PARTNERSHIP FOR THE ADVANCEMENT OF CANCER RESEARCH PRESENTS:

METABOLIC CONSTRAINTS OF CELL PROLIFERATION

Presented by Dr. Lucas Sullivan, Assistant Member at the Fred Hutchinson Cancer Research Center

THURSDAY, DECEMBER 5, 2019
4 P.M. TO 5 P.M.
FOSTER HALL ROOM 231

This event is supported in part by the Partnership for the Advancement of Cancer Research: NCI Grants U54CA132383 and U54CA132381

Cancer Health Disparities
Building Bridges to Enhance Partnerships
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Talk title: "Metabolic Constraints of Cell Proliferation"

Abstract: "Changes to cell metabolism are a characteristic feature of cancer cells, suggesting that therapeutic interventions in metabolic pathways could be effective for a large spectrum of cancers. However, the most obvious metabolic changes are not necessarily the most promising targets for therapeutic intervention. Mechanistic understanding of the metabolic constraints of cancer cell proliferation will determine the most limiting pathways for tumor growth, which represent promising targets for therapy. Our research has shown that electron acceptor regeneration by mitochondrial respiration is required for synthesis of intracellular aspartate, an important metabolite for protein and nucleotide synthesis and cancer cell proliferation. When conferred with a novel metabolic ability that bolsters aspartate levels, cancer cells form tumors with increased growth rate, indicating that aspartate can be an endogenous metabolic limitation for tumor growth. We aim to expand on the most therapeutically promising aspects of this research, targeting aspartate metabolism to inhibit tumor growth, while also generalizing on the basic science conclusions, investigating coenzyme homeostasis and novel metabolic pathways, to gain new understandings of the metabolic requirements for cell proliferation."