

Using Biointeractive Spreadsheet Data Analysis Tutorials to Teach Inquiry Lab Skills

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Since transforming our introductory biology course to inquiry labs, one of the biggest challenges that we've faced is teaching students to use technology for analysis and interpretation of experimental data. This challenge has been two-fold. First, most of our students lack any experience working with spreadsheet or statistical analysis programs, and second, students in our courses must bring their own computers to class, necessitating use of free programs that will run identically on all computer platforms. Our solution to these challenges has been to incorporate the Biointeractive Spreadsheet Data Analysis Tutorials, Google Sheets, and a free Google Sheets add-on for statistical analysis. The tutorials are designed to teach students to use Google Sheets or Excel for essential data analysis skills such as organizing data, using formulae and functions to calculate statistical values including mean, standard deviation, standard error of the mean, 95% confidence intervals, plotting graphs with error bars, and performing t-tests. During this workshop, participants will explore the tutorials in a 'learner lens' to analyze data using Google Sheets or Excel. Afterwards, you will view the tools in an 'educator lens' and discuss methods for assessing student mastery of spreadsheet skills and where this might fit into your course.

Keywords: Data Analysis, Google Sheets, Biointeractive Spreadsheet Data Analysis Tutorials

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