



**Figure 3 - figure supplement 1. Universality at taxonomic levels higher than ASV.** The plot in (A) shows the median absolute value of each family/order/class pair's correlation coefficient across hosts as a function of correlation consistency, measured as the proportion of hosts that shared the majority correlation sign (positive or negative; taxon pairs that were positively correlated in half of the 56 hosts have a consistency of 0.5; pairs that were positively [or negatively] correlated in all hosts have a consistency of 1.0). Panel (B) plots the same estimates for phylum-phyllum pairs. Multiplying the two axes in panels (A) and (B) creates a universality score reflecting the strength and consistency of pairwise microbial correlations across hosts. Universality score distributions for family/order/class pairs are shown in panel (C) and scores for phylum pairs are shown in panel (D).