

Carlos A. Villalba-Galea: Curriculum vitae

Personal and contact information

Last name: Villalba-Galea

First name: Carlos

Middle name: Alberto

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University of the Pacific
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Stockton, CA 95211

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<http://www.pacific.edu/Academics/Schools-and-Colleges/Thomas-J-Long-School-of-Pharmacy-and-Health-Sciences/Faculty-and-Departments/Physiology-and-Pharmacology/Carlos-A-Villalba-Galea.html>

http://www.researchgate.net/profile/Carlos_Villalba-Galea

Education

B.S. in Biology, 1998

Escuela de Biología, Facultad de Ciencias.

Universidad Central de Venezuela

Caracas, Venezuela

Ph.D. in Physiology and Biophysics, 2004

Instituto Venezolano de Investigaciones Científicas (I.V.I.C.)

Centro de Biofísica y Bioquímica & Centro de Física

Altos de Pipe-Caracas, Venezuela

Professional memberships

1998 – present Biophysical Society

2001 – present Sociedad de Biofísicos Latinoamericanos

2016 – present Society for General Physiologist

2012 – 2015 American Association for the Advancement of Science

2013 – 2015 Massey Cancer Center – VCU

Professional Experience

- 2016- present Assistant Professor
Department of Physiology and Pharmacology. University of the Pacific
Stockton, CA 95211
- 2012- 2016 Assistant Professor (Non tenure-track)
Department of Physiology and Biophysics. Virginia Commonwealth University
Richmond, VA 23298
- 2009-2012 Assistant Professor (Non tenure-track)
Dr. I. Scott Ramsey (supervisor)
Department of Physiology and Biophysics. Virginia Commonwealth University
Richmond, VA 23298
- 2006-2009 Postdoctoral Scholar/Research Associate
Dr. Francisco Bezanilla (advisor)
Department of Pediatrics (2006-2007)
Department of Biochemistry and Molecular Biology (2007-2009)
The University of Chicago.
Chicago, IL 60637
- 2002-2006 Research Associate
Dr. George J. Augustine (advisor)
Department of Neurobiology. Duke University Medical Center
Durham, NC 27710
- 2002-2005 Visiting Researcher
Dr. George J. Augustine (advisor)
Marine Biological Laboratories
Woods Hole, MA 02543
- 2000-2002 International Visiting Scholar
Dr. Ariel L. Escobar (advisor)
Department of Physiology. Texas Tech University Health Sciences Center
Lubbock, TX 79430
- 1999-2002 Graduate student
Dr. Ariel L. Escobar (advisor)
Quantum Optic Laboratory. Physics Center, I.V.I.C.
Altos de Pipe-Caracas, Venezuela
- 1998-1999 Graduate student
Dr. Ariel L. Escobar (advisor)
Muscle Biophysics Laboratory. Biophysics and Biochemistry Center, I.V.I.C.
Altos de Pipe-Caracas, Venezuela

Teaching experience

Spring 2017	Physiology and Pathophysiology PHRM122 (graduate course). University of the Pacific - Pharmacy Topic: Autonomic Nervous System
Spring 2016	Advances in Biology: Ion Channels BIOL 390 (undergraduate course). University of Richmond Guest Instructor
Spring 2016	Human Physiology PHIS-206 (undergraduate course). Course Co-director
Fall 2011 – Spring 2012 (biannual)	Human Physiology PHIS-206 (undergraduate course). Topics: • Skeletal and cardiac muscle physiology. • Cardiovascular Physiology
Fall 2011 – Fall 2015 (biannual)	Human Physiology Lab PHIZ-206 (undergraduate course). Teaching assistant, 2011. Co-director, 2012-present
Summer 2013 – 2016 (annual)	Research for Residents & Fellows. VCU School of Medicine. Small group facilitator
Spring 2012 – 2013 (annual)	Introduction to Electrophysiology and Photonics Methods PHIS-692-002 (graduate course). Course director.
Spring 2011 – 2015 (every other year)	Ion Channels PHIS-620 (graduate course). Topics: • Classic electrophysiology in <i>Loligo pealei</i> (squid) • Ion channel thermodynamics • Spectroscopy • Voltage sensitive phosphatases and proton channels
Spring 2010 – 2016 (biannual)	Physiology Research Seminar PHI-690 (graduate course). Participant faculty.

