[XGBoost] Hypergeometric test: Collapsing analysis vs mantis-ml predictions v-AURORA-CUMC-all\_dom\_ultrarare\_OO vs shuffle p-value:2.387123173081084e-296 >> Focusing on significant area only: v-AURORA-CUMC-all\_dom\_ultrarare\_OO -- area: 1502.77 i-all\_AURORA\_dom\_rare\_syn -- area: 94.31 i-all\_AURORA\_dom\_rare\_missense -- area. 0.0 v-AURORA-CUMC-all dom rare syn -- area: 406.47 shuffle -- area: 0.0 > primary / synonymous ratio: 3.7 > primary / shuffle ratio: NA 50 >> Entire area: v-AURORA-CUMC-all\_dom\_ultrarare\_00 -- area: 2197.13 i-all\_AURORA\_dom\_rare\_syn -- area 643.6 i-all\_AURORA\_dom\_rare\_missense + area: 239.87 v-AŪRORA-CŪMC-all dom rare syn -- area: 1070.65 shuffle -- area:  $126.\overline{6}6$ Phred score from hypergeometric test (significance increasing in positive direction)  $\overset{\bowtie}{\triangleright}$ > primary / synonymous ratio: 2.05 > primary / shuffle ratio: 17.35 10 -40 60 70 80 10 20 30 Top 5.0% mantis-ml predicted genes

