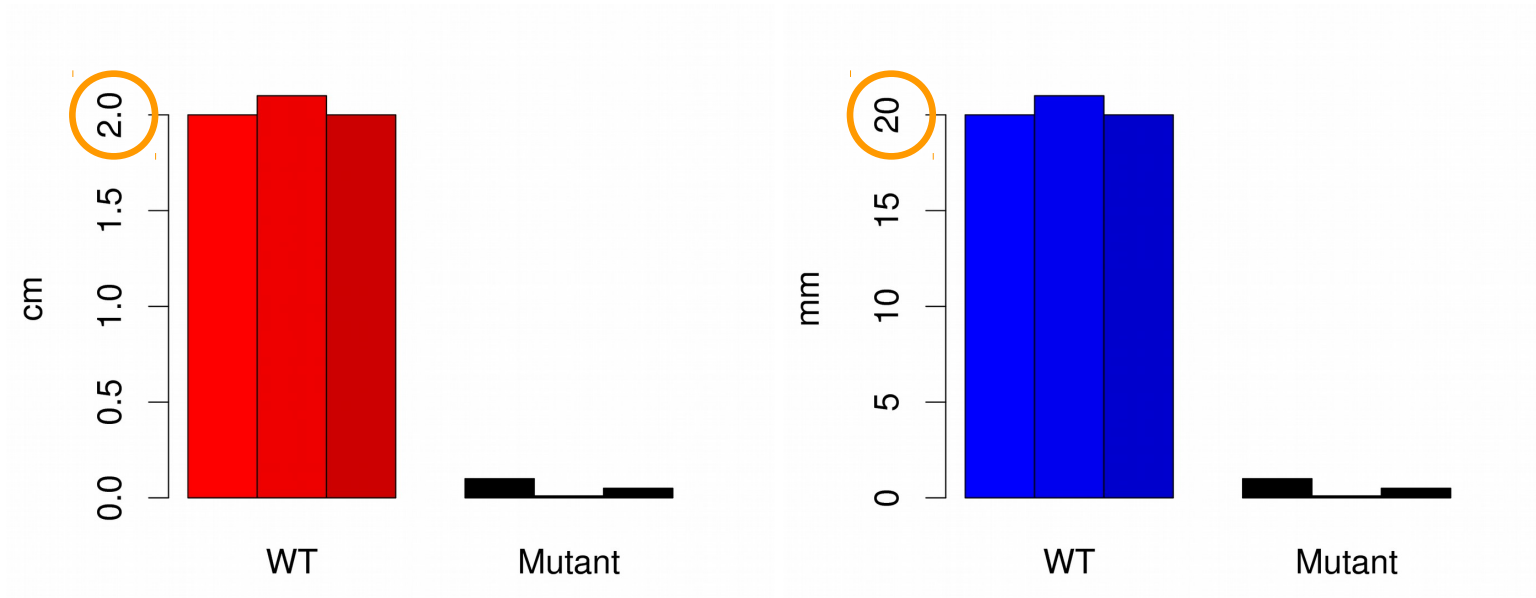


RNAseq – Statistics

Alisandra Denton

CEPLAS RNA-Seq Workshop 2022

The good 'ol T-test

