more relevant in classroom testing. We discuss the use of two of the games and associated guided lab in introducing students to issues prevalent in real data and the challenges involved in data cleaning and dangers when model assumptions are violated. (Received September 17, 2013)