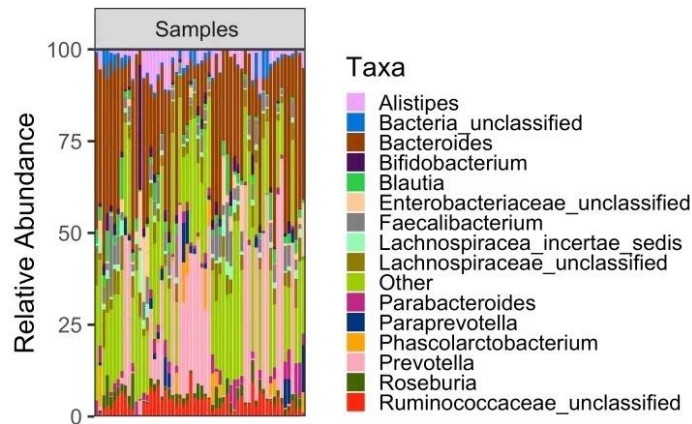
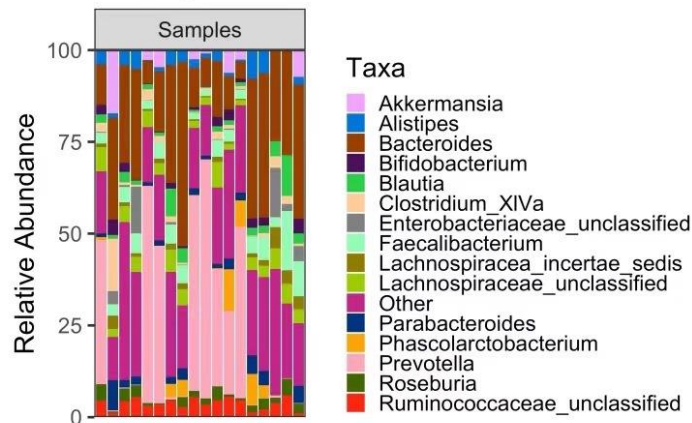


Supplementary Figure S1. Bar charts of gut bacterial communities for each participant. A. All participants. B. Participants with BMI < 25. C. Participants with BMI > 25.

