

## **What life scientists should know about statistics**

Dr. Gregory Francis  
Professor of Psychological Sciences  
Purdue University  
West Lafayette, Indiana, USA

Failures to replicate, reports of fraud, and publication of outlandish findings have caused much grief within fields that depend on statistical analyses. This talk discusses some of these issues and provides practical advice on how to identify poor research practices that may derive from inappropriate statistics, data collection, reporting, or theorizing. Specific solutions are hard to come by, and most proposed methods to improve things seem to address the wrong issues. While there is no universally applicable method to statistical analysis, we will discuss long-term goals that should motivate nearly all scientific efforts.