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**Caleb Mayer** and **Eric Stachura\*** ([estachur@kennesaw.edu](mailto:estachur@kennesaw.edu)). *Traveling wave solutions for a cancer stem cell invasion model*. Preliminary report.

The study of the dynamics of cellular movement throughout the body has been an area at the forefront of mathematical and biological research in recent years. Understanding the processes inherent to tumor cell movement and migration over time could prove key in better comprehending and finding effective treatments for various cancers.

Despite the importance of the movement of cancer cells, few studies have focused on how more specific populations of cancer cells (as opposed to simply general tumor cell populations) distinctly undertake this invasion. The cancer stem cell (CSC) hypothesis says that the majority of tumor growth is caused by a select sub-population of cancer cells, termed cancer stem cells, which are particularly resistant to the usual treatment strategies. This hypothesis implies that to effectively eliminate tumors and tumor cells, treatment needs to be specifically targeted at CSCs.

In this talk, I will discuss a new model that accounts for the motility of the concentrations of cancer stem cells, differentiated cancer cells, and extracellular matrix within the body. The model is aimed at melanoma cell invasion. This is joint work with Caleb Mayer. (Received September 05, 2018)