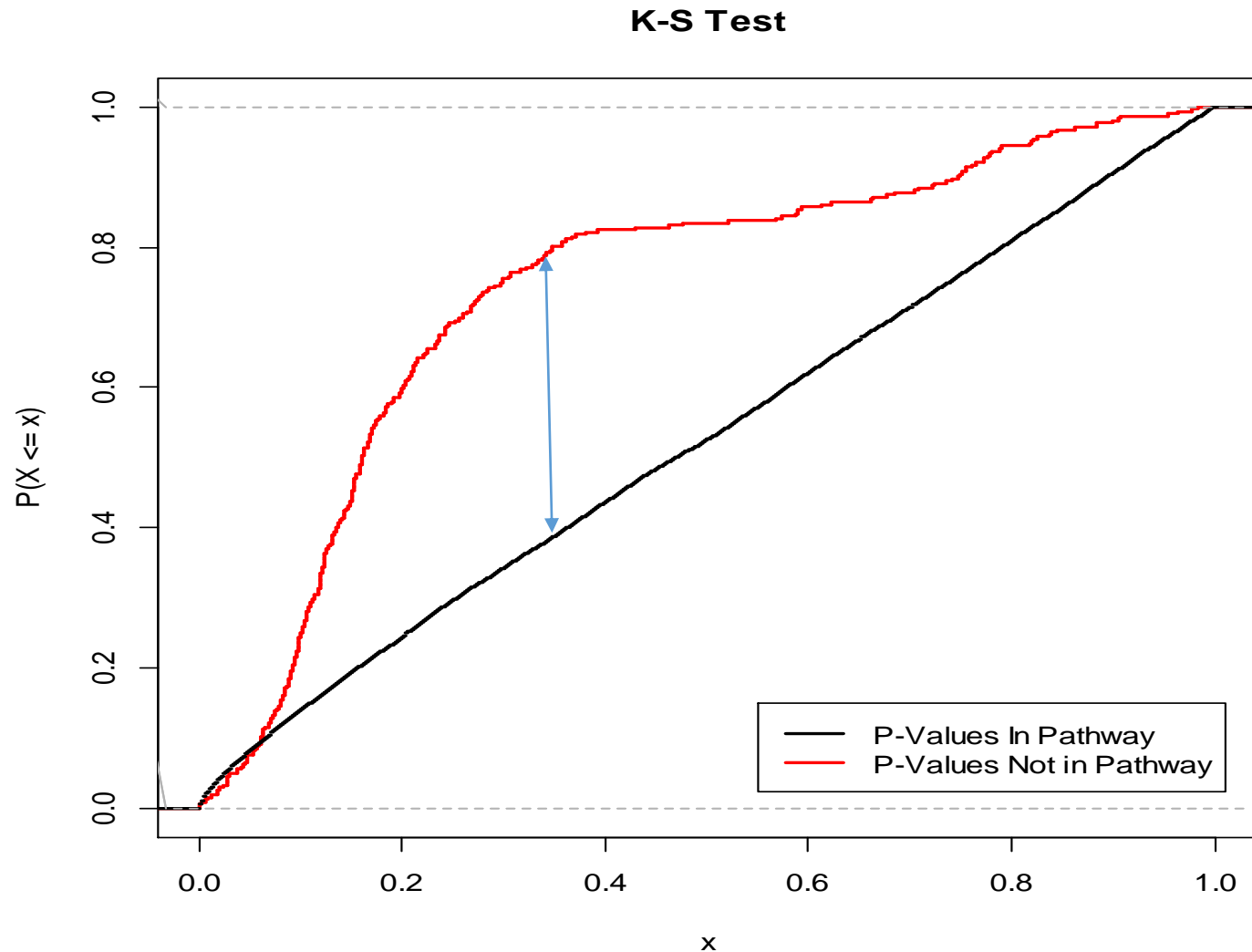


Some Statistical Tests Used in Enrichment Analysis

Kolmogorov-Smirnov Test

- Tests if max difference between 2 distributions is bigger than expected by chance
- For enrichment: Use distribution of p-values (or fold changes) in and out of pathway/term



Wilcoxon Rank-Sum Test

- Compares distribution of a continuous variable between two groups
- Non-parametric test based on ranks
 - Non-parametric analogue of two-sample t-test
- More powerful than K-S test

Fisher's Exact Test

- Tests for association between two categorical variables
- Are there more DE genes in the pathway than would be expected by chance?
- Sig/not sig dichotomy a problem with too few (or too many) DE genes

# Genes	Significant	Not Significant
In Pathway	279	23
Not In Pathway	19,025	1,694