

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

When Cells Collide: A Model for Cell-Assisted Cell Growth based on Direct Contacts CARL FRANCK, WUI IP, ALBERT BAE, NATHAN FRANCK, ELIJAH BOGART, THANH BINH THI LE, Cornell University — Although intercellular communication is frequently viewed as involving the transport of small molecules through an intracellular fluid medium, biologists have proposed chemical signaling with chemical specificity due to chemical recognition through direct contacts. Considering the collective computation behind the decision of a cell to divide when it senses the presence of a sufficient number of like neighbors, we offer a model for the transition from slow to exponential growth in shaken suspension cell culture of the model eukaryote, *Dictyostelium discoideum*. Besides exploring an elegantly simple example of multicellular life, this discussion might well prove useful in considering the limits of cell culture on small spatial scales as required for contemporary massively parallel biotechnology.

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Date submitted: 04 Mar 2008

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