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**Hypoxia alters the physical properties of the tumor microenvironment.**

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Of all the deaths attributed to cancer, 90% are due to metastasis, or the spread of cancer cells from a primary tumor to distant organs, and treatments that prevent or cure metastasis remain elusive. Emerging data indicate that low oxygen states within a tumor, termed hypoxia, can alter the chemical and physical parameters of the extracellular matrix (ECM), or scaffold of the tumor tissue. These changes generate a microenvironment that may be more conducive for promoting metastasis. During tumor evolution, changes in the composition and the overall content of the ECM reflect both its biophysical and biological properties and these strongly influence the cells properties, such as cellular proliferation and cell motility. The talk will cover how hypoxia arises within normal tissue and also in tumors. We will cover the role of hypoxia in collagen biogenesis which influences compositional changes to the tumor microenvironment and discuss how these changes lead to a stiffer tumor stroma. The challenges in determining the influence of chemical versus physical cues on cancer progression will also be considered.