

Curriculum Vitae

LAURA BIANCHI

PROFESSIONAL EXPERIENCE

Associate Professor Physiology and Biophysics - University of Miami

1. **Date:** 2/2/2016

I. Personal

2. **Name:** Laura Bianchi

3. **Home Phone:** none, cell: 615-400-2118

4. **Office phone:** 305-243-1887

5. **Home Address:** 836 Alberca St., Coral Gables, FL 33134

6. **Current Academic Rank:** Associate Professor

6a. **Current Track of Appointment:** Tenured

7. **Primary Department:** Physiology and Biophysics

8. **Secondary or joint appointment:** none

9. **Citizenship:** Italian/American

10. **Visa type:** NA

II. higher education

11. Institutional:

University of Florence, Italy; **PhD in Physiology**; May 1997

University of Milan, Italy, **BS/MS in Biochemistry**, 1990-1992

12. Non-institutional: N/A

13. Certification, license: N/A

III. Experience

14. Academic: (institutions; rank/status; dates)

Department of Physiology and Biophysics, University of Miami, Miami, FL, **Associate Professor**, 2013-present.
Tenured, June 2015-present.

Department of Physiology and Biophysics, University of Miami, Miami, FL, **Assistant Professor (tenure-earning track)**, 2006-2013.

Department of Molecular Biology and Biochemistry, Rutgers University, Piscataway, NJ, **Assistant Professor (research track)**, 2001-2006.

Department of Medicine, Vanderbilt University, Nashville, TN, **Postdoctoral Research Fellow**, (Supervisor: Alfred L. George Jr.), 1998-2001.

Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH, **Junior Researcher**, (Supervisor: Arthur M. Brown), 1997-1998.

15. Hospital appointments: N/A

16. Non academic: N/A

17. Military: N/A

IV. Publications

18. Books and monographs:

2 as corresponding author, 1 as first author

- 1) Bianchi L. and Driscoll M. Culture of embryonic *C. elegans* cells for electrophysiological and pharmacological analyses. Book Chapter in **WormBook**, ed. The *C. elegans* Research Community, (<http://www.wormbook.org>). Sep 30:1-15, 2006. http://www.wormbook.org/chapters/www_culture/culture.html PMID: 18050435, corresponding author.
- 2) Bianchi L. and Driscoll M. Heterologous expression of *C. elegans* ion channels in *Xenopus* oocytes. Book Chapter in **WormBook**, ed. The *C. elegans* Research Community, (<http://www.wormbook.org>). Aug 1:1-16, 2006. (http://www.wormbook.org/chapters/www_channelexpress/channelexpress.html). PMID: 18050441, corresponding author.
- 3) Bianchi L., and Driscoll M., The molecular basis of touch sensation as modeled in *Caenorhabditis elegans*. Book Chapter in "**Transduction channels in sensory cells**", (eds. Frings, S. & Bradley J.), 1-29, 2004 (Wiley-VCH, Weinheim, Germany), first author.

19. Juried or refereed journal articles or exhibitions:

Of 37 papers, there are 11 as corresponding or co-corresponding author, 12 as first or co-first author

