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Science History to Improve Statistics Instruction in Introductory Biology Courses

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In the past decade, advancements in automation, DNA sequencing, remote sensing, imaging etc., has rapidly increased the data in biology. Biologists of the future are required to be literate and innovative in statistical methods to make meaningful interpretations of big data. However, students who attend an introductory biology courses with no experience in statistics, often find it hard to grasp statistical concepts. In engineering, science history has been frequently used in physics labs to get students motivated about physics and prevent them from dropping out. This led us to hypothesize that inspiring students with science history of statistical methods could improve our statistics instruction in an introductory biology course. Phase-1 of our study was small scale (n=36), where we measured student understanding, interest and confidence in a scale of 1-10. Phase2 was a large scale study (n=401), where we asked students regarding their perception of learning statistical methods in an introductory biology course and their thoughts on science history. This provided us with interesting insights into the student thought process when it comes to learning statistics and incorporating science history of statistical methods in an introductory biology course.

Keywords: science history, statistical methods

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