

Meeting: 1003, Atlanta, Georgia, MAA CP L1, MAA Session on Using Real-World Data to Illustrate Statistical Concepts, I

1003-L1-407 **Michael J Bosse*** (bossem@mail.ecu.edu), Dept. of Mathematics & Science Education, East Carolina University, Greenville, NC 27858, and **N. R. Nandakumar** (nnandaku@desu.edu), Department of Mathematics, Delaware State University, 1200 N. DuPont Hwy, Dover, DE 19901.
Why Probability Reveals that Real World Data CANNOT Always be Used to Explain Some Elementary Statistical Ideas. Preliminary report.

Outliers, or data which exceeds a given number of standard deviations from the mean of a data set which is normally distributed, are regularly discussed in elementary statistics courses. However, on a normal distribution, instructors realize that Chebyshev's Inequality guarantees that the probability is relatively low that data exceed merely 2 standard deviations from the mean and that the probability is small indeed that data would exceed 3 standards deviations from the mean. This investigation employs contrived data to investigate the concepts of standard deviations and outliers for which real world data may rarely be applicable to demonstrate. (Received September 14, 2004)