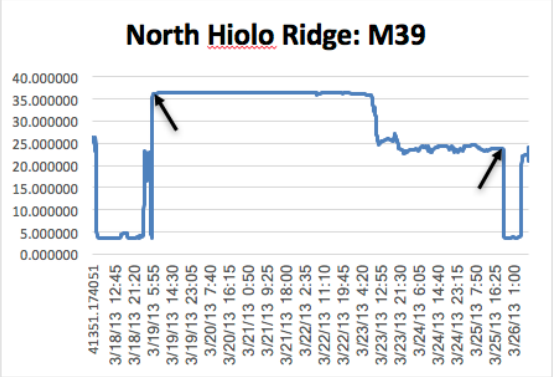
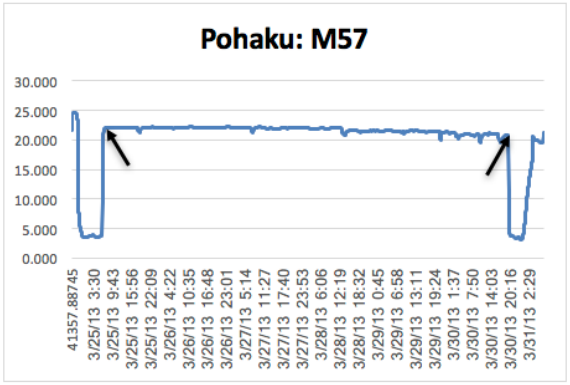
Supplemental Figures.

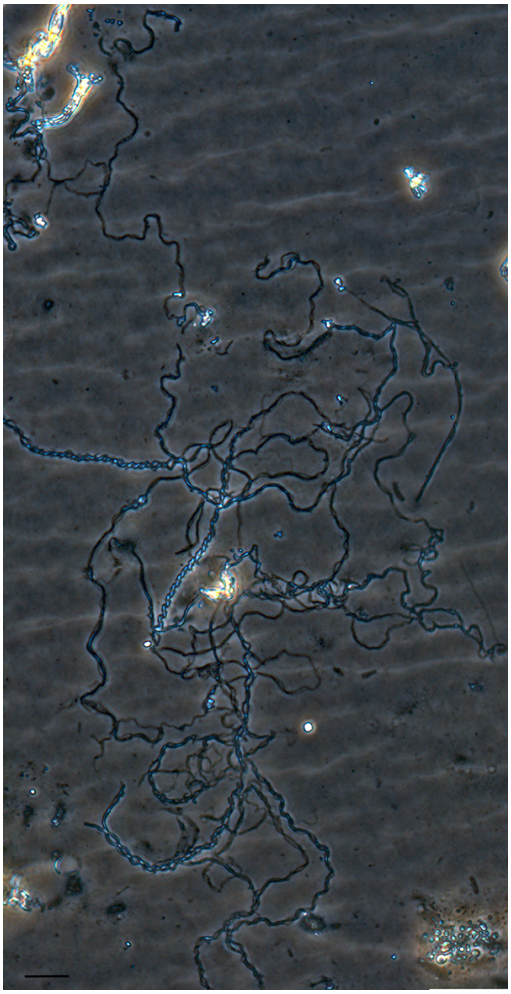
Supplemental Fig. 1
An image showing the placement of in-situ incubation chambers (1,2,6, and 7) on diffuse vents associated with NHR.

Supplementary Fig. 2
Temperature graphs from the MTRs placed at NHR and Pohaku. The arrows denote time of deployment and recovery.



