1154-92-2112 **Robert A Gatenby*** (robert.gatenby@moffitt.org), Tampa, FL 33612. *The ecology and evolution of intratumoral heterogeneity.*

Classic models of intratumoral heterogeneity assume a primary role for accumulating genetic mutations. However, these models typically assume that the intratumoral environment is stable. In fact, because angiogenesis is disordered, intratumoral blood flow can vary over both time and space. Thus, an alternative model of intratumoral heterogeneity proposes temporal and spatial variations in micro-environmental characteristics as a result of disordered blood flow select for different adaptive strategies with corresponding changes in genotype and phenotype. The cancer cells can affect some of these dynamics through niche construction strategies such as angiogenesis and micro-environmental acidosis which create both ecological and genetic heritages. Modeling studies find these properties can be modified to select for slower growing tumor subpopulations – a prediction confirmed through in vivo studies. (Received September 17, 2019)