- 1) Grant J., Matthewman C., and Bianchi L. A novel mechanism of pH buffering in *C. elegans* glia: bicarbonate transport via the voltage-gated Cl⁻ channel CLH-1. **Journal of Neuroscience** 35(50): 16377-97. PMID: 26674864, PMCID: PMC4679820, corresponding author.
- 2) Zhuang G. Z., Keeler B., Grant J., Bianchi L., Fu E. S., Zhang Y. P., Erasso D. M., Cui J. G., Wiltshire T., Li Q., Hao S., Sarantopoulos K. D., Candiotti K., Wishnek S. M., Smith S. B., Maixner W., Diatchenko L., Martin E. R., Levitt R. C. Carbonic anhydrase-8 regulates inflammatory pain by inhibiting the ITR1-cytosolic free calcium pathway. **PLoS One**, 10(3): e0118273, 2015. PMID: 25734498
- 3) Sangaletti R., Dahl G., and Bianchi L. Mechanosensitive unpaired innexin channels in *C. elegans* touch neurons. **American Journal of Cell Physiology**, 307(10): C966-77, 2014. PMID: 25252948, PMCID: PMC4233263, corresponding author
- 4) Kamat S., Yeola S., Zhang W., Bianchi L.*, and Driscoll M*. NRA-2, a nicalin homolog, regulates neuronal death by controlling surface localization of toxic *C. elegans* DEG/ENaCs. **Journal of Biological Chemistry**, 2014, Feb 24. [Epub ahead of print], PMID: 24567339, *co-corresponding authors.
- 5) Safratowich B., Hossain M., Bianchi L., and Carvelli L. Amphetamine potentiates the effects of β -Phenylethylamine through activation of an amine-gated chloride channel. **Journal of Neuroscience**, 34(13): 4686-91, 2014, PMID: 24672014, PMCID: PMC3965791.
- 6) Wang Y., Matthewman C., Han L., Miller T., Miller D. M. III and Bianchi L. Neurotoxic *unc-8* mutants encode constitutively active DEG/ENaC channels that are blocked by divalent cations. **Journal of General Physiology**, 142(2): 157-69, 2013, PMID: 23898007, PMCID:PMC3727304, corresponding author.
- 7) Safratowich D. D, Lor C., Bianchi L., and Carvelli L. Amphetamine activates an amine-gated chloride channel to generate behavioral effects in *Caenorhabditis elegans*. **Journal of Biological Chemistry**, 88(30): 21630-7, 2013, PMID: 23775081, PMCID:PMC3724622, corresponding author.

- 8) Sangaletti R. and Bianchi L. A method for culturing embryonic *C. elegans* cells". *Jove*, (79): e50649, 2013, PMID: 24084243, corresponding author.
- 9) Han L., Wang Y., Sangaletti R., D'Urso G., Lu Y., Shaham S., and Bianchi L. Two novel DEG/ENaC channel subunits expressed in glia are needed for nose-touch sensitivity in *Caenorhabditis elegans*. *Journal of Neuroscience*, 33(3): 936-949, 2013, PMID: 23325233, PMCID:PMC3711640, corresponding author.
- 10) Grant J., Tran V., Bhattacharya S. K., and Bianchi L. Ionic currents of human trabecular meshwork cells from control and glaucoma subjects. *Journal of Membrane Biology*, 246(2): 167-75, 2013, PMID: 23135060, PMCID: PMC3557616, corresponding author.
- 11) Wang Y., D'Urso G., and Bianchi L. Knockout of glial channel ACD-1 exacerbates sensory deficits in a *C. elegans* mutant by regulating calcium levels of sensory neurons. *Journal of Neurophysiology*, 107(1): 148-58, 2012. PMID: 21994266, PMCID: PMC3349695, corresponding author.
- 12) Bianchi L. and Diez-Sampedro A. A single amino acid change converts the sugar sensor SGLT3 into a sugar transporter. *PLoS One*, 5(4): e10241, 2010. PMID: 20421923, PMCID: PMC2857651, first author.
- 13) Wang Y. and Bianchi L., Insights into the molecular determinants of proton inhibition in an acid-inactivated degenerins and mammalian epithelial Na⁺ channel. *Biochemistry*, 48 (42), 10005–10013, 2009. PMID: 19769407, PMCID: PMC2764801, corresponding author.
- 14) Wang Y., Apicella A. Jr, Lee S-K, Ezcurra M., Slone R. D., Goldmit M., Schafer W. R., Shaham S., Driscoll M., and Bianchi L. A glial DEG/ENaC channel functions with neuronal channel DEG-1 to mediate specific sensory functions in *C. elegans*. *European Molecular Biology Organization (EMBO) Journal*, 27(18): 2388-2399, 2008. PMID: 18701922, PMCID: PMC2543049, corresponding author.
- 15) Zhang W.*, Bianchi L.*, Lee W.-H., Wang Y., Israel S., and Driscoll M. Intersubunit interactions between mutant DEG/ENaCs induce synthetic neurotoxicity. *Cell Death and Differentiation*, 15(11): 1794-1803, 2008. PMID: 18670436

*These two authors contributed equally to this work, co-first author.

