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Bacteria Aggregation in a Steady Vortical Flow SHAHRZAD YAZDI, SIXING LI, TONY JUN HUANG, The Pennsylvania State University, AREZOO ARDEKANI, University of Notre Dame — The interaction between microorganisms and flow field is an important, yet complicated topic that affects the design of biological reactors, marine ecological processes, and biofilm formation in porous media. Vortical structures and secondary flows are inherently present in porous media despite small Reynolds numbers. Our experimental results show that bacteria in a steady vortical flow aggregate and subsequently form biofilm streamers in a microfluidic system. The combined effects of shape, motility and the vortical background flow contribute to this fast bacteria aggregation.

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