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A Lethal Recipe: How Location, Mutation, and Chromatin Collude to Sustain Metastatic Tumors

Metastatic disease – the growth of tumors beyond their original location – causes 90% of cancer-related deaths. Metastasis often involves the colonization of multiple organs, each of which poses distinct challenges for tumor cells to overcome. Despite steady progress in the field, how pro-metastatic factors cooperate to fuel tumor growth at different anatomic sites remains poorly understood and thus largely inaccessible to therapeutic targeting. A perfect illustration of this challenge is pancreatic ductal adenocarcinoma (PDAC) – a cancer that is highly prone to metastasis, has dismal prognosis, and lacks effective treatments. In this seminar, I will describe two recent discoveries that have provided surprising new insights into: (1) the organ-specific interaction of driver gene mutations and chromatin states in metastatic PDAC and (2) the functional contribution of chromosomal deletions to PDAC metastasis. These findings reveal how specific genetic lesions, chromatin states, and the organ microenvironment interact to sustain metastatic tumors, with implications for new therapies that are tailored to metastatic disease.

Monday, Nov. 13, 2023 @12:30pm
Hunter North Room 926
Host: Hualin Zhong