



Figure 5: Conceptual representation of biogeochemical changes during a coral bleaching event. Bleaching progresses from left to right, with SST values increasing until their peak and then return to ambient values. Corals experience a change in physiological state and symbiont densities through the thermal anomaly, going from “Healthy” to “Thermal Stress Onset” to “Peak Bleaching” and lastly, “Recovering”. The associated treatment names from our experiment are written below the corals. Symbiont densities for each treatment are plotted with temperature, with densities decreasing through “Peak Bleaching” and then increasing slightly in “Recovering.” Densities were derived from data presented in Figure 1D. DOM flux is highest at “Thermal Stress Onset”, indicated by the size of the arrows pointing from corals to “DOM”. In all 3 of the stressed treatments, bacterioplankton communities shift towards a “microbialized” state marked by increased cell counts (indicated by the size of the arrow pointing towards the pie chart) and a greater relative abundance of copiotrophs and pathogens, namely in the Alteromonadaceae, Pseudoalteromonadaceae, and Flavobacteriaceae families. We propose that these microbialized communities derived from stressed coral DOM exudates further harm the corals via hypoxia from increased bacterial loads and disease from the uptick in bacterial pathogens. The state of microbialization is most pronounced at the onset of thermal stress, may push corals towards more severe bleaching and ultimately, mortality.