

PIONEERS IN BIOMEDICAL RESEARCH SEMINAR

Presented by the Fralin Biomedical Research Institute at VTC and co-sponsored by the Center for Vascular and Heart Research



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New Insights into Cardiac Mechanobiology: Role of Caveolar Nanodomains in Mechano- electrochemical Signal Transduction

The heart is continuously exposed to a changing mechanical environment, both on a beat-to-beat basis (e.g., fluctuating blood pressure, exercise, emotional stress) and chronically (e.g., elevated venous return, high blood pressure). While acute changes in mechanical load stimulate cardiac performance via autoregulatory chronotropic and inotropic responses, chronic overload first induces a phase of compensatory cardiac hypertrophy. Signaling pathways initiated by elevated myocardial tension are linked to multiple stretch-sensitive mechanisms, yet the signaling events that occur at the membrane to sense and transmit mechanical signals at physiological and pathological conditions are poorly understood. This lecture highlights caveolae sarcolemmal invaginations as key stretch-sensitive cardiomyocyte structures and links caveolar mechano-electrochemical signal transduction to the regulation of heart rate and contraction during physiological stress and arrhythmogenesis and structural remodeling during chronic cardiac overload.

FRIDAY, APRIL 17, 11 a.m.

Room G101 A/B, 4 Riverside Circle

Watch live via Zoom at <https://fralinbiomed.info/PBR-Join>



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