- 16) Tsechpenakis G.*, Bianchi L.*, Metaxas D., and Driscoll M. A novel computational approach for simultaneous tracking and feature extraction of *C. elegans* populations in fluid environments. *Institute of Electrical and Electronics Engineers (IEEE) Transactions in Biomedical Engineering*, 55(5): 1539-1549, 2008. PMID: 18440900 *These two authors contributed equally to this work, co-first author.
- 17) Royal D. C.*, Bianchi L.*, Royal M. A., Lizzio M. Jr., Mukherjee G., Nunez, Y. O., and Driscoll M. Temperature-sensitive mutant of the *Caenorhabditis elegans* neurotoxic MEC-4(d) DEG/ENaC channel identifies a site required for trafficking or surface maintenance. *The Journal of Biological Chemistry*, 280(51): 41976-41986, 2005. PMID: 16239217 *These two authors contributed equally to this work, co-first author.
- 18) Bianchi L., Gerstbrein B., Frøkjær-Jensen C., Royal D. C., Mukherjee G., Royal M. A., Xue J., Schafer W. R., and Driscoll M. The Neurotoxic MEC-4(d) DEG/ENaC sodium channel conducts calcium: implications for necrosis initiation. *Nature Neuroscience*, 7 (12): 1337-1344, 2004. PMID: 15543143, first author.

- 19) Suzuki H., Kerr R., Bianchi L., Frøkjær-Jensen C., Slone D., Xue J., Gerstbrein B., Driscoll M., and Schafer W. R. *In vivo* imaging of *C. elegans* mechanosensory neurons demonstrates a specific role for the MEC-4 channel in the process of gentle touch sensation. **Neuron**, 39(6): 1005-1017, 2003. PMID: 12971899
- 20) Bianchi L., Kwok S. K., Driscoll M., and Sesti F. A potassium channel-MiRP complex controls neurosensory function in *Caenorhabditis elegans*. **The Journal of Biological Chemistry**, 278: 12415-12424, 2003. PMID: 12533541, first author.
- 21) Rutledge E., Bianchi L., Christensen M., Boehmer C., Morrison R., Broslat A., Beld A. M., George A. L. Jr., Greenstein D., and Strange K. CLH-3, a CIC-2 anion channel ortholog activated during meiotic maturation in *C. elegans* oocytes. **Current Biology**, 11 (3): 161-170, 2001. PMID: 11231150
- 22) Bianchi L., Miller D. M. 3rd, and George A. L. Jr. Expression of a CIC chloride channel in *Caenorhabditis elegans* gamma-aminobutyric acid-ergic neurons. **Neuroscience Letters**, 299 (3): 177-180, 2001. PMID: 11165764, first author.
- 23) Bianchi L., Priori S. G., Napolitano C., Surewicz, K. A., Dennis A. T., Memmi M., Schwartz P. J., and Brown A. M. Mechanisms of I_{Ks} suppression in LQT1 mutants. **American Journal of Physiology**, 279: H3003-H3011, 2000. PMID: 11087258, first author.
- 24) Napolitano C., Schwartz P. J., Brown A. M., Ronchetti E., Bianchi L., Pinnavaia A., Acquaro G., and Priori S. G. Evidence for a cardiac ion channel mutation underlying drug-induced QT prolongation and life-threatening arrhythmias. **Journal of Cardiovascular Electrophysiology**, 11 (6): 691-696, 2000. PMID: 10868744
- 25) Emmi A., Wenzel H. J., Schwartzkroin P. A., Tagliatela M., Castaldo P., Bianchi L., Nerbonne J., Robertson G. A., and Janigro D. Do glia have heart? Expression and functional role for ether-a-go-go currents in hippocampal astrocytes. **Journal of Neuroscience**, 20 (10): 3915-3925, 2000. PMID: 10804231
- 26) Bianchi L., Priori S. G., Shen Z.-J., Dennis A. T., Napolitano C., Ronchetti E., Bryskin R., Schwartz P. J., and Brown A. M. Cellular dysfunction of LQT5-minK mutants: abnormalities of I_{Ks} , I_{Kr} and trafficking in LQT syndrome. **Human Molecular Genetics**, 8 (8): 1499-1507, 1999. PMID: 10400998, first author.
- 27) Schwalbe R.A., Bianchi L., Accili E.A., and Brown A.M. Functional consequences of ROMK mutants linked to antenatal Bartter's syndrome and implications for treatment. **Human Molecular Genetics**, 7 (6): 975-980, 1998. PMID: 9580661.
- 28) Priori, S. G., Schwartz, P. J., Napolitano, C., Bianchi L., Dennis, A., De Fusco M., Brown A. M., and Casari, G. A recessive variant of the Romano-Ward syndrome? **Circulation**, 97(24): 2420-2425, 1998. PMID: 9641694.
- 29) Bianchi L., Wible B., Arcangeli A., Tagliatela M., Morra F., Castaldo P., Crociani O., Rosati B., Faravelli L., Olivotto M., and Wanke E. *Herg* encodes a K^+ channel highly conserved in tumors of different histogenesis: a selective advantage for cancer cells? **Cancer Research**, 58 (4): 815-822, 1998. PMID: 9485040, first author.
- 30) Schwalbe R.A., Bianchi L., and Brown A.M. Mapping the kidney potassium channel ROMK1. Glycosylation of the pore signature sequence and the C-terminus. **The Journal of Biological Chemistry**, 272(40): 25217-25223, 1997. PMID: 9312136
- 31) Guatteo E., Bianchi L., Faravelli L., Verotta L., Pellizoni F., Rogers C. B., and Wanke E. A novel K^+ channel blocker isolated from "Hiccup Nut" toxin. **Neuroreport**, 7(15-17): 2575-2579, 1996. PMID: 8981426
- 32) Schwalbe R. A., Wang Z., Bianchi L., and Brown A. M. Novel sites of N-glycosylation in ROMK1 reveal the putative pore-forming segment H5 as extracellular. **The Journal of Biological Chemistry**, 271: 24201-24206, 1996. PMID: 8798662
- 33) Arcangeli A., Faravelli L., Bianchi L., Rosati B., Gritti A., Vescovi A., Wanke E., and Olivotto M. Soluble or bound laminin elicits in human neuroblastoma cells short-or long-term potentiation of a K^+ inwardly rectifying

