



# Christopher M. Francis, PhD.

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791 Citations

[x] Grant Funding

## Research Interests

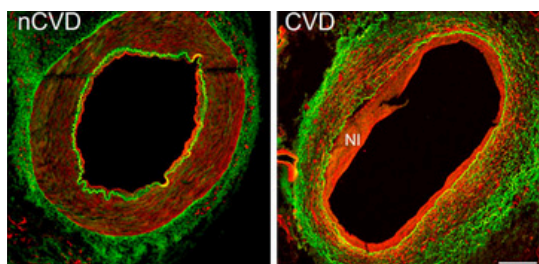
Computational Biology  
Image Processing

Thermography  
Biomedical Engineering

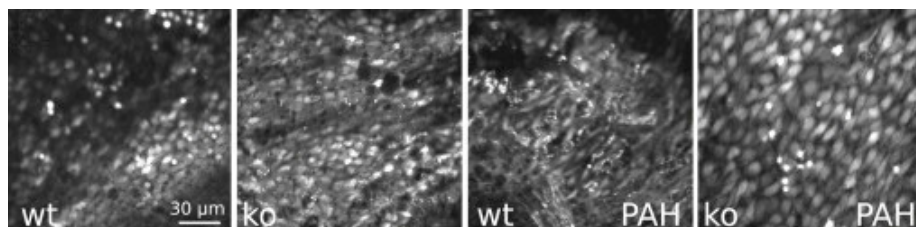
Endothelial Signaling  
Intracellular Calcium Signals

## Experimental Capabilities

Agarose-gelatin Lung Preparation    Opened Artery Prep    Mathematical Modeling  
High-speed Confocal Microscopy    Signal Analytics    Shear Studies



TRPV4 channel expression in human peripheral arteries: Immunofluorescence staining of TRPV4 (red) in cross-sections of nCVD and CVD peripheral arteries. Green is autofluorescence (Auto); Bar 500  $\mu$ m.



Time-lapse of fluorescent intensity to show relative Ca<sup>2+</sup> fluorescence in fields of intact endothelial rat cells. Endothelial cell morphology is revealed through preparing segments of rat pulmonary artery, loading with fluorescent Ca<sup>2+</sup> indicator dye, and measuring basal cell Ca<sup>2+</sup> dynamics for 3 minutes.

### 2016 Circulation Research

"Functional Tuning of Intrinsic Endothelial Ca<sup>2+</sup> Dynamics in Swine Coronary Arteries"

### 2023 Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues

"Dynamic Region of Interest Histometric Analysis of Endogenous Calcium Activity in Intact Lung Tissue"

### 2022 Frontiers in Physiology

"Restricted Intimal Ca<sup>2+</sup> Signaling Associated with Cardiovascular Disease"

### 2023 PLOS One

"Algorithm for Biological Second Messenger Analysis with Dynamic Regions of Interest"



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