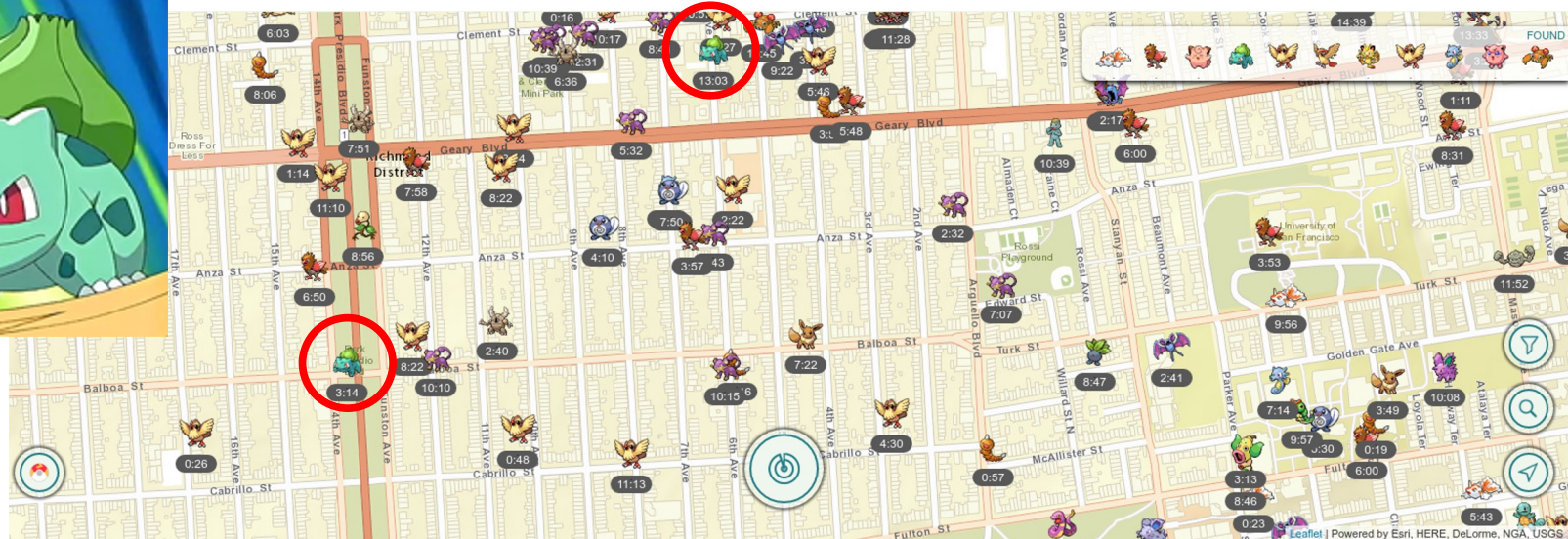


T-test would give exactly the same p-value, as relative, not absolute, values matter.

This is NOT appropriate for count data.

