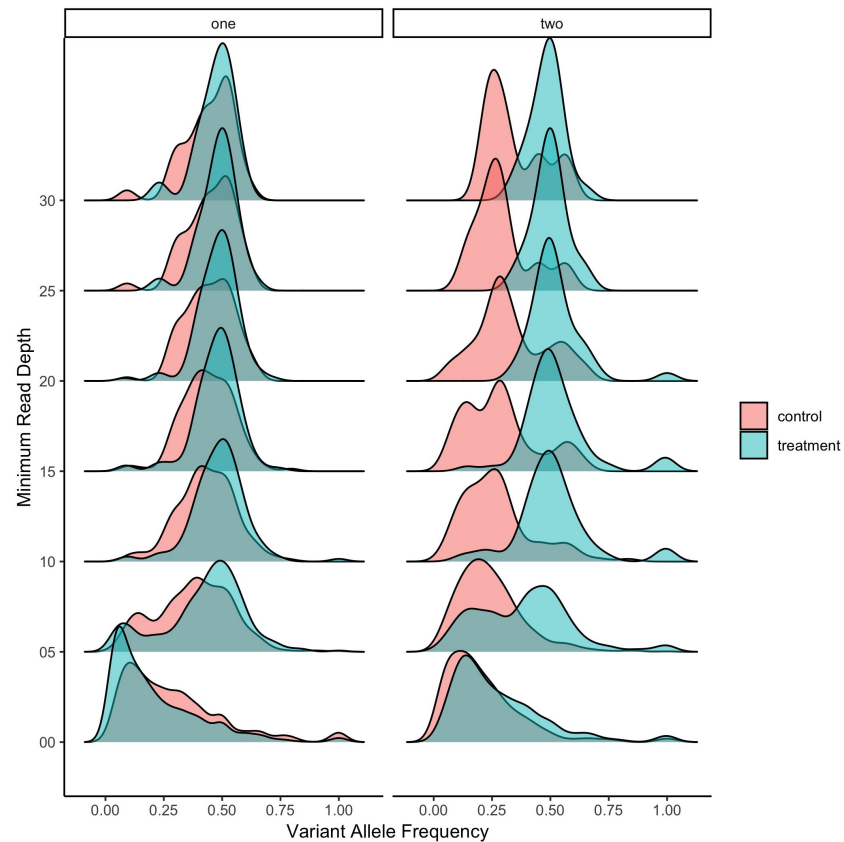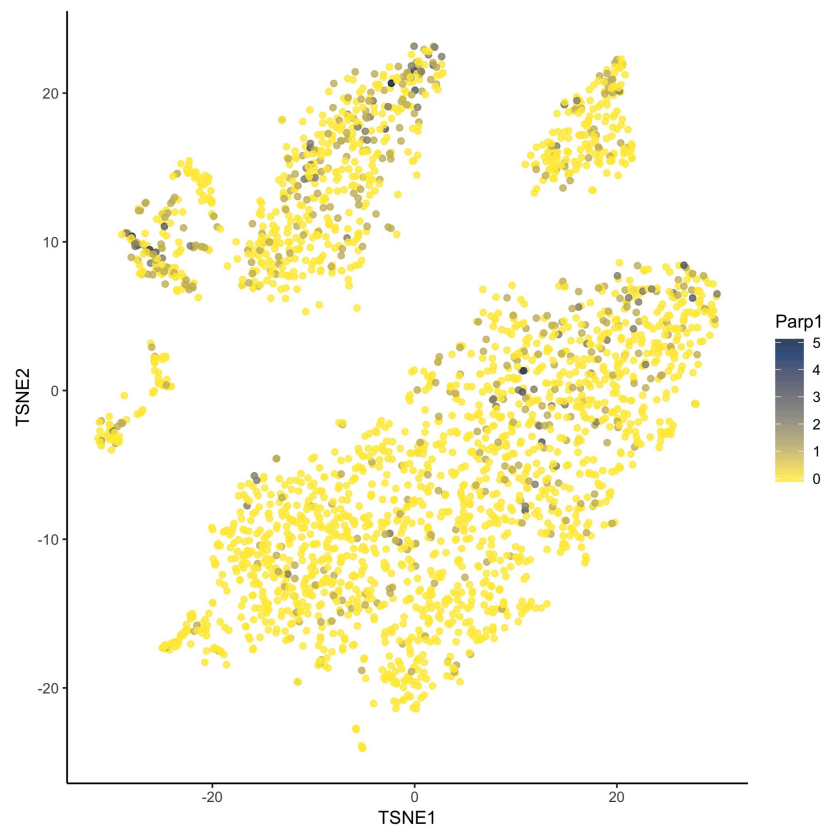# Plotting with **ggplot2**

Fels Bioinformatics Meetup 2018.09.21

Plot examples

Quick Statistics Review

Categorical

variable with a limited number of fixed descriptions; basically a label
ex: sample IDs, chromsomes, survey responses, genotypes, phenotypes

unordered

No natural ordering
ex: sample IDs, genotypes, phenotypes

ordered

Natural way to order them
ex: survey responses, chromosomes

Numeric

numbers
ex: height, weight, read counts

discrete

Values are indivisible (or dividing them makes no sense); count data
ex: read counts

continuous

Values can be divided and expressing them as a divided value, even if that value isn't present in the data set, is fine
ex: height, weight

The grammar of ggplot

Data, geometry, and aesthetics are **independent.**

grammar	description
data	the table you want to visualize
geometry	what shape you want to give that visualization, ex: scatter plot, boxplot, violin plot, bar plot, histogram, density plot
aesthetic	the aesthetics of the geometry, ex: size, shape color

The philosophy of ggplot

Data, geometry, and aesthetics are **independent**.

```
ggplot(data_table, aes(x = column1)) +

  geom_point(aes(color = column2))
```

?function()

If you want to know more about a function, type `?function_name()` into the console and its help documentation will pop up under Help on right in RStudio.