## Significant metadata correlation heatmap Family FDR-values: < 0.001 = \*\*\*, < 0.01 = \*\*, < 0.1 = \* ASV301 Erysipelatoclostridiaceae - • [Eubacterium] coprostanoligenes group ÁSV203 Frisingicoccus - • ASV16 Bifidobacterium - • Anaerofustaceae ASV772 Butvricicoccus - • Bacteroidaceae ASV10 Ruminococcus - • ASV335 Clostridia vadinBB60 group - • ASV324 Defluviitaleaceae UCG-011 - • Bifidobacteriaceae ASV274 Ruminococcaceae - • Butyricicoccaceae ASV49 [Eubacterium] coprostanoligenes group - • ASV1 Muribaculaceae - • Christensenellaceae ASV242 Erysipelatoclostridium - • ASV147 Lachnoclostridium - • Effect size Clostridiaceae ASV139 Lachnospiraceae UCG-006 - • ASV196 UBA1819 - • Defluviitaleaceae ASV428 Pygmaiobacter - • 0.5 ASV223 Dorea - • Enterobacteriaceae ASV355 Marvinbryantia - • 0.0 Feature Value ASV105 Bacteroides - • Enterococcaceae ASV73 Anaerostipes - • Erysipelatoclostridiaceae ASV36 NK4A214 group --0.5ASV665 Anaerofustis - • Erysipelotrichaceae ASV313 Paludicola -ASV200 Parasutterella - • Lachnospiraceae ASV157 Parabacteroides - • ASV538 A2 - • Monoglobaceae status ASV334 Erysipelotrichaceae - • ASV524 Christensenellaceae R-7 group - • Muribaculaceae Confounded ASV512 Enterococcus - • ASV326 Gastranaerophilales - • Oscillospiraceae Deconfounded ASV72 [Eubacterium] siraeum group - • ASV44 Roseburia - • Peptostreptococcaceae ASV2 Lachnospiraceae NK4A136 group - • Ruminococcaceae ASV468 Candidatus Saccharimonas - • ASV35 Clostridium sensu stricto 1 - • Saccharimonadaceae ASV31 Clostridia UCG-014 - • ASV509 Escherichia-Shigella - • Staphylococcaceae ASV399 Monoglobus - • ASV24 Romboutsia - • Sutterellaceae ASV328 Clostridia - • ASV28 Jeotgalicoccus - • \* Tannerellaceae ASV100 Oscillibacter - • NA **SCFAs** ognitive tes Family Treatments rtokines bra Memb. receptors Family SCFA\_BA NR2B CCL20

SCFA

Variables