

ASA Statement on Statistical Significance & P- Values¹: A look back

Regina Nuzzo, PhD

ASA Senior Advisor for Statistics
Communication & Media Innovation²

¹ Wasserstein, Ronald L., and Nicole A. Lazar. "The ASA statement on p-values: context, process, and purpose." (2016): 129-133.

² Opinions are my own

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2014:

Q: Why do so many colleges and grad schools teach $p = 0.05$?

A: Because that's still what the scientific community and journal editors use.

Q: Why do so many people still use $p = 0.05$?

A: Because that's what they were taught in college or grad school.

– *George Cobb, Mount Holyoke College*

2015:

The Basic and Applied Social Psychology (BASP) 2014 Editorial emphasized that the null hypothesis significance testing procedure (NHSTP) is invalid, and thus authors would be not required to perform it . . . The purpose of the present Editorial is to announce that the grace period is over. **From now on, BASP is banning the NHSTP.**³

– *BASP Editors David Trafimow and Michael Marks*

³Trafimow, David, and Michael Marks. "Editorial in Basic and Applied Social Psychology." *Basic and Applied Social Psychology* 37 (2015): 1-2.

TAS Statement:

6 *P-Value Principles*



1

P-values can indicate how **incompatible** the **data** are with a specified statistical **model**.



2

P-values do not measure the probability that the **studied hypothesis is true**, or the probability that the **data were produced by random chance alone**.



3

Scientific conclusions and business or policy decisions should not be based only on whether a p-value **passes a specific threshold.**



4

Proper inference requires **full reporting** and **transparency**



5

A p-value, or statistical significance, does not measure the **size of an effect** or the **importance of a result**.



6

By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.

6 By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.

- A p-value **without context** or **other evidence** provides limited information. 🙄
- A p-value **near 0.05** taken by itself offers only **weak evidence** against the null hypothesis. 👍 🙄
- A **large p-value** does not imply evidence **in favor of the null** hypothesis. 🙄 👍
- **Data analysis should not end** with the calculation of a p-value. 🙄

Tally

👍 2

👍 👎 4

👎 3

And that's why we're here today . . .
(to be continued)