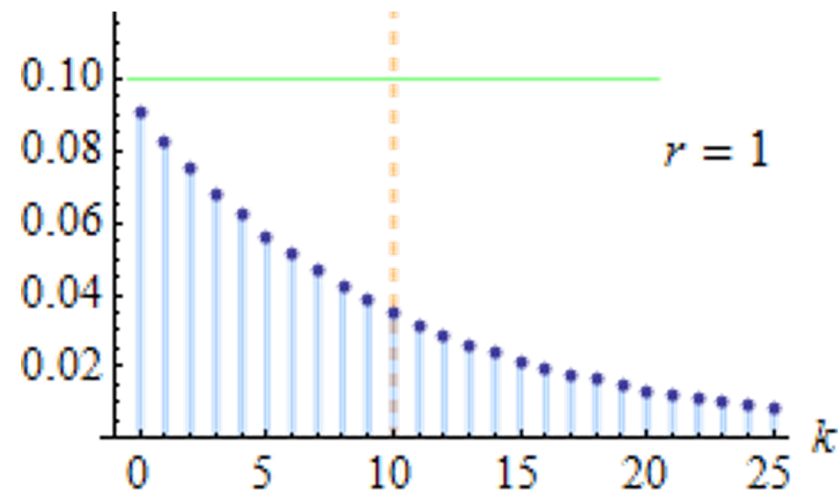


RNA seq statistics



Img source: fastpokemap.se, pkmngowiki.com, cdn.bulbagarden.net

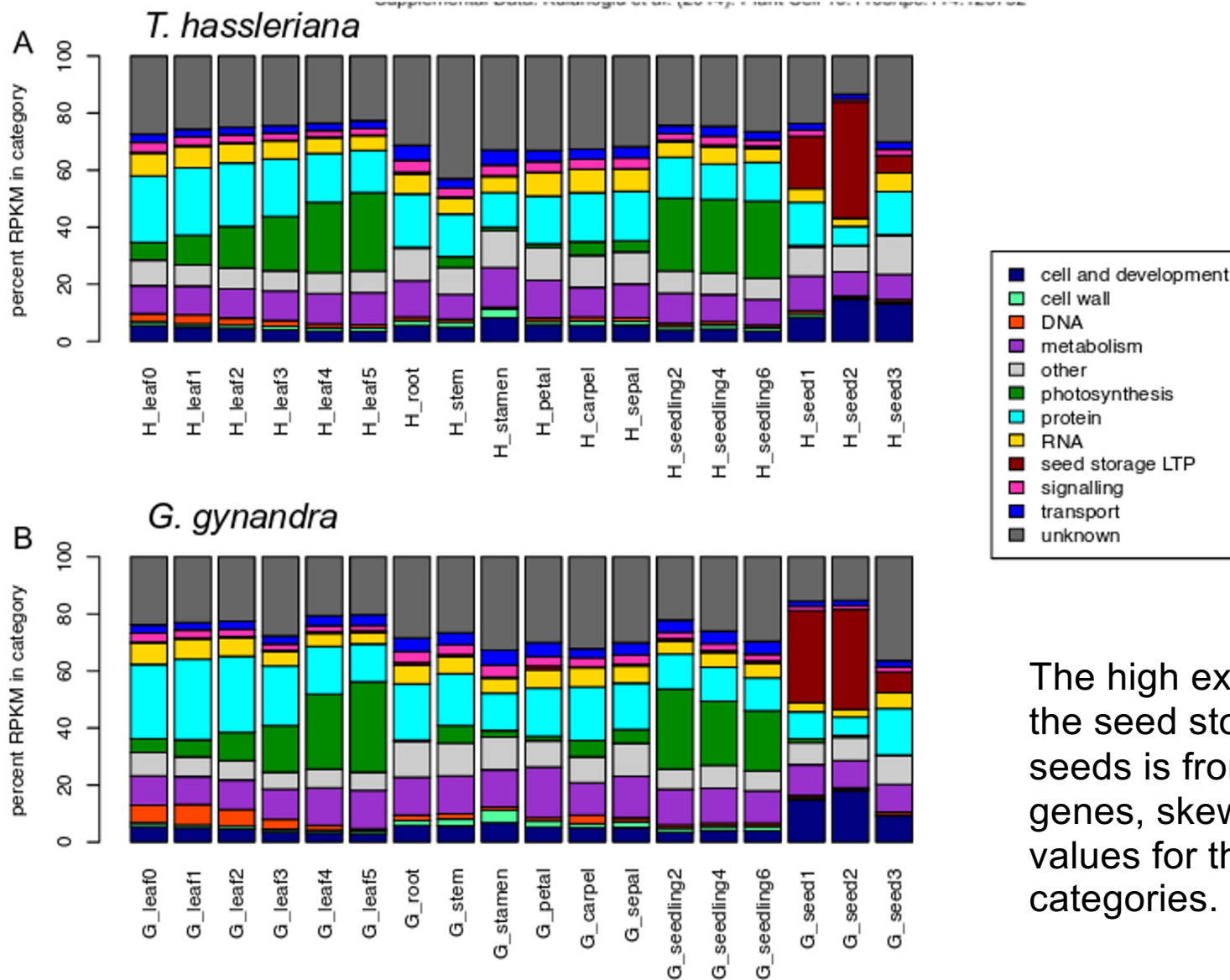
Negative Binomial Distribution



Animation at:

