



## Manuel Navedo, Ph.D.

### Research/Academic Interests

Cellular and molecular mechanisms regulating arterial smooth muscle excitability The main goal of my research team is to understand the mechanisms by which local and global calcium signals regulate excitation-contraction coupling and excitation-transcription coupling in arterial smooth muscle cells during physiological and pathological conditions. To tackle these issues, we employ several state-of-the-art techniques including molecular biology, patch-clamp electrophysiology, and confocal and Total Internal Reflections Fluorescence (TIRF) microscopy. We are currently interested in determining the mechanisms by which hyperglycemia induces the activation of a novel calcium signaling modality (persistent calcium sparklets) in arterial smooth muscle. We think that activation of this signal contributes to enhanced contractility and arterial dysfunction during diabetes.

Graduate Group Affiliations:

Pharmacology and Toxicology Graduate Program

Molecular, Cellular and Integrative Physiology Graduate Program

Funding Sources:

National Institutes of Health

American Heart Association

**Title** Professor

**Specialty** Ion Channel Physiology, Pharmacology, Vascular Biology, Electrophysiology, Calcium Imaging, Physiology

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B.S., University of Puerto Rico, Rio Piedras

**Fellowships** Vascular Biology, University of Washington, Seattle WA

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## Manuel Navedo, Ph.D.

MF Navedo\*, GC Amberg. Local regulation of L-type calcium channels in arterial smooth muscle. *Microcirculation* 2013; 20: 290-298. \*corresponding author. PMC3577995

M Nieves-Cintrón, MA Nystoriak, MP Prada, K Johnson, W Fayer, ML Dell'Acqua, JD Scott, MF Navedo. Selective downregulation of KV2.1 function contributes to enhanced arterial tone during diabetes. *JBC* 2015; 290: 7918-7929. PMC4367290

MA Nystoriak, M Nieves-Cintrón, MF Navedo. Capturing single L-type calcium channel function with optics. *Biochimica Biophysica Acta* 2013; 1833: 1657-1664. PMC3574202

MA Nystoriak, M Nieves-Cintrón, PJ Nygren, SA Hinke, CB Nichols, CY Chen, JL Puglisi, L Izu, DM Bers, ML Dell'Acqua, JD Scott, LF Santana, MF Navedo. AKAP150 contributes to enhanced vascular tone by facilitating BKCa channel remodeling in hyperglycemia and diabetes. *Circulation Research* 2014; 114: 607-615. This article is accompanied by an editorial highlighting the novel aspects of the study. PMC3954117.

ZA Malik, IS Stein, MF Navedo, JW Hell. Mission CaMKII: Shuttle calmodulin from membrane to nucleus. *Cell* 2014; 159: 235-237. PMC in progress.

RE Dixon, C Moreno, C Yuan, X Optiz-Araya, M Binder, MF Navedo\* LF Santana\*. Graded Ca<sup>2+</sup>/calmodulin-dependent coupling of voltage-gated CaV1.2 channels. *eLife* 4 2015. \*co-corresponding author. PMC4360655

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