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Perturbing Streaming in Dictyostelium Discoideum COLIN MCCANN, University of Maryland, PAUL KRIEBEL, CAROLE PARENT, National Institutes of Health, ERIN RERICHA, WOLFGANG LOSERT, University of Maryland — Upon starvation the social amoebae *Dictyostelium discoideum* aggregate to form multicellular organisms. During the transition from single cells to full aggregates, cells relay the chemotactic signal, align in a head-to-tail fashion, and follow each other in streams. To gain more insight into streaming behavior we investigated its robustness by perturbing the strength of the relayed chemoattractant. We measured the effects of plating the cells at varying densities, placing them in excess extracellular fluid thereby diluting cell-cell signals, or directly mixing up the local external fluid using ultrasound-induced bubble-driven flow. We compared wild type cells to cells devoid of signal relay and measured how streaming affects cell speed, directionality, and extent of directed migration. Results will be discussed and a model describing our findings will be presented.

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