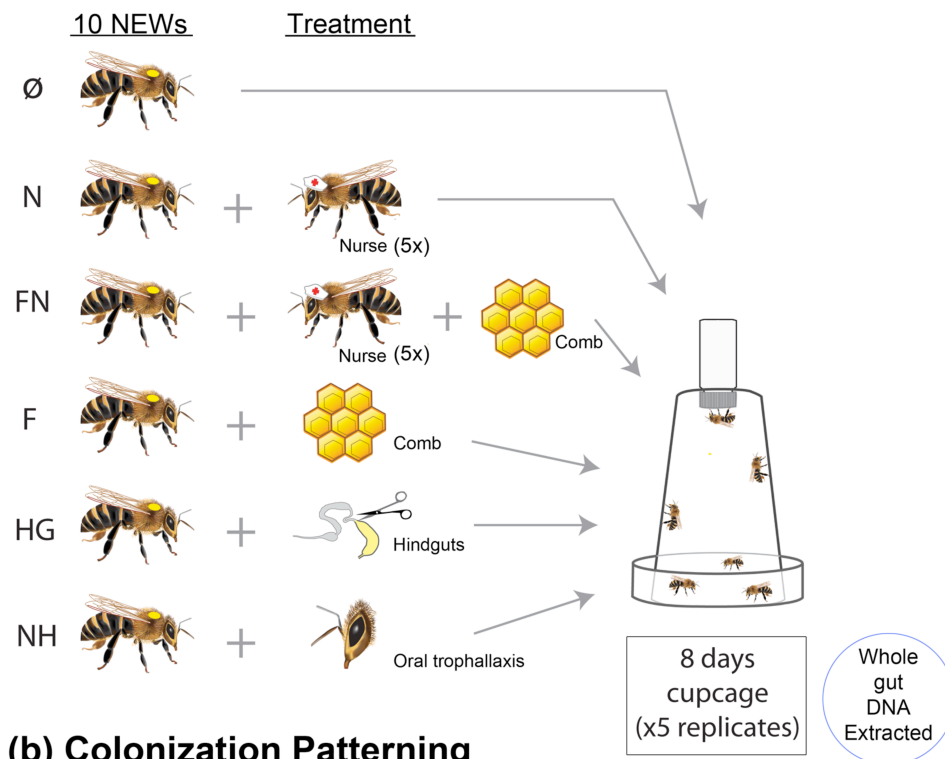


(a) Transmission Route



(b) Colonization Patterning

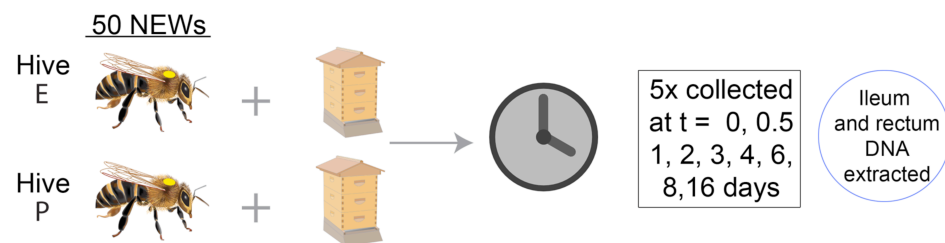


Figure S13(a). Experimental set up. (a) Transmission Route experiment: 10 sterile, newly emerged *Apis mellifera* workers were placed in cup cages with sterile bee bread and sugar water alone (\emptyset), with 5 nurse bees (N), 5 nurse bees + 2.5 cm x 2.5 cm section of comb containing honey and bee bread (FN), 2.5 cm x 2.5 cm section of comb material alone (F), homogenized hind gut material simulating feces (HG), 5 nurse bees with only their head available for oral trophallaxis (NH). Seven replicates of each were initially set up and maintained for 8 days. Whole gut samples were dissected from 5 bees from 5 of the replicates. (b) Colonization experiment: Bees were allowed to emerge from brood frames from two hives (Hive E and Hive P) in a growth chamber, marked and placed back in the hive. Samples of 5 bees from each hive were retrieved at t=0d, 0.5d, 1d, 2d, 3d, 4d, 6d, 8d, and 16d. Ileums and rectums were dissected and DNA was prepared separately.

