Week 2: Data Viz Wiz!

Alright now we get to the fun part: data visualization. Now we are going to see why R is king at creating scientific figures.

Note: please check out this paper on how to create visualizations for research purposes https://psyarxiv.com/4huvw

Learning Objectives

1. Create plots of data plots using the geometries of points (geom_point) and jitter those points
2. Create facets and assign colors on the plot
3. Save plots using ggsave
4. Create histogram and violin plots
5. Add error bars
6. Change themes

In this activity we are going to visualize the "beachbugs" data and see the many different ways we can put this data into an appropriate plot.

If you feel lost please check out the code on

Code:
https://github.com/arcaldwell49/STORK_summeR_2021/blob/main/Week3%2Fscripts%2Fvizwhiz.R

Activity 1: point and jitter

To start you will need to download a new dataset from the OSF page https://mfr.osf.io/render?url=https://osf.io/pr49e/?direct%26mode=render%26action=download%26mode=render

For this activity we are going to start with a basic X-Y scatter plot and some slight variations on that idea. Then we will export some of those plots using the ggsave function.

Step-by-step guide: https://rladiessydney.org/courses/ryouwithme/03-vizwhiz-1/#1-1-plotting-bug-levels-by-year

Activity 2: a box and a violin

Now we can move onto more appropriate visualization of many data points in this set. We can show summary statistics (median and IQR) with the boxplot, or we can pot the density the points so we can see the entire distribution.

Step-by-step guide: https://rladiessydney.org/courses/ryouwithme/03-vizwhiz-2/#2-1-boxes-and-violins

Activity 3: Show the errors

Traditionally we want to maybe show the mean response and the associated error (either the standard error or the standard deviation). Now, I will openly admit that the activity which you are about to do involves bar plots. I hate bar plots and think they are a terrible visualization technique for continuous data. So, please check out the code I for this activity to see other data visualization techniques that I would prefer for the data.

Step-by-step guide: https://rladiessydney.org/courses/ryouwithme/03-vizwhiz-3/#