

**Jocelyn McDonald** 

Faculty Member

Cell Biology / Cell Adhesion & Migration

Kansas State University
Manhattan, KS
USA**Yujun Chen**

Associate Faculty Member

Cell Biology / Cell Adhesion & Migration

Kansas State University
Manhattan, KS
USA

Classified as

Interesting Hypothesis

New Finding

This paper by Li and Wang describes a newly-observed behavior of migrating animal cells, which the authors term "contact following of locomotion (CFL)." The authors engineered micropatterned substrates and placed motile mammalian cells onto various patterns that were designed to stall one cell. This experimental design allowed the authors to observe what happened when a second migrating cell contacted the stalled cell. When the pairs of cells met in a head-to-head fashion, the stalled cell began to migrate, and the cells moved away from each other in the well-known process of contact inhibition of locomotion (CIL). Similarly, when the head of a migrating cell met the tail of a stalled cell, the stalled cell began to migrate. However, in this second type of cell-cell contact, or CFL, the two cells often moved together, with the approaching cell following the preceding cell in a tail-following manner. Moreover, the head of the following cell sustained contact with the tail of the preceding cell. CFL was further observed in multiple mammalian cell lines and in multicellular chains ("trains") of 5-6 cells, suggesting that CFL may be a common behavior of larger groups of migratory cells. The authors further found that blocking the Wnt pathway component Disheveled (Dvl) by small molecule inhibitors disrupted CFL of pairs of cells as well as multicellular trains, indicating that coordination of CFL is dependent on Wnt signaling. Overall, the tail-following behavior shown in this paper is a promising new mechanism to help explain the coordination of cell-cell contacts and migration of cell collectives in general.