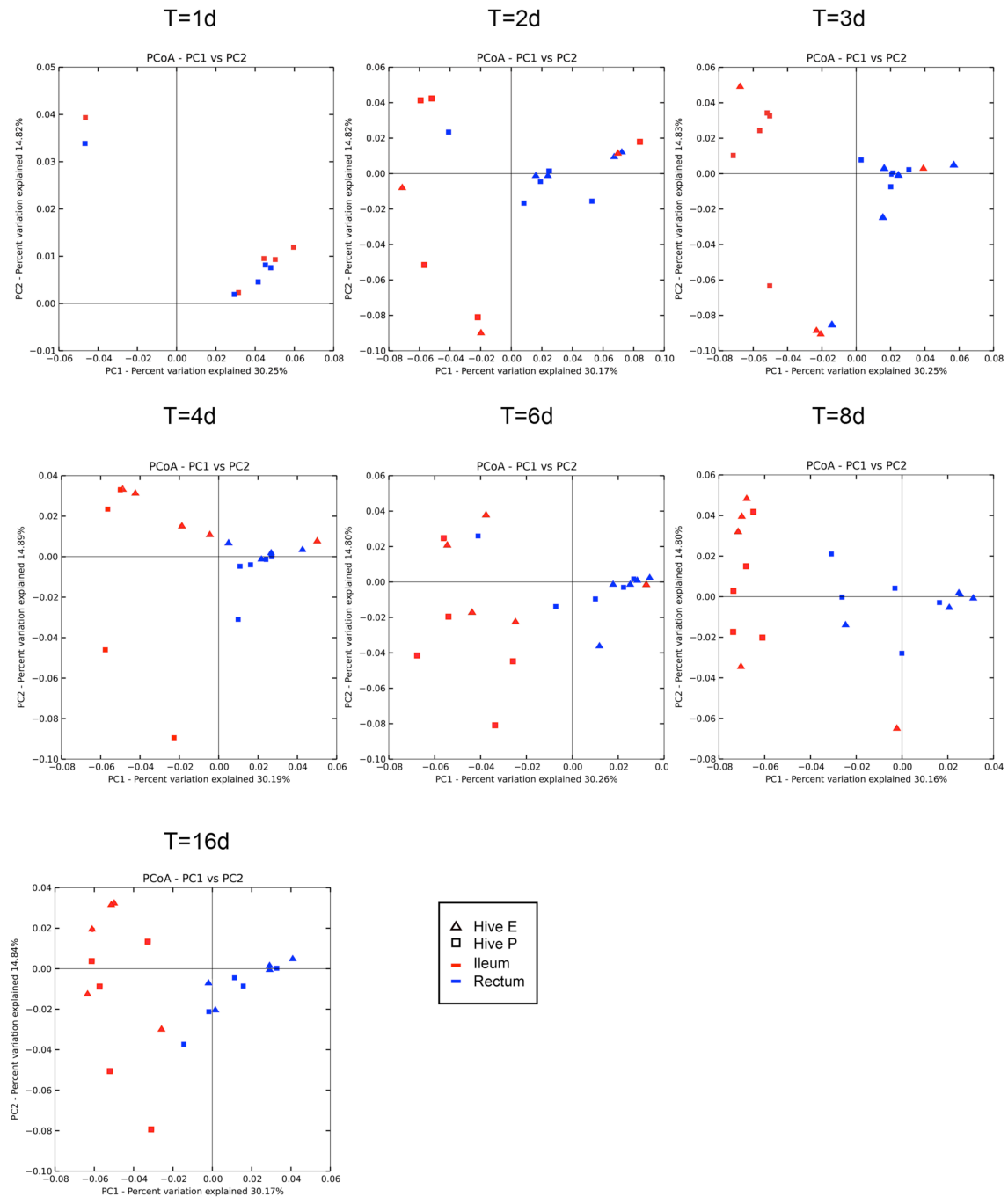


Figure SI3(b): Jackknifed weighted UniFrac PCoA plots of colonization pattern samples calculated at an even depth of 3500 reads. Ileum and rectum samples are statistically distinct by day 3 and distance is strongly significant for the 8 and 16 day samplings (see table SI2(f) for results of multivariate statistical tests (Adonis, PERMANOVA) based on organ).