From Cell Biology to Translational Research in Muscles and Neurosciences

I belong to a multidisciplinary group of talented researchers encompassing the field of physiology, neuroscience, biochemistry, and biophysics, based in Medellín, Colombia. Our goal is to understand the mechanisms of calcium uptake and release by skeletal, cardiac, and smooth muscle cells, and their association with various diseases and medical conditions. Our translational research employs a variety of mathematical equations in support of our *in-vivo* studies with cellular and animal models. During this talk, I will provide an overview of calcium kinetics inside a muscle cell, and then discuss the active role of the skeletal muscle in the pathophysiology of several metabolic diseases. I will then explain how we unraveled the mechanisms of action of two new anti-hypertensive drugs and their effects on cardiac and smooth muscles. Finally, I will end my talk with a discussion of how cancer cells and blood vessels crosstalk, and how the gut microbiota modulate several neurological functions.

**Thursday, February 13, 2020**
**at 4:15 p.m., in Stowell Hall, Room 211**

*Light refreshments will be served. All are welcome.*