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Dr Kandice Tanner joined the National Cancer Institute as a Stadtman Tenure-Track Investigator in 2012, where her research is focused on tumor progression. Using a combination of animal models and biophysical techniques, her lab aims to understand why there can be a latency of several years before detection of metastatic disease. She has been awarded the 2013 National Cancer Institute Director's Intramural Innovation Award, the 2015 NCI Leading Diversity award, 2016 Federal Technology Transfer Award, the 2016 Young Fluorescence Investigator award from the Biophysical Society and named as a Young Innovator in Cellular and Molecular Bioengineering in the Biomedical Engineering Society.

ABSTRACT

Probing the role of tissue biophysics in metastasis

Tumor latency and dormancy are obstacles in effective treatment of cancer. In the event of metastatic disease, emergence of a lesion can occur at varying intervals from diagnosis and in some cases following successful treatment of the primary tumor. Why is there a difference in latency? One missing cue may be the role of tissue biophysics on the infiltrated cells. Here I discuss using optical tweezer based active microrheology to measure tissue mechanics. I further discuss in vitro and in vivo preclinical models such as 3D culture systems and zebrafish in efforts of providing novel targeted therapeutics.