

# An interactive web applet for exploring the impact of unequal variances on the $t$ -test

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## Background

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When our students ask “why”, we are often left with little more than a superficial answer.

Surely we can do better than this!

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We wanted to come up with a way to help students better understand how unequal variances affect the performance of the  $t$ -test. To this end:

1. we built an interactive web applet (a Shiny app), together with
2. a detailed classroom activity.

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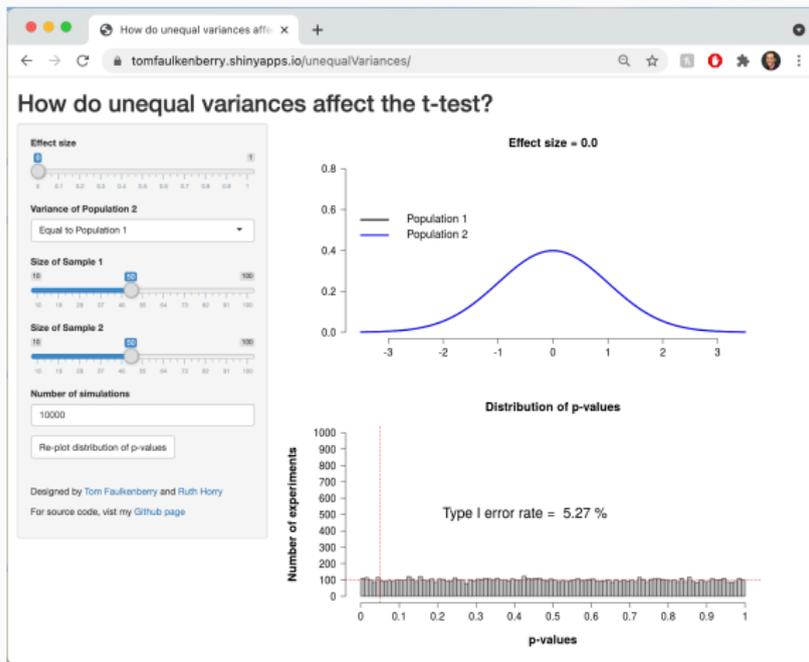
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Together, these two things may help students gain some clarity regarding “why” we need to assume equal variances for the pooled independent samples  $t$ -test.

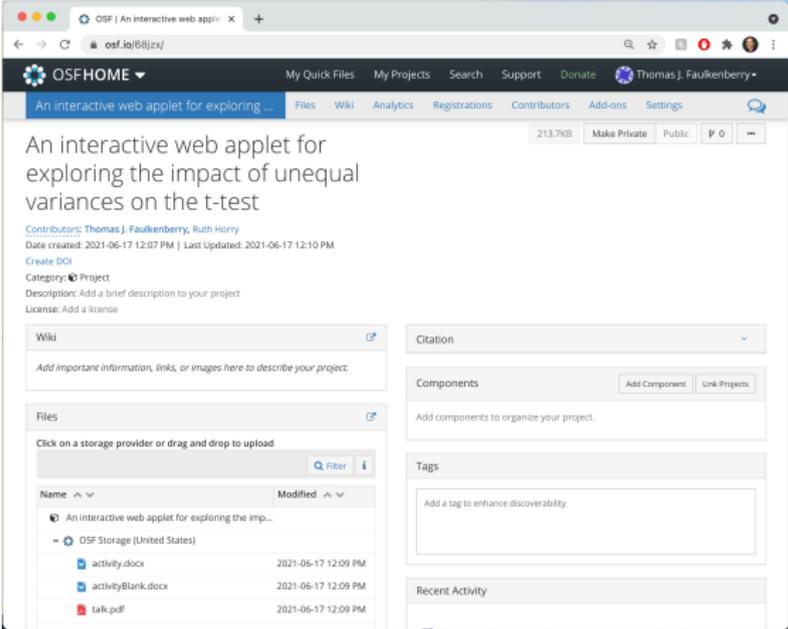
# The Shiny app

<https://tomfaulkenberry.shinyapps.io/unequalVariances>



# Getting the activity

The activity is hosted on OSF (Open Science Framework). Just go to <https://osf.io/68jzx/>



The screenshot shows a web browser window displaying an OSF project page. The browser's address bar shows the URL <https://osf.io/68jzx/>. The OSFHOME logo is in the top left, and the user's name, Thomas J. Faulkenberry, is in the top right. The page title is "An interactive web applet for exploring the impact of unequal variances on the t-test". Below the title, it lists contributors (Thomas J. Faulkenberry, Ruth Horry), the date created (2021-06-17 12:07 PM), and the last updated date (2021-06-17 12:10 PM). There are buttons for "Make Private", "Public", and "P 0". The page is divided into several sections: "Wiki" (with a description field), "Files" (with a table of files), "Citation", "Components", "Tags", and "Recent Activity".

Name	Modified
activity.docx	2021-06-17 12:09 PM
activityBlank.docx	2021-06-17 12:09 PM
talk.pdf	2021-06-17 12:09 PM

# Questions?

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