Mentoring

Beau Forest, Bioengineering, University of the Pacific (Spring 2017 – present). Undergraduate independent study. Project: “Developing a novel numerical approach to modeling protein activity kinetics.”

Aaron Corbin, Chemistry and Engineering, VCU (Fall 2014 – Spring 2016). Independent study/Undergraduate work-study student. (Summer 2014) Volunteer. Project: “Developing a model for excitability studies in *Xenopus* oocytes.”

Sayeed M. Mossadeq, Master Graduate, Pharmacy VCU (Fall 2013-Spring 2015) Volunteer student, VCU. Project: “Effect of agonist drugs on K_v7 channel hysteresis.”

Christopher Waite, Physiology and Biophysics, VCU (Spring 2014) Ph.D. student rotation, VCU. Project: "Calculation of free energy in hysteretic voltage sensing processes."

Thaison Nguyen (Fall 2013-Spring 2014) Undergraduate Senior Thesis, VCU. Project: "Role of phosphatidylinositol-(4,5)-biphosphate (PIP₂) on the activity of the voltage gated potassium channels Kv2.1." Thesis Director: Dr. Diomedes Logothetis.

Wade Everett Fox, (2012-2013). Master thesis, VCU. Project: "Role of the S3-S4 linker in voltage-gated channels relaxation" – Defended: July 3rd, 2013.

Iwona Ruchala (2012-2013) Ph.D. student rotation, VCU. Project: "Mechanism voltage-sensor relaxation in the voltage-dependent Kv7.2-7.3 heteromeric channel".

Junghoon Ha (2010) Ph.D./M.D. student rotation, VCU. Project: "Dynamic modulation of voltage-dependent Kv7.2-7.3 channel opening by voltage-sensor relaxation."

Service

Review Editor - Frontiers: Pharmacology of Ion Channels and Channelopathies. 2015-present

Ad hoc technical evaluator for Agencia Nacional de Investigación e Innovación de Uruguay. 2015

Ad hoc reviewer: Scientific Reports, Journal of General Physiology, Biophysical Journal, PlosOne, P.N.A.S., Frontier, and Pflügers Archiv.

Invited Associate Editor: Frontiers: Pharmacology of Ion Channels and Channelopathies. 2014-2015 – Phosphoinositides and their phosphatases: Linking electrical and chemical signals in biological processes.

Senior Faculty Search Committee, Department of Physiology and Biophysics, Virginia Commonwealth University School of Medicine, 2014-2015.

Teaching and Learning Committee. VCU, Department of Physiology and Biophysics. 2013-present.

Thesis committees

2016- Aaron J. Barbour. Ph.D. Thesis. *TBD*. Director: Dr. Pamela Knapp. Department of Anatomy & Neurobiology, VCU School of Medicine.

2016 Zi L. Huang. M.S. Thesis. Title: *Pharmacological Inhibition of Cyclophilin Ameliorates Experimental Allergic Encephalomyelitis*. Director: Dr. Unsung Oh. Department of Neurology, VCU School of Medicine.

2014-2015 Laura O'Brien. Ph.D. thesis. Title: *Mitochondrial biogenesis and electrical properties of hPSC-derived motor neurons*. Director: James P. Bennett, Jr, MD, PhD. Department of Physiology and Biophysics, VCU School of Medicine.

Fellowships and honors

2013-2015 KL2 Scholar. Center for Clinical and Translational Research. VCU – NIH – NCATS

2012 Keystone Symposia Early Career Investigator Travel Award. Keystone Symposia Conference, "Synapses and Circuits: From Formation to Disease."

