

## Caroline Cencer

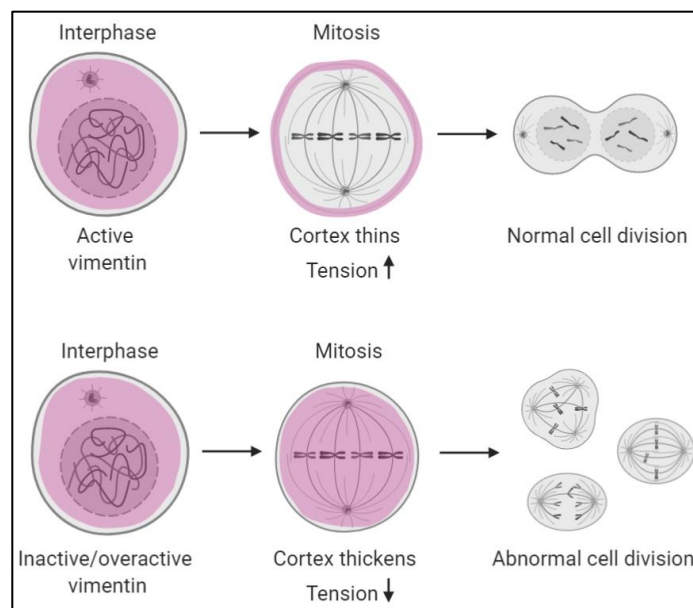
(Graduate Student-Tyska Lab)

# ‘F-Actin Interactome Reveals Vimentin as a Key Regulator of Actin Organization and Cell Mechanics in Mitosis’

Serres et al.

*Developmental Cell*. January 2020, 52, 210-222.e7. <https://doi.org/10.1016/j.devcel.2019.12.011>

Cell-shape control is essential to tissue morphogenesis, cell migration, and cell division. The contractile actomyosin cortex is a key driver of cellular rounding at the start of mitosis. It is unclear, however, how cortical contractility, which creates cell-surface tension to promote rounding, affects actin organization during this process. The authors’ unbiased approach to identify proteins binding F-actin in interphase and mitosis led to vimentin, providing a novel linkage to intermediate-filament control of mitotic actin organization. Vimentin forms a cage-like network at the periphery of the metaphase cell, which decreases cortex thickness and increases cell-surface tension, in a plectin-dependent manner. This study is important because inactive or overactive vimentin, via phosphorylation, leads to abnormal cell division in a confined gel. Interestingly, vimentin is upregulated in some cancers – perhaps vimentin could facilitate cell division in crowded environments involved in cancer proliferation.



**Friday, February 28<sup>th</sup>, 2020**

**3131 MRBIII, 4:00 PM**