UC DAVIS HEALTH | SCHOOL OF MEDICINE

Department of
Physiology and Membrane Biology

Distinguished Lecture Series in Physiology

Jonathan Lederer, M.D., Ph.D.

Professor and Director
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University of Maryland, Baltimore

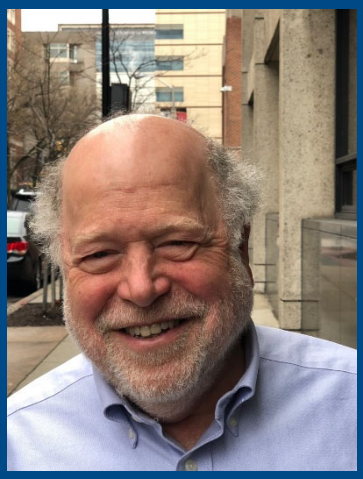
"Electro-metabolic signaling regulates small vessel blood flow in heart"

Blood flow in mammalian heart is tightly regulated so that local flow is precisely matched to specific metabolic need. How this process of blood flow regulation arises so that it accurately and rapidly reflects the ever-changing needs of the tissue is the focus of the work presented. In the process three vexing questions are also answered: Why are there so many KATP channels in ventricular myocytes? How is the A-V O2 difference across the heart maintained at a maximal level under all flow conditions? How are upstream arterioles regulated by the downstream metabolic need?

Our findings demonstrate the pivotal roles of local cardiac myocyte metabolism and KATP channels and also shows a minor role of inward rectifier K+ (Kir2.1) channels in regulating blood flow in the heart. These findings establish a conceptually new framework for understanding the hugely reliable and incredibly robust local electro-metabolic signaling (EMS) mechanism that regulates local blood flow in heart.

Monday, March 28, 2022
GBSF Auditorium and Zoom
2:30 p.m.

March
28



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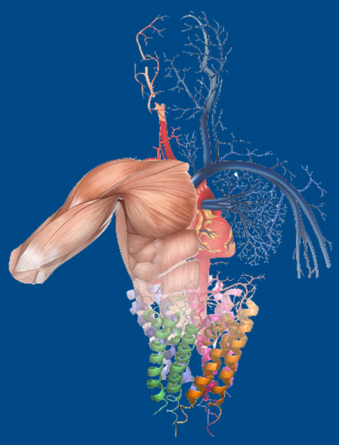

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