

Undergraduate Research and Mentoring in New Biology

**The effects of TNF- $\alpha$  and EGF on epithelial-mesenchymal transition in endometriotic epithelial cells**

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Endometriosis is a female reproductive disease characterized by inflammatory lesions in the peritoneum derived from infiltrating uterine cells. The epithelial-mesenchymal transition (EMT) is an important process in the formation of endometriotic lesions and involves both endometrial and peritoneal cells. A key to understanding EMT is through determining how protein and gene expression change throughout this shift from epithelial to mesenchymal cells. In this project we compare how EGF and TNF- $\alpha$  induce and promote EMT in 12Z endometriotic cell. We also assess the effects of EGF and TNF- $\alpha$  on the expression of cytokeratin 19, an epithelial marker. Finally we analyze changes in gene expression in 12Z cells throughout the process of EMT. Supported by The Undergraduate Research and Mentoring in New Biology program, NSF award #1041233.