An Inquiry-based Approach to Learning Statistics
Using R and Monte Carlo Simulations

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Abstract: The Greek-born philosopher Plutarch is attributed with the saying: "the mind is not a vessel that needs filling, but wood that needs igniting." Extending Plutarch’s metaphor, some fields of study challenge educators to establish the necessary conditions for fire to ignite and take off. Statistical inquiry has been a challenging field partly due to the expense associated with data collection. Today, we have technology—inexpensive hardware and software—that removes former barriers to an inquiry-based approach for learning statistics, making conditions right for igniting the metaphoric fire. In this talk, we will use simulation techniques to explore several statistical concepts including sampling, confidence intervals, and ordinary least squares estimates for the line of best fit.

Christopher acquired a B.S. and M.S. in mathematics from Texas State University – San Marcos. He continued studies in mathematics at the University of North Texas, concentrating in differential equations. While at UNT he changed majors and is currently pursuing a Ph.D. in educational psychology with a concentration in research, measurement, and statistics. He works full-time as a business systems analyst in the Office of Technology at Texas Woman’s University.