TITLE:

Transcriptional, epigenetic, and metabolic regulation of cancer progression

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FACULTY MENTOR DEPARTMENT:

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RESEARCH PROJECT DESCRIPTION:

Cancer evolves to acquire increased invasiveness, survival, and therapy resistance. Our research is focused on the identification and characterization of transcription factors, epigenetic regulators, and intracellular signaling molecules (kinases and phosphatases) that drive cancer progression and metabolic alterations, thus discovering new therapeutic targets. In particular, we study the regulation and significance of epithelial-to-mesenchymal transition (EMT) and aerobic glycolysis (the Warburg effect). A medical student with molecular and cell biology training may work on an independent project relevant to cancer.

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2. Luo H, Shenoy AK, Li X, Jin Y, Jin L, Cai Q, Tang M, Liu Y, Chen H, Reisman D, Wu L, Seto E, Qiu Y, Dou Y, Casero RA Jr, **Lu J.** MOF Acetylates the Histone Demethylase LSD1 to Suppress Epithelial-to-Mesenchymal Transition. **Cell Rep**. 2016 Jun 21; 15:2665-78.
3. Jin Y, Cai Q, Shenoy AK, Lim S, Zhang Y, Charles S, Tarrash M, Fu X, Kamarajugadda S, Trevino JG, Tan M, **Lu J.** Src drives the Warburg effect and therapy resistance by inactivating pyruvate dehydrogenase through tyrosine-289 phosphorylation. **Oncotarget**. 2016 May 3; 7:25113-24.
4. **Lu J,** Tan M, Cai Q. The Warburg effect in tumor progression: mitochondrial oxidative metabolism as an anti-metastasis mechanism. **Cancer Lett**. 2015 Jan 28; 356:156-64 (Epub 2014 Apr 13.).