



**Figure S4:** Diagnostic plots of the best linear mixed models for regression analyses with pathogen colonization as dependent variable, and experiment and box random intercepts and slopes for the box as random effects. A. Overall Mini5SynCom commensal colonization as fixed effect. B-C. Evenness of Mini5SynComs as fixed effect. B. For communities with no ambiguous abundances. C. For communities with no ambiguous abundances and no strain below level of detection. D-E. Weighted mean pairwise distances of Mini5SynComs as fixed effect. D. For communities with no ambiguous abundances. E. For communities with no ambiguous abundances and no strain below level of detection. F-G. Faith's phylogenetic distance as fixed effect. F. For all communities (calculation on inoculum composition). G. For communities with no ambiguous abundances and no strain below level of detection.