current: relevance to neuritogenesis. *Cell Adhesion and Communication*, 4(4-5): 369-385, 1996. PMID: 9117354

- 34) Bianchi L.*, Roy M. L.*, Tagliatela M., Lundgren D.W., Brown A.M., and Ficker E. Regulation by spermine of native inward rectifier K⁺ channels in RBL-1 cells. *The Journal of Biological Chemistry*, 271: 6114-6121, 1996. PMID: 8626398 *These two authors contributed equally to this work, co-first author.
- 35) Arcangeli A., Bianchi L., Becchetti A., Faravelli L., Coronello M., Mini E., Olivotto M., and Wanke E. A novel inward-rectifying K⁺ current with a cell-cycle dependence governs the resting potential of mammalian neuroblastoma cells. *The Journal of Physiology*, 489: 455-471, 1996. PMID: 8847640
- 36) Bianchi L., Arcangeli A., Bartolini P., Mugnai G., Wanke E., and Olivotto M. An inward rectifier K⁺ current modulates in neuroblastoma cells the tyrosine phosphorylation of the pp125^{FAK} and associates proteins: role in neuritogenesis. *Biochemical and Biophysical Research Communications*, 210(3): 823-829, 1995. PMID: 7539261, first author.
- 37) Wanke E., Bianchi L., Mantegazza M., Guatteo E., Mancinelli E., and Ferroni A. Muscarinic regulation of Ca²⁺ currents in rat sensory neurons: channel and receptor types, dose-response relationships and cross-talk pathways. *European Journal of Neuroscience*, 6(3): 381-391, 1994. PMID: 8019675.

20. Other works, publications and abstracts

Reviews:

1 as corresponding author, 1 as first author

- 1) Bianchi L., Mechanotransduction: touch and feel at the molecular level as modeled in *Caenorhabditis elegans*. Review, *Molecular Neurobiology*, 36(3): 254-271, 