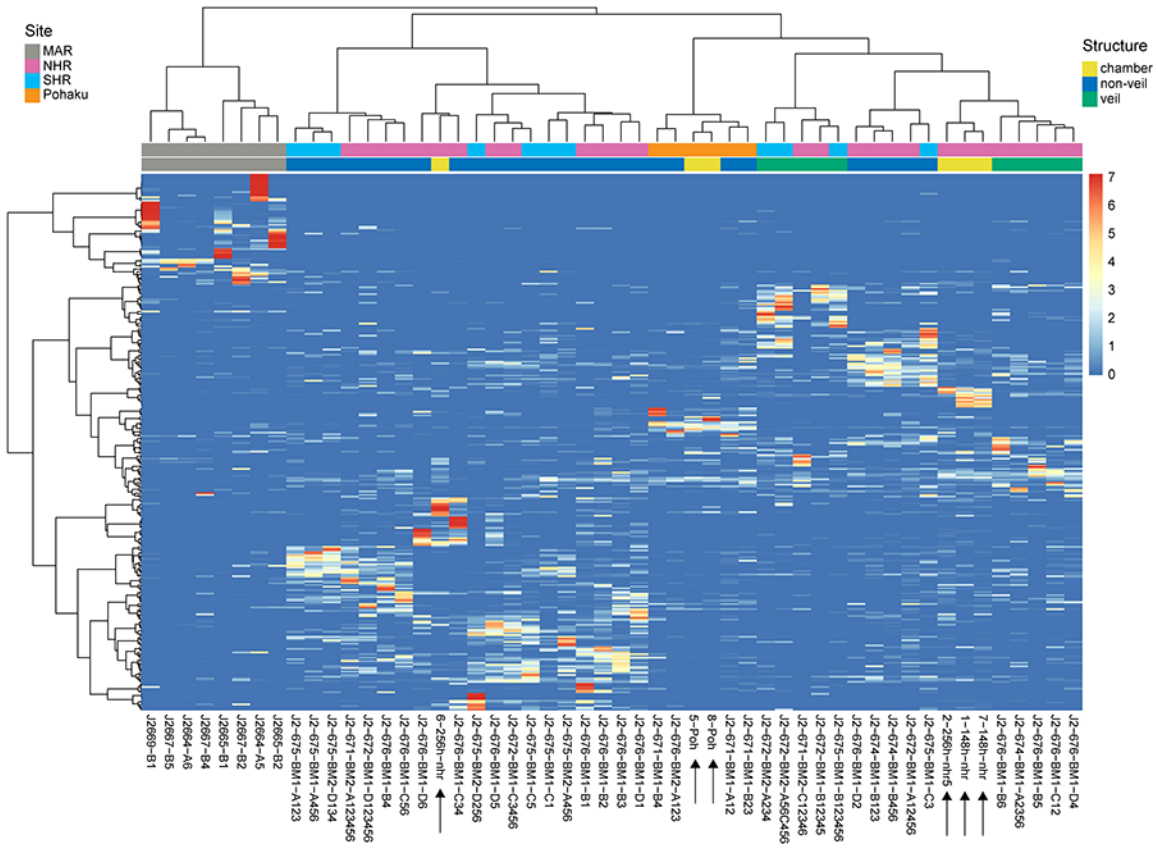


Supplemental Fig. 3
A photomosaic from an *in situ* microscope slide of filamentous stalk formation. This represents colonization events by several individual stalk-forming cells. The marker bar = 10 µm.

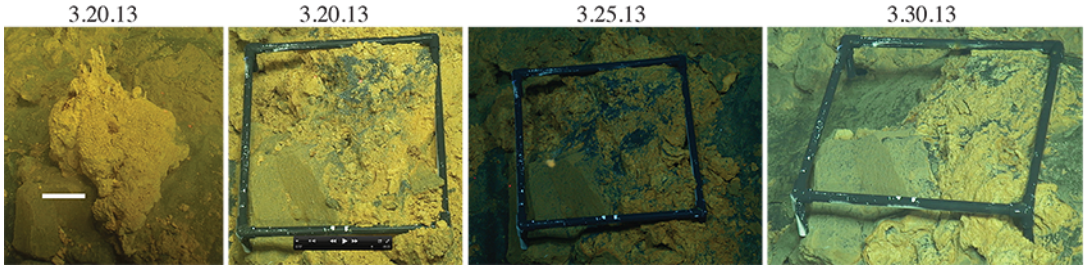
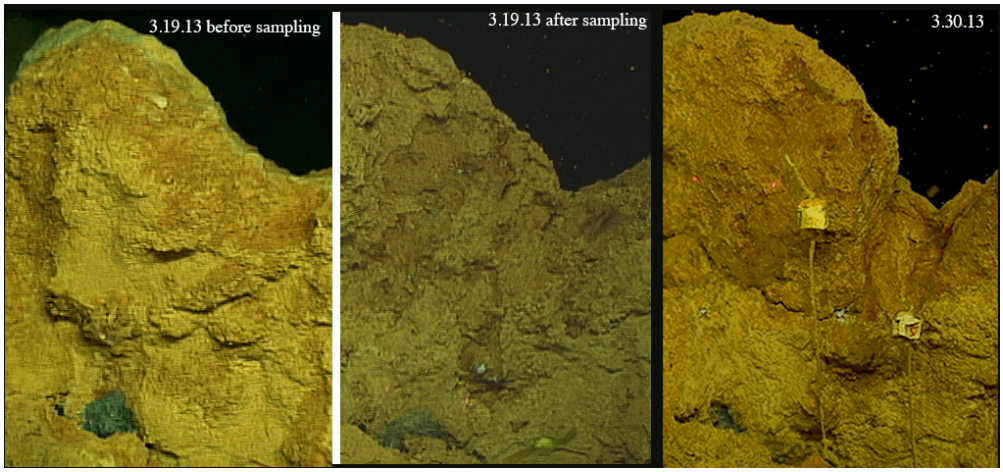


Supplemental Fig. 4

Supplemental Fig. 4. MED comparison of the total bacterial community composition of the different chambers with 49 iron mat samples collected from different vents at Loihi or from the MAR. The yellow colored panels (top) and arrows (bottom) indicate chambers. The data from other vent sites is taken from Scott *et al* 2016.



Supplemental Fig. 5
Mat removal experiment, a beehive shaped iron mat, left panel, had a black frame placed around it and the mat was removed using the large suction sampler on the ROV *Jason,* and then monitored for 10d. During this time there was little re-growth of the mat. The white bar in the left hand panel = 10 cm, the black frame is approximately 40 cm on each side.



Supplemental Fig. 6
Before and after images from mat sampling on NHR. The left hand panel was taken just prior to sampling with the large suction sampler on ROV *Jason* on 3/19/13, and the right hand image was taken 11d later. A primary vent orifice can be seen as the gray-colored mineral near the bottom of the left hand image. The white circle denotes the approximate sampling area, note there does not appear to be obvious regrowth of the mat during this time.