2008 Carl Storm Fellowship. Gordon Research Conference.

- 2003 Grant. National Center for Supercomputing Applications. Teragrid. Proposal: "Activity of Ryanodine Receptor during Calcium Release".
- 2003 Grass Fellowship in Neuroscience. Grass Foundation, Braintree-Woods Hole, MA.
- 2000 Fellowship. V Escuela Latinoamericana de Neurociencias. Montevideo, Uruguay.
- 1998-1999 Fellowship. Instituto Venezolano de Investigaciones Científicas. Caracas, Venezuela.
- 1998 Defended with honor. B.S. Thesis. Advisor: Dr. Ariel L.M. Escobar

Seminars (by invitation only)

- Mar, 2017 (TBD) "Modulation by phosphoinositides of K_v7 channels modal gating"
Department of Pharmacology & Physiology. Rutgers, The State University of New Jersey.
- Dec 9, 2016 "New insights into the interaction between anticonvulsants and K_v7 channels"
Department of Molecular & Cellular Physiology, Stanford University
- Mar 21, 2016 "New molecular insight into the action of the anticonvulsant Retigabine".
Department of Biology. University of Richmond. Richmond, VA.
- Feb 8, 2016 "Hysteresis in Cellular Excitability: New insights into the effect of anticonvulsants".
Department of Physiology and Pharmacology. Thomas J. Long School of Pharmacy and Health Sciences. University of the Pacific. Stockton, CA.
- Mar 23, 2015 "Hysteresis in Cellular Electrical Signaling".
Department of Biomedical & Pharmaceutical Sciences. University of Montana, Missoula, MT.
- Feb 10, 2014 Discovery Dialogues seminar: "Taming PTEN: Towards New Discoveries in Cancer Treatment".
Learning Center, VCU-Main Hospital. Richmond, VA.
- Feb 13, 2013 "Dynamic Voltage Dependence in Membrane Proteins".
School of Engineering. University of California Merced. Merced, CA.
- Feb 23, 2011 "Modular Nature of Voltage Sensitive Phosphatases."
Department of Biochemistry and Molecular Pharmacology. University of Massachusetts. Worcester, MA.
- July 12, 2010 "Modular Nature of the Main Domains in Voltage Sensitive Phosphatases"
Gordon Researcher Conference – Ion Channels. Tilton, NH.

- Jan 12, 2009 "New Insights into the Mechanism of Activation of the Voltage-Dependent Phosphoinositide Phosphatase, Ci-VSP."
Department of Molecular Biophysics and Physiology. Rush University Medical Center. Chicago, IL.
- Oct 21, 2008 "Uncoupling of the Phosphatase Activity of Ci-VSP produces a deeper relaxation of the Voltage Sensing Domain."
Dept. of Anatomy and Cell Biology. University of Illinois at Chicago. Chicago, IL.
- Apr 19, 2006 "The Timing of Protein-Protein Interactions Involved in Synaptic Vesicle Recycling."
Dept. of Cell and Molecular Physiology. Loyola University Chicago. Chicago, IL.

Publications

<http://www.ncbi.nlm.nih.gov/pubmed?term=villalba-galea>

- 2016 **C.A. Villalba-Galea**. 2016. Hysteresis in voltage-gated channels. *Channels*. Sep 30:1-16. PubMed PMID: 27689426 [[pubmed](#)][[journal](#)]

A. Corbin-Leftwich, S.M. Mossadeq, J. Ha, I. Ruchala, A.H.N. Le and **C.A. Villalba-Galea**. 2016. Retigabine holds Kv7 channels open and stabilizes the resting potential. *J. Gen. Physiol.* **147(3)**:229-241. PMID: 26880756. PMCID: PMC4772374. [[pubmed](#)] [[journal](#)].

