

Figure 1: Box and whisker plot of CRNN (left) and OSM (right) values in 25 asthma and 26 COPD patients. No significant difference was observed between patient groups in which Student's $t=0.29$, $p=0.77$ was obtained for CRNN and Student's $t=1.65$, $p=0.11$ was obtained for OSM between asthma and COPD patient groups, ($t_{critical}=2.01$).

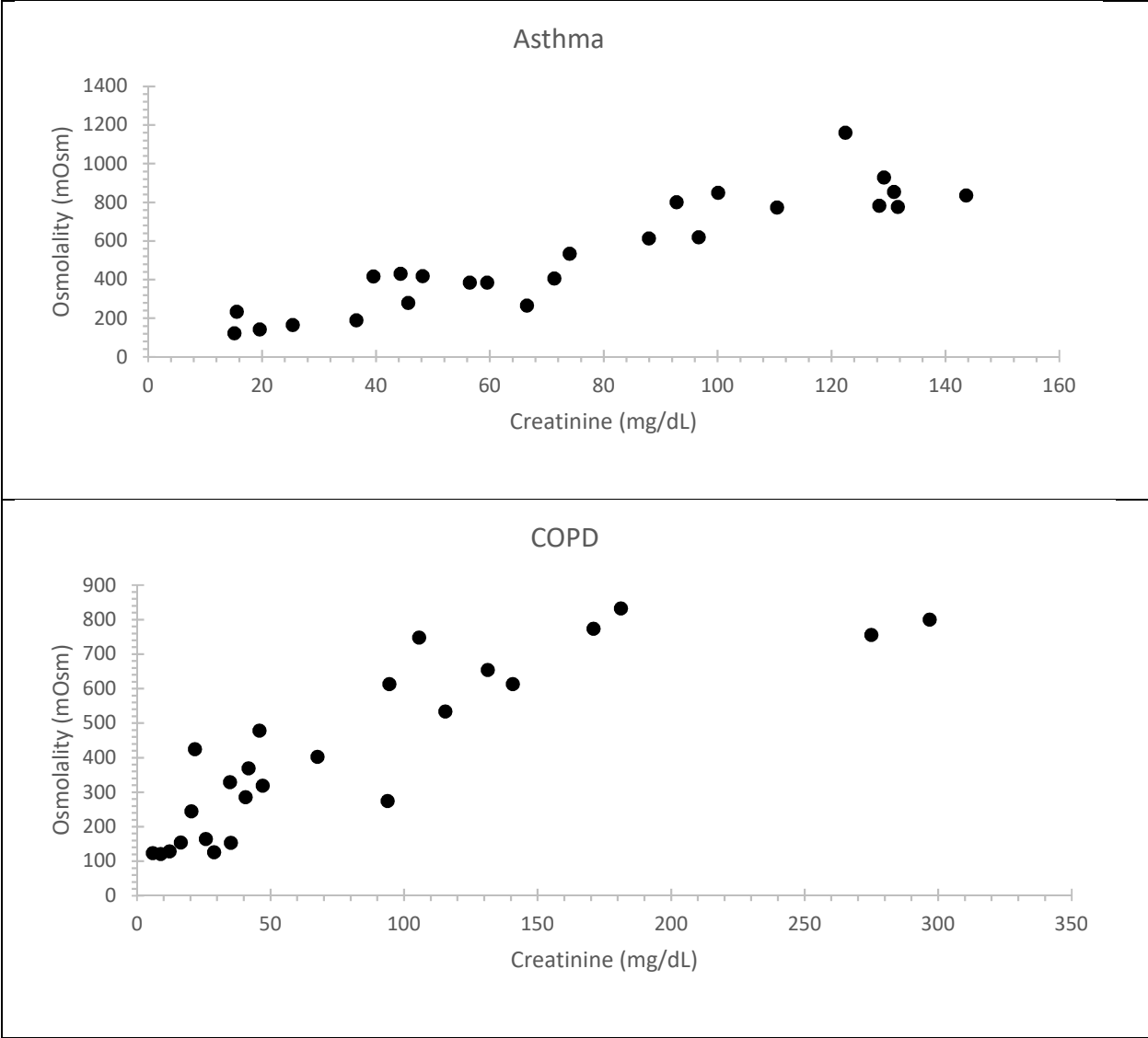


Figure 2: correlation between OSM and CRNN in asthma, n=25 (top) and COPD, n=26 (bottom) patients.