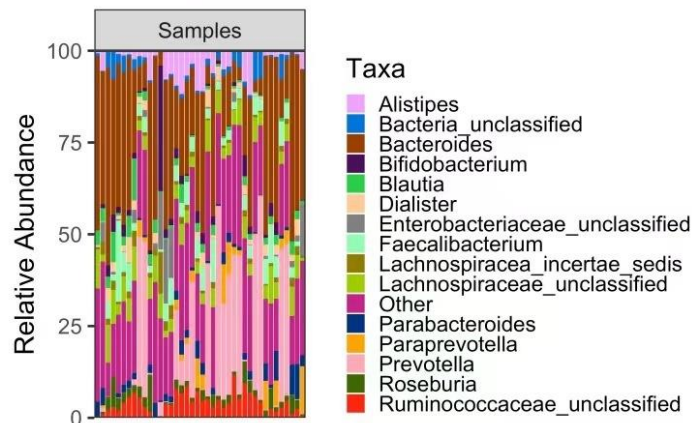
A. All Participants



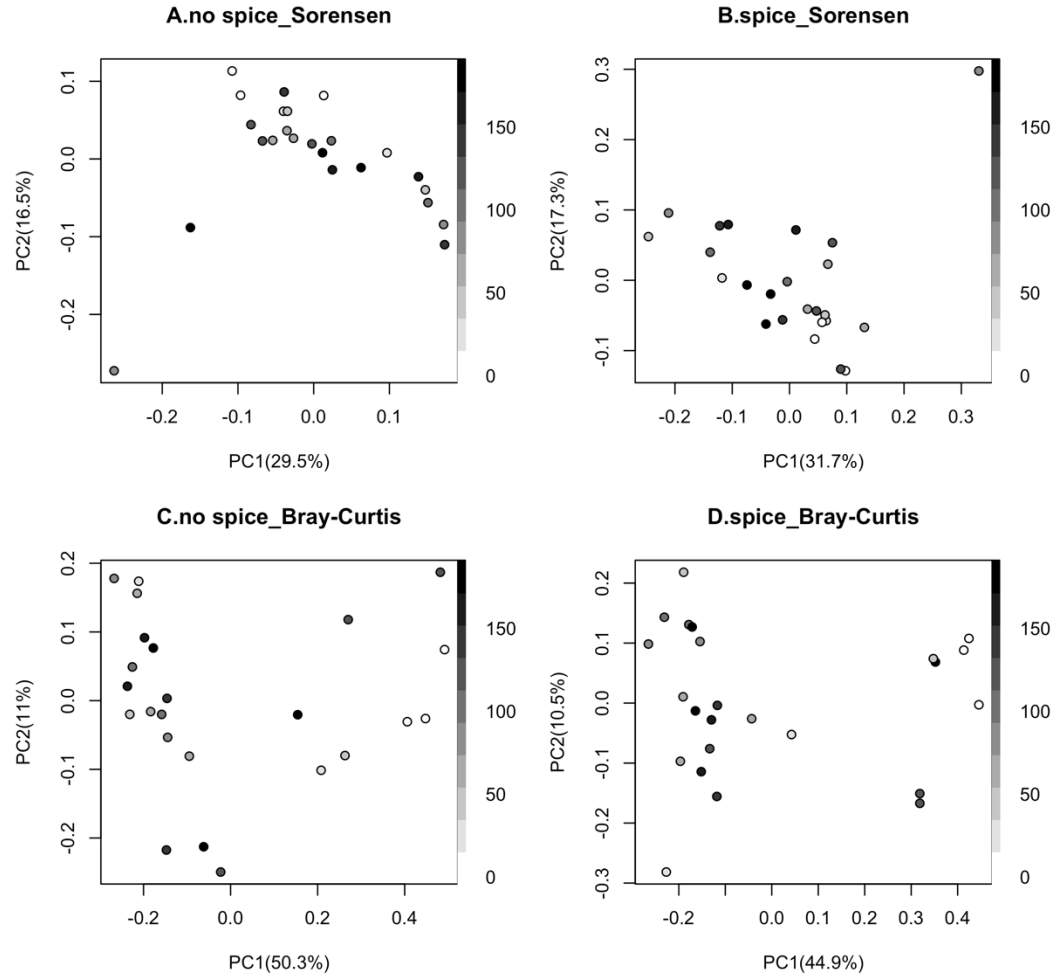
B. Participants with BMI < 25



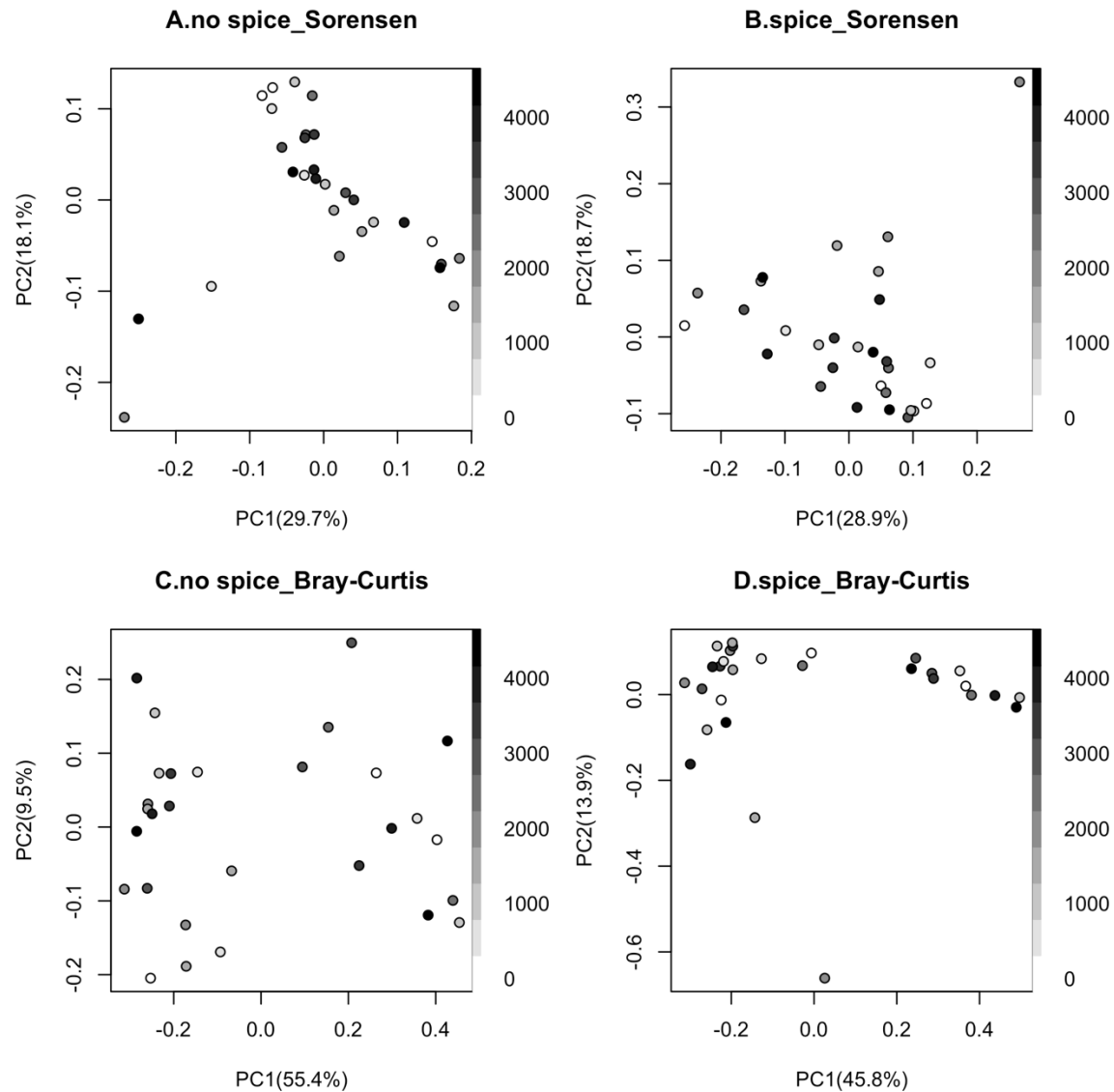
C. Participants with BMI > 25



Supplementary Figure S2. Stool lipocalin concentrations were not associated with intestinal bacterial community membership (A, $p=0.49$; B, $p=0.75$) or composition (C, $p=0.26$; D, $p=0.39$). The gradient on the right of each plot indicates the lipocalin concentration in ng/mL. The darker the circle the higher the lipocalin concentration.



Supplementary Figure S3. Stool calprotectin concentrations were not associated with intestinal bacterial community membership (A, $p=0.42$; B, $p=0.84$) or composition (C, $p=0.72$; D, $p=0.79$). The gradient on the right of each plot indicates the calprotectin concentration in ng/mL. The darker the circle the higher the calprotectin concentration.



Supplementary Table S1. Alpha diversity of the gastrointestinal bacterial communities by clustering those with similarly responsive gut microbiota to cayenne pepper.

| | | With spice | Without spice | p-value |
|------------|-----------------|------------|---------------|---------|
| Set1 (n=9) | Chao1 | 108.3 ± 64 | 100 ± 36.6 | 0.91 |
| | Shannon | 2.5 ± 0.4 | 2.5 ± 0.4 | 0.91 |
| | Inverse Simpson | 6.2 ± 2.8 | 6.5 ± 3.6 | 1.0 |
| Set2 (n=7) | Chao1 | 80.7 ± 19 | 92.7 ± 44.8 | 0.81 |
| | Shannon | 2.3 ± 0.3 | 2.5 ± 0.2 | 0.33 |
| | Inverse Simpson | 5.2 ± 2.1 | 5.8 ± 1.5 | 0.51 |

Data presented as mean±SD.