- 2015 S.C. Kohout and **C.A. Villalba-Galea**. 2015. Editorial: Phosphoinositides and their phosphatases: Linking electrical and chemical signals in biological processes. *Front. Pharmacol.* **6**:142. PMID: 26217228. PMCID: PMC4495603 [[pubmed](#)] [[journal](#)]

- 2014 **C.A. Villalba-Galea**. 2014. Hv1 proton channel activation is preceded by a voltage-independent transition. *Biophys. J.* **107**:1564–1572. PMID: 25296308 [[pubmed](#)]

Q. Li, S. Wanderling, M. Paduch, D. Medovoy, A. Singharoy, R. McGreevy, **C.A. Villalba-Galea**, R.E. Hulse, B. Roux, K. Schulten, A. Kossiakoff and E. Perozo. 2014. Structural mechanism of voltage-dependent gating in an isolated voltage-sensing domain. *Nat. Struct. Mol. Biol.* **21**:244–252 PMID: 24487958 [[pubmed](#)]

- 2013 F. Bezanilla and **C.A. Villalba-Galea**. 2013. The gating charge should not be estimated by fitting a two-state model to a Q-V curve. *J. Gen. Physiol.* **142(6)**:575-578. PMID: 24218396 [[pubmed](#)]

M.F. Priest, J.J. Lacroix, **C.A. Villalba-Galea**, and F. Bezanilla. 2013. S3-S4 linker length modulates the relaxed state of a voltage-gated potassium channel. *Biophys. J.* **105(10)**:2312-2322. PMID: 24268143 [[pubmed](#)]

- C.A. Villalba-Galea**, L. Frezza, W. Sandtner, and F. Bezanilla. 2013. Sensing charges of the *Ciona intestinalis* voltage sensing phosphatase. *J. Gen. Physiol.* **142(5)**: 543-555. PMID: 24127524 [[pubmed](#)]
- K.J. Ruscic, F. Miceli, **C.A. Villalba-Galea**, H. Dai, Y. Mishina, F. Bezanilla, and S.A.N. Goldstein. 2013. IKs channels open slowly because KCNE1 slows the movement of S4 voltage sensors in KCNQ1 subunits. *Proc. Natl. Acad. Sci. U.S.A.* **110(7)**: E559–E566. PMID: 23359697 [[pubmed](#)]
- 2012 A.J. Labro, J.J. Lacroix, **C.A. Villalba-Galea**, D.J. Snyders, and F. Bezanilla. 2012. Molecular mechanism for depolarization-induced modulation of Kv channel closure. *J. Gen. Physiol.* **140(5)**: 481-493. PMID: 23071266 [[pubmed](#)]
- C.R. Halaszovich, M.G. Leitner, A. Le, L. Frezza, A. Feuer, D.N. Schreiber, **C.A. Villalba-Galea**, and D. Oliver. 2012. A human phospholipid phosphatase activated by a transmembrane control module. *J. Lipid. Res.* **53**: 2266-2274. PMID: 22896666 [[pubmed](#)]
- C.A. Villalba-Galea**. 2012. Voltage-controlled Enzymes: The new Janus Bifrons. *Front. Pharmac.* 3:161. PMID: 22993507 [[pubmed](#)]
- C.A. Villalba-Galea**. 2012. New insights in the activity of voltage sensitive phosphatases. *Cell Signal.* **24(8)**:1541-1547. PMID: 22481094 [[pubmed](#)]
- 2011 Lacroix J, C.R. Halaszovich, D.N. Schreiber, M.G. Leitner, F. Bezanilla, D. Oliver, and **C.A. Villalba-Galea**. 2011. Controlling the activity of a phosphatase and tensin homolog (PTEN) by membrane potential. *J. Biol. Chem.* **286(20)**:17945-17953. PMID: 21454672 [[pubmed](#)]
- 2009 **C.A. Villalba-Galea**, F. Miceli, M. Taglialatela, and F. Bezanilla. 2009. Coupling between the voltage sensing and phosphatase domains of Ci-VSP. *J. Gen. Physiol.* **134(1)**:5-14. PMID: 19564425 [[pubmed](#)]
- C.A. Villalba-Galea**, W. Sandtner, D. Dimitrov, H. Mutoh, T. Knopfel, and F. Bezanilla. 2009. Charge movement of the Voltage Sensitive Fluorescent Protein. *Biophys. J.* **96(2)**: L19-L21. PMID: 19167283 [[pubmed](#)]
- 2008 **C.A. Villalba-Galea**, W. Sandtner, D.M. Starace, and F. Bezanilla. 2008. Inaugural Article: S4-based voltage sensors have three major conformations. *Proc. Natl. Acad. Sci. U.S.A.* **105(46)**: 17600-17607. PMID: 18818307 [[pubmed](#)]
- 2006 G.J. Augustine, J.R. Morgan, **C.A. Villalba-Galea**, S. Jin, K. Prasad, and E.M. Lafer. 2006. Clathrin and synaptic vesicle endocytosis: Studies at the squid giant synapse. *Biochem. Soc. Trans.* **34** (Pt 1): 68-72. PMID: 16417485 [[pubmed](#)]

