Why?

- Data simulation allows you to do a number of things:

    - Determine whether your design supports the kinds of analyses you are planning to do (especially important if you pre-registered your analysis plan on OSF).

    - Determine whether the sample size and number of observations you are collecting is sufficient for you to detect the magnitude of the effect you are predicting with a reasonable level of precision.

    - Write your analysis script before you've even collected your data thus making everything more efficient.

The `rnorm()` function

- The `rnorm()` function allows us to sample n times from the normal distribution where we can specify both the mean and the standard deviation of the distribution we want to sample from. The function takes three parameters - the number of samples, the mean and the standard deviation of the distribution to sample from.

```
> rnorm(5, 0, 1)

[1]  0.24751016  1.12242126  2.13538261 -0.04670306
0.32518029

> rnorm(5, 0, 1)

[1]  0.1661151  0.1937463 -0.7434664  1.0375703  2.2625231
```

- Notice that the two times we call the `rnorm()` function we get different random samples…