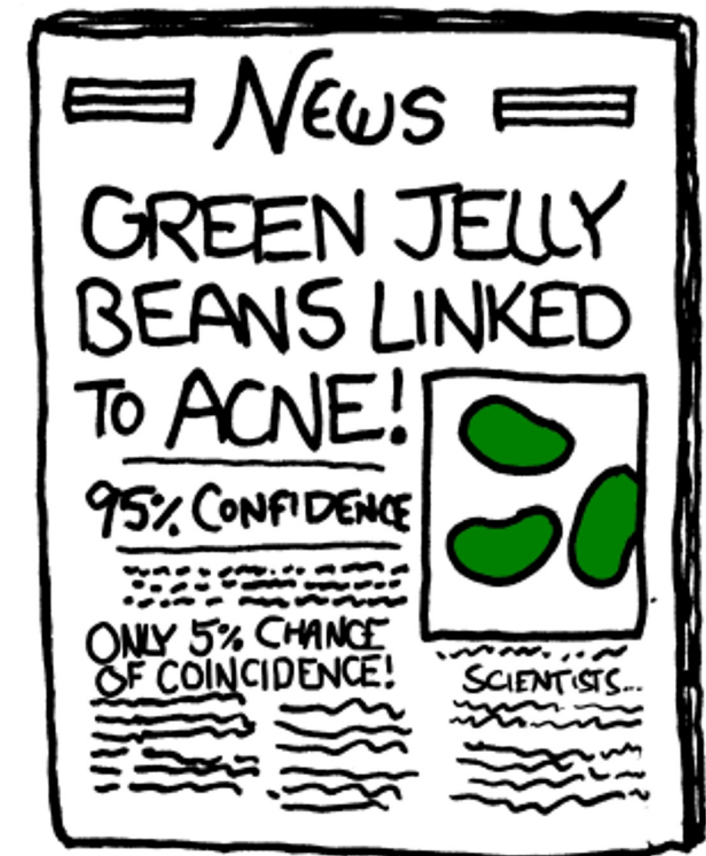
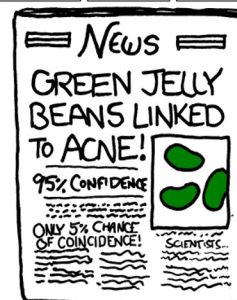
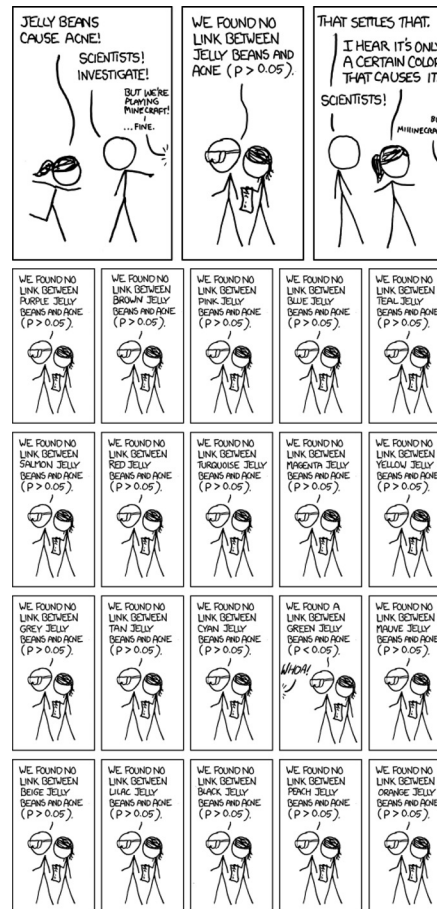
https://en.wikipedia.org/wiki/Negative_binomial_distribution#/media/File:Negbinomial.gif

RNA composition



The high expression of the seed storage LTP in seeds is from just a few genes, skewing RPKM values for the other categories.

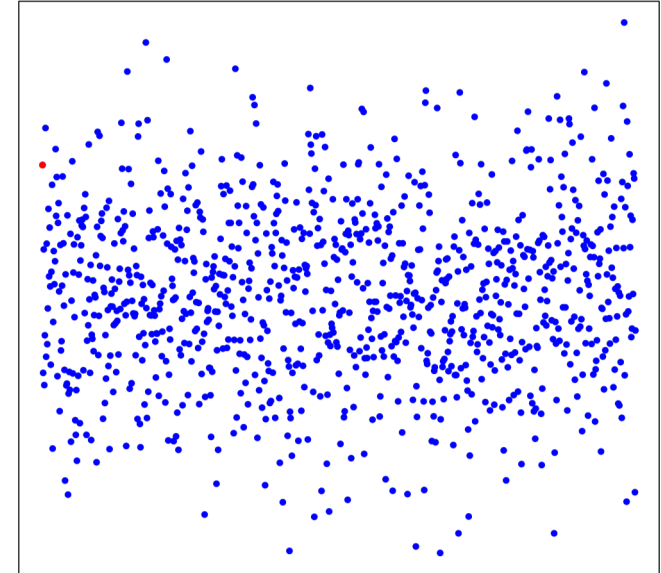
Multiple Hypothesis Correction



Multiple Hypothesis Correction

- Family Wise Error

- Bonferroni
- Probability of a single false positive



- False Discovery Rate

- Benjamini Hochberg
- Expected fraction of false positives in total positives