- 2004 M.E. Zoghbi, J.A. Copello, **C.A. Villalba-Galea**, P. Velez, P.L. Diaz Sylvester, P. Bolaños, A. Marcano, M. Fill, and A.L. Escobar. 2004 Differential Ca^{2+} and Sr^{2+} regulation of intracellular divalent cations release in ventricular myocytes. *Cell Calcium*. **36(2)**:119-134. PMID: 15193860 [[pubmed](#)]
- A.L. Escobar, R. Ribeiro-Costa, **C.A. Villalba-Galea**, M.E. Zoghbi, C.G. Perez, and R. Mejia-Alvarez. 2004. Developmental changes of intracellular Ca^{2+} transients in beating hearts. *Am.J.Physiol.Heart Circ.Physiol*. **286(3)**:H971-H978. PMID: 14644760 [[pubmed](#)]
- 2003 R. Mejia-Alvarez, C. Manno, **C.A. Villalba-Galea**, L. Del Valle Fernandez, R.R. Costa, M. Fill, T. Garbhi, and A.L. Escobar. 2003. Pulsed local-field fluorescence microscopy: a new approach for measuring cellular signals in the beating heart. *Pflügers Arch*. **445(6)**:747-758. PMID: 12632197 [[pubmed](#)]
- 2000 M. Fill, A. Zahradníková, **C.A. Villalba-Galea**, I. Zahradník, A.L. Escobar, and S. Györke. 2000. Ryanodine receptor adaptation. *J. Gen. Physiol*. **116**: 873-882. PMID: 11099353 [[pubmed](#)]
- M.E. Zoghbi, P. Bolaños, **C.A. Villalba-Galea**, A. Marcano, E. Hernández, M. Fill, and A.L. Escobar. 2000. Spatial Ca^{2+} distribution in contracting skeletal and cardiac muscle cells. *Biophys. J*. **78**:164-173. PMID: 10620283 [[pubmed](#)]

Abstracts and presentations

- 2017 C.A. Villalba-Galea (2017). $\text{PI}(4,5)\text{P}_2$ modulates hysteresis and pharmacology of K_v7 channels. Biophysical Society 61st Annual Meeting. *Biophysical J*. (Annual Meeting, Poster).
- 2016 H. Small, **C.A. Villalba-Galea**, and L. M. Boland (2016). Differential regulation of action potentials by potassium channels. *Annual Meeting of the Society for Neuroscience* (poster).
- A. Corbin-Leftwich and **C.A. Villalba-Galea** (2016). The action of Retigabine on K_v7 channels activity requires $\text{PI}(4,5)\text{P}_2$. *Society of General Physiologist. 70th annual meeting and symposium: Genetic & animal models for ion channel function in physiology and disease* (Poster)
- A. Corbin-Leftwich and **C.A. Villalba-Galea** (2016). K_v7 channels requires $\text{PI}(4,5)\text{P}_2$ for the action of the anticonvulsant Retigabine. *Gordon Research Conference: Ion Channels* (Poster)
- T.C. Larry, J. Butler, E. Leggett, N. Rockwell, J. K. Bell, **C.A. Villalba-Galea**, and L. M. Boland (2016) Modulatory activation of an invertebrate Kir channel by protein kinase C: Investigation of an interaction with PIP_2 . *American Society for Biochemistry and Molecular Biology* (Poster)

