1163-92-897 **Yanxiang Zhao*** (yxzhao@email.gwu.edu), 801 22nd St. NW, Phillips Hall room 739, Washington, DC 20052. *Cell motility dependence on adhesive wetting.*

Adhesive cell–substrate interactions are crucial for cell motility and are responsible for the necessary traction that propels cells. These interactions can also change the shape of the cell, analogous to liquid droplet wetting on adhesive substrates. To address how these shape changes affect cell migration and cell speed we model motility using deformable, 2D cross-sections of cells in which adhesion and frictional forces between cell and substrate can be varied separately. Our simulations show that increasing the adhesion results in increased spreading of cells and larger cell speeds. We propose an analytical model which shows that the cell speed is inversely proportional to an effective height of the cell and that increasing this height results in increased internal shear stress. The numerical and analytical results are confirmed in experiments on motile eukaryotic cells. (Received September 13, 2020)