S4 Table: Bacterial Species Principle Components Coefficients

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| Bacterial Species | Bacterial Species Principle Components Coefficients |
| PCA1 | PCA2 | PCA3 |
| s\_\_luteciae | 0.952825 |  |  |
| s\_\_cibaria | 0.950993 |  |  |
| s\_\_casseliflavus | 0.923926 |  |  |
| s\_\_mesenteroides | 0.922616 |  |  |
| s\_\_parainfluenzae | 0.920215 |  |  |
| s\_\_gnavus | 0.918032 |  |  |
| s\_\_alactolyticus | 0.871602 |  |  |
| s\_\_agglomerans | 0.854506 |  |  |
| s\_\_ananatis | 0.845408 |  |  |
| s\_\_dispersa | 0.845408 |  |  |
| s\_\_cinerea | 0.845408 |  |  |
| s\_\_butyricum | 0.845408 |  |  |
| s\_\_fimetarium | 0.845408 |  |  |
| s\_\_dentocariosa | 0.817589 |  |  |
| s\_\_bifidum | 0.776184 |  |  |
| s\_\_durum | 0.734441 |  |  |
| s\_\_obeum | 0.704061 |  |  |
| s\_\_pullicaecorum | 0.700108 |  |  |
| s\_\_morganii | 0.661069 |  |  |
| s\_\_faecis | 0.630959 |  |  |
| s\_\_mucilaginosa | 0.539918 |  | -0.38403 |
| s\_\_longum | 0.520077 |  |  |
| s\_\_cloacae | 0.48945 | 0.31237 |  |
| s\_\_denitrificans | 0.475163 |  |  |
| s\_\_prausnitzii | -0.37006 |  |  |
| s\_\_rimae |  | 0.971004 |  |
| s\_\_hyovaginalis |  | 0.961437 |  |
| s\_\_p-3329-23G2 |  | 0.95203 |  |
| s\_\_anginosus |  | 0.949608 |  |
| s\_\_aeria |  | 0.946186 |  |
| s\_\_cylindroides |  | 0.946186 |  |
| s\_\_agalactiae |  | 0.946186 |  |
| s\_\_multacida |  | 0.946186 |  |
| s\_\_gauvreauii |  | 0.936589 |  |
| s\_\_aerofaciens |  | 0.934619 |  |
| s\_\_infantis |  | 0.930717 |  |
| s\_\_balaenopterae |  | 0.907795 |  |
| s\_\_biforme |  | 0.906626 |  |
| s\_\_mitsuokai |  | 0.80613 | -0.41214 |
| s\_\_equi |  | 0.798263 |  |
| s\_\_difficile |  | 0.640695 |  |
| s\_\_formatexigens |  | 0.542348 | -0.52125 |
| s\_\_formicigenerans |  | 0.41538 |  |
| s\_\_torques |  | 0.392751 |  |
| s\_\_stercorea |  |  | -0.70203 |
| s\_\_saccharogumia | 0.435606 |  | 0.668527 |
| s\_\_reuteri |  |  | 0.661372 |
| s\_\_p-1630-c5 |  |  | -0.65258 |
| s\_\_peoriensis |  |  | -0.65059 |
| s\_\_ovatus |  |  | 0.627818 |
| s\_\_cocleatum |  |  | 0.603912 |
| s\_\_subflava |  |  | -0.60325 |
| s\_\_catus |  |  | -0.6025 |
| s\_\_sardiniense |  |  | 0.595831 |
| s\_\_coprophilus |  |  | 0.584919 |
| s\_\_copri |  |  | -0.58026 |
| s\_\_satelles |  |  | 0.569416 |
| s\_\_moorei |  |  | 0.567302 |
| s\_\_parvula |  |  | 0.567169 |
| s\_\_callidus |  |  | -0.53342 |
| s\_\_anaerobius |  |  | 0.531597 |
| s\_\_hydrophila |  |  | -0.51935 |
| s\_\_sphaeroides |  |  | -0.51935 |
| s\_\_cereus |  |  | -0.51102 |
| s\_\_zeae |  |  | 0.505869 |
| s\_\_perfringens |  |  | 0.50028 |
| s\_\_segnis | 0.486932 |  | -0.48971 |
| s\_\_acidifaciens |  |  | 0.45702 |
| s\_\_fetus |  |  | -0.43759 |
| s\_\_citroniae |  |  | 0.404483 |
| s\_\_eggerthii |  |  | 0.389663 |
| s\_\_uniformis |  |  | 0.379727 |
| s\_\_formigenes |  |  | -0.36548 |
| s\_\_eutactus |  |  | -0.34352 |
| s\_\_hathewayi |  |  | -0.34277 |
| s\_\_noxia |  |  | -0.34175 |
| s\_\_dolichum |  |  | 0.334431 |