- 2015 A. Corbin, S.M. Mossadeq, and **C.A. Villalba-Galea** (2015). Development of a model for excitability studies using *Xenopus* oocytes. Biophysical Society 59th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- 2014 C. Waite and **C.A. Villalba-Galea** (2014). pH Sensitivity of Voltage Sensing Domain Relaxation. *Gordon Research Conference: Ion Channels* (poster)
- C.A. Villalba-Galea** (2014). pH Sensitivity of Voltage Sensing Domain Relaxation. Biophysical Society 58th Annual Meeting. *Biophysical J.* (Annual meeting, Poster)
- 2013 Q. Li, S. Wanderling, M. Paduch, D. Medovoy, **C.A. Villalba-Galea**, R. Hulse, B. Roux, A. Kossiakoff, and E. Perozo (2013). Structural mechanism of voltage-dependent gating in an isolated voltage-sensing domain. Biophysical Society 57th Annual Meeting. *Biophysical J.* (Annual Meeting, Platform)
- A.L. Randolph, **C.A. Villalba-Galea**, and I.S. Ramsey (2013). Voltage sensing in Hv1 proton channels. Biophysical Society 57th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster).
- W.E. Fox and **C.A. Villalba-Galea** (2013). S3-S4 loop modulates voltage sensing domain relaxation. Biophysical Society 57th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- S. Sundaram and **C.A. Villalba-Galea** (2013). Voltage sensor trapping in the relaxed state. Biophysical Society 57th Annual Meeting. *Biophysical J.* (Annual Meeting, Platform)
- 2012 J.J. Lacroix, R.E. Redfern, A.H. Ross, I.S. Ramsey, F. Bezanilla, A. Gericke, and **C.A. Villalba-Galea**. (2012). Interdomain linker in voltage sensitive phosphatases selectively binds PI(4,5)P₂. *Keystone Symposium*. Steamboat Springs, CO.
- C.A. Villalba-Galea** and I.S. Ramsey (2012). Control of Hv1 voltage-gated proton channel opening by changes in the transmembrane voltage and pH gradients. Biophysical Society 56th Annual Meeting. *Biophysical J.* (Annual Meeting, Platform)
- M.F. Priest, J.J. Lacroix, **C.A. Villalba-Galea**, F. Bezanilla. (2012). Reducing S3-S4 linker length in *Shaker* K⁺ channels stabilizes the relaxed state. Biophysical Society 56th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- H. Raghuraman, S. Wanderling, **C.A. Villalba-Galea**, and Eduardo Perozo. (2012). Structural dynamics in the resting and activated states of the voltage sensor of Ci-VSP from dipolar distance measurements. Biophysical Society 56th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)

- Q. Li, S. Wanderling, **C.A. Villalba-Galea**, and E. Perozo (2012). The resting and activated conformations of the voltage sensor of Ci-VSP from functional and solvent accessibility determinations. Biophysical Society 56th Annual Meeting. *Biophysical J.* (Annual Meeting, Plattform)
- K. Ruscic, F. Miceli, **C.A. Villalba-Galea**, F. Bezanilla, S.A.N. Goldstein (2012). KCNE1 slows the voltage sensors of KCNQ1. Biophysical Society 56th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- 2011 C.R. Halaszovich, J. Lacroix, D.N. Schreiber, M. Leitner, **C.A. Villalba-Galea**, D. Oliver (2011). A Ci-VSP/TPIP α chimera exhibiting voltage-dependent PI(4,5)P₂/PIP₃-5'-phosphatase activity. Biophysical Society 55th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- C.A. Villalba-Galea**, J. Ha and I.S. Ramsey (2011). Dynamic modulation of voltage-dependent Kv7.2-7.3 channel opening by voltage-sensor relaxation. Biophysical Society 55th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- C.A. Villalba-Galea** and I.S. Ramsey (2011). Voltage-sensor relaxation in Hv1 proton channels. Biophysical Society 55th Annual Meeting. *Biophysical J.* (Annual Meeting, Plattform)
- A.J. Labro, J.J. Lacroix, **C.A. Villalba-Galea**, D.J. Snyders, and F. Bezanilla (2011). Gate closure strictly follows voltage-sensor movements in Kv channels. Biophysical Society 55th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- 2010 E. Vargas, **C.A. Villalba-Galea**, B. Roux, F. Bezanilla (2010). Structural model of the voltage-sensing domain in Ci-VSP. Biophysical Society 54th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- A. Gericke, R.E. Redfern, A. Ross, **C.A. Villalba-Galea**, E. Vargas, F. Bezanilla, J. Lacroix (2010). PTEN and Ci-VSP show similar phosphoinositide binding preferences. Biophysical Society 54th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- C.A. Villalba-Galea**, L. Frezza, E. Vargas, F. Bezanilla (2010). Sensing charges of Ci-VSP. Biophysical Society 54th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- J. Lacroix, C.R. Halaszovich, D.N. Schreiber, F. Bezanilla, D. Oliver, **C.A. Villalba-Galea** (2010). Modular nature of the main domains in voltage sensitive phosphatases. Biophysical Society 54th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)
- C.A. Villalba-Galea**, L. Frezza, F. Bezanilla (2010) Stabilization of the relaxed state of the voltage sensing domain of Shaker. Biophysical Society 54th Annual Meeting. *Biophysical J.* (Annual Meeting, Poster)

