

PSOC@Penn Special Seminar : Sept 20th, 2021 @ 4.00 pm (EST)

In person talk: Wu & Chen Auditorium (Levine Building)



Speaker: Kayvan R. Keshari, PhD

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<https://www.mskcc.org/research-areas/labs/kayvan-keshari>

Host faculty: Prof. Ravi Radhakrishnan

Talk: "Harnessing Biochemistry and Engineering to Visualize Metabolism"

Abstract :

Oncogenic transformation has been shown to have a dramatic impact on the metabolic state of the cell. Recent reports have demonstrated that specific alterations in oncogenes and signaling pathways results in increases in pathway flux as well as diversion of substrates. Moreover, there is an argument that changes in metabolism can directly affect cell fate and thus promote oncogenesis. Interrogation of these pathways in relevant systems has been hindered though by lack of technologies capable of monitoring metabolism. Hyperpolarized magnetic resonance addresses a fundamental limitation of MRI for interrogating metabolic substrates, sensitivity. Using this approach, endogenous metabolic substrates can be converted into imaging probes to follow metabolic reactions in living systems. Utilizing this imaging as well as a wide range of biochemical tools and engineering approaches, one can develop strategies to mechanistically interrogate metabolic flux. This talk will focus on the combination of such approaches, demonstrating the synergy of new probes and platforms, to reveal metabolic mechanisms as well as their translation to humans.