

**Supplemental Figure 1.** Significant β-diversity plots according to Gender.



**Supplemental Figure 2.** Significant β-diversity plots according to Ventilator days and ARDS.



**Supplemental Figure 3.** Significant β-diversity plots according to hospital length of stay (LOS).



**Supplemental Figure 4.** Significant β-diversity plots according to ICU length of stay (LOS).



**Supplemental Figure 5.** Significant β-diversity plots according to infection.



**Supplemental Figure 6.** Significant changes in phylogeny within the phylum Firmicutes.



**Supplemental Figure 7.** Significant changes in phylogeny within the phylum Bacteroidetes.



**Supplemental Figure 8.** Significant changes in phylogeny within the phylum Actinobacteria .



**Supplemental Figure 9.** Significant changes in phylogeny within the phylum Proteobacteria.