- 2009 **C.A. Villalba-Galea**, F. Miceli, and F. Bezanilla (2009). Uncoupling of the phosphatase produces a deeper relaxation of Ci-VSP. Biophysical Society 53rd Annual Meeting. *Biophys. J.* (Annual Meeting Abstracts, Platform)
- 2008 F. Miceli, **C.A. Villalba-Galea**, W. Sandtner, Maurizio Taglialatela and F. Bezanilla (2008). Ci-VSP shows homology with two different protein types. Biophysical Society 52nd Annual Meeting. *Biophys. J.* (Annual Meeting Late Abstracts)
- C.A. Villalba-Galea**, W. Sandtner, and F. Bezanilla (2008). Ci-VSP Charge movement shows a voltage-sensor-inactivation-like behavior. Biophysical Society 52nd Annual Meeting. *Biophys. J.* (Annual Meeting Abstracts, platform)
- C.A. Villalba-Galea**, D. Dimitrov, H. Mutoh, A. Lundby, W. Sandtner, F. Bezanilla, and T. Knöpfel. (2008). Charge movement of the Voltage Sensitive Fluorescent Protein. Biophysical Society 52nd Annual Meeting. *Biophys. J.* (Annual Meeting Abstracts)
- 2007 **C.A. Villalba-Galea**, W. Sandtner, and F. Bezanilla (2007). C. intestinalis Voltage-sensor-containing Phosphatase (Ci-VSP) is an Oligomer. Biophysical Society 51st Annual Meeting. *Biophys. J.* (Annual Meeting Abstracts, late abstracts)
- 2004 **C.A. Villalba-Galea**, S. Jin, K. Prasad, G.J. Augustine, and E.M. Lafer (2004). Timing of protein-protein interactions involved in synaptic vesicle endocytosis. *Society for Neuroscience Meeting*: 967.6
- 2002 M. Porta, P.L. Diaz Sylvester, A. Nani, **C.A. Villalba-Galea**, R.A. Rosales, A.L. Escobar, M. Fill, and J.A. Copello (2002). Action of methyl-bromo-eudistomin on single ryanodine receptor channels. *Biophys. J.* (Annual Meeting Abstracts): 82a
- R.A. Rosales, **C.A. Villalba-Galea**, C. Kettlun, M. Fill, and A.L. Escobar (2002). Statistical analysis of single ryanodine channels. *Biophys. J.* (Annual Meeting Abstracts): 74a
- C.A. Villalba-Galea**, R.A. Rosales, and A.L. Escobar (2002) RyR spatial organization is involved in Ca-sparks termination. *Biophys. J.* (Annual Meeting Abstracts): 72a
- 2001 A.L. Escobar, **C.A. Villalba-Galea**, and J.L. Puglisi (2001). Modeling microscopic Ca events in heart: two different theoretical approaches. *Biophys. J.* (Annual Meeting Abstracts): 595a
- A.L. Escobar, **C.A. Villalba-Galea**, D. Terentyev, and S. Györke (2001). *In situ* visualization of Ca sparks and waves in perfused whole mouse hearts by confocal imaging. *Biophys. J.* (Annual Meeting Abstracts): 507a
- 1998 **C.A. Villalba-Galea**, B.A. Suarez-Isla, M. Fill, and A.L. Escobar (1998). Kinetic model for ryanodine receptor adaptation. *Biophys. J.* 74:A58. (Abstr.)