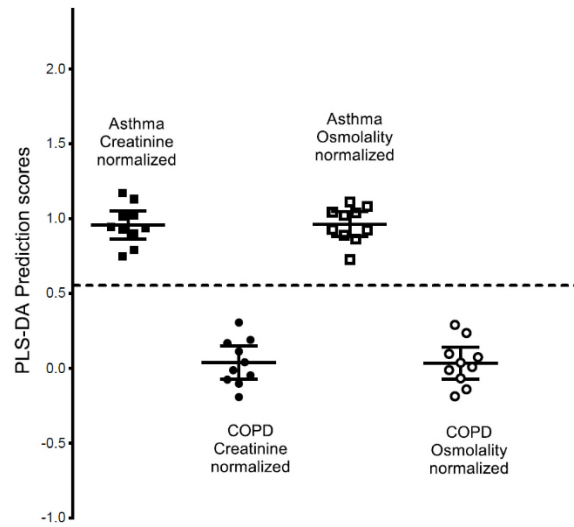


Figure 3. PLS-DA prediction scores for each subject, with error bars representing medians and interquartile ranges. The PLS-DA algorithm separates groups of data based on a score of 0 to 1. In this case a value of greater than 0.5 indicates the subject has asthma, whereas a value of less than 0.5 indicates the subject has COPD.

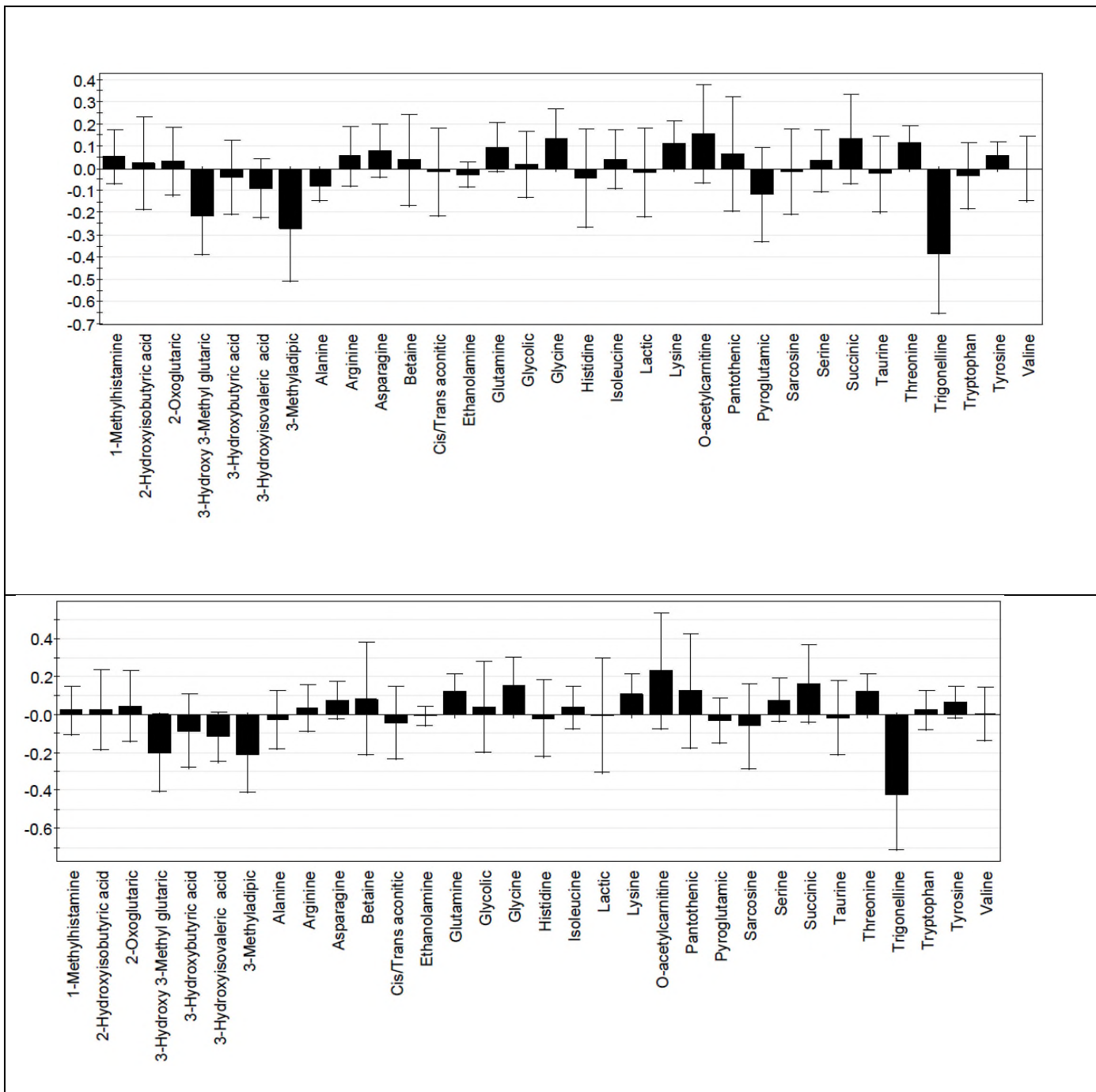


Figure 4. Coefficient of variation plots for metabolite differences between asthma and COPD patients as generated from CRNN normalized model (top) or OSM normalized model (bottom). Metabolite levels that were higher in patients with COPD are shown with bars rising above zero, whereas levels that were higher in asthmatic patients are less than zero.