



**Figure 5 – figure supplement 3. PCA plot of ASV-ASV correlations within age bins for a select set of hosts.** For a subset of hosts with sufficient sampling across age "bins" (at least 35 samples within two of the following age ranges: juvenile = 0-6 years; prime age adult = 6-13 years; older adult = 13+ years), ASV-ASV correlation is visualized along principal components. Circles indicate the set of correlation estimates for a particular host within a particular age bin. Circles in panel (A) refer to "juvenile" and "prime age" hosts in orange and green; panel (B) refers to "prime age" and older adults in light and dark green. Estimates across age bins (e.g. juvenile vs. prime age) for the same host are linked by a gray line. Diamonds indicate the centroid for each age bin. For the juvenile vs. prime age comparison in panel A, the ASV pair contributing most strongly to variation along PC1 was a genus *Libanicoccus*-genus *Bifidobacterium* pair (ASV16-ASV58). The pair contributing most strongly to placement along PC2 was a genus *Lactobacillus*-order *Clostridiales* pair (ASV22-ASV36). In the prime age adult vs. older adult embedding in panel B, the ASV pair which contributed the most to variation along PC1 was a genus *Prevotella* 9-unknown bacterium pair (ASV2-ASV40). The pair with the greatest contribution to PC2 was another taxonomically unresolved bacterium (ASV41) in combination with another member of family *Prevotellaceae* (ASV64). ASV pairs with the largest loadings in PCs 1 and 2 for both age ranges are given in **Supplementary file 1i**.