Supplementary Video Information

These videos are clips of experimental data with a sample of highlighted trajectories. **Supplementary Video 1** is for *Paenibacillus* at 1µl/h; **Supplementary Video 2** is for *Geobacter* at 1µl/h; **Supplementary Video 3** is for *Acidovorax* at 1µl/h; **Supplementary Video 4** is for *Paenibacillus* at 5µl/h; **Supplementary Video 5** is for *Geobacter* at 5µl/h; **Supplementary Video 6** is for *Acidovorax* at 5µl/h.

These annotated videos of bacterial trajectories allow us to show our findings visually. At 1µl/h, *Paenibacillus* (**Supplementary Video 1**) have more variability in types of trajectories than the other species do (**Supplementary Videos 2 & 3**). *Paenibacillus* display tendencies for looping trajectories, trajectories that travel diagonally, random trajectories, attached trajectories, and substantial streamline changing. Furthermore, *Paenibacillus* are much more likely to display upstream swimming than either of the twitching species. At 5µl/h, we see a slightly larger amount of pore space exploration and streamline changing for *Paenibacillus* (**Supplementary Video 4**) than for the other species (**Supplementary Videos 5 & 6**), but generally we see that the transport of all three species becomes much more homogeneous at higher flow speeds. This confirms that *Paenibacillus* (swimmers) are still more capable of changing streamlines and resisting the effects of flow at 5ul/h than *Acidovorax* and *Geobacter* (twitchers) are, but that these differences are not enough enough to significantly impact the overall transport at high flow speeds.