Ongoing research support

NIH-NHLBI - R01HL059949 Diomedes E. Logothetis (PI) 2017-2020
Northeastern University
Structural Determinants of PIP₂ Regulation
Role: Co-PI (sub contract) – Assistant Professor

Scholarly/Artistic Activities Grant C.A. Villalba-Galea (PI) 2017
University of the Pacific School of Pharmacy and Health Sciences
Unveiling the mechanism of anticonvulsant drug action using human stem-cell derived neurons
Role: PI – Assistant Professor

Nutting Foundation C.A. Villalba-Galea (PI) 2016-2017
University of the Pacific School of Pharmacy and Health Sciences
Molecular basis for the action of anticonvulsants
Role: PI – Assistant Professor

XSEDE - TG-MCB150150 Linda Boland (PI) 2016 – 2017
University of Richmond
Impact of Phosphorylation on Ion Channel-Membrane Lipid Interactions - A Molecular Dynamic Study
Role: Co-PI - Assistant Professor (U of Pacific)

XSEDE - TG-MCB150099 C.A. Villalba-Galea (PI) 2016 – 2017
University of the Pacific.
Molecular basis for the action of K_v7 channel agonist drugs.
Role: PI - Assistant Professor

Completed research support

XSEDE - TG-MCB150099 C.A. Villalba-Galea (PI) 2015 – 2016
Virginia Commonwealth University School of Medicine.
Molecular basis for the action of K_v7 channel agonist drugs.
Role: PI - Assistant Professor

VCU-CCTR Endowment Fund C.A. Villalba-Galea 2015 – 2016
UL1TR000058 NCATS G. Moeller (PI)
Virginia Commonwealth University School of Medicine.
Molecular basis of the action of anticonvulsant in cellular excitability
Role: PI - Assistant Professor

CTSA - KL2TR000057 C.A. Villalba-Galea 2013 – 2015
UL1TR000058 NCATS J. Clore (PI)
Virginia Commonwealth University
Time-resolved determination of the multi-step dynamics of PTEN.
Role: PI - Assistant Professor

Dept. discretionary funds Virginia Commonwealth University School of Medicine. Hysteresis in voltage-sensitive proteins.	C.A. Villalba-Galea (PI)	2012 – 2016
Laboratory startup funds & NIH R01 GM092908-01A1 Virginia Commonwealth University School of Medicine. Molecular mechanism of Hv1 voltage-gated proton channels Role: Key personnel - Assistant Professor	Ramsey, I.S. (PI)	2008 – 2012
NIH R01 GM030376 The University of Chicago Mechanism of Voltage Sensing in Voltage Gated Channels Role: Postdoctoral Fellow	Bezanilla, F. (PI)	2005 – 2009
NIH grants NS021624 Duke University Medical Center Calcium ions and presynaptic function Role: Postdoctoral Fellow	Augustine, G.J. (PI)	2002 – 2005
NIH grants NS029051 University of Texas Health Sciences Center, San Antonio Molecular biology of the synapse Role: Postdoctoral Fellow (George J. Augustine)	Lafer, Eileen M. (PI)	2002 – 2005
TTUSOM Seed Grant 4324 Texas Tech University Health Sciences Center Mechanism of Control of Calcium Release in Heart Role: Visiting scholar	Escobar, A.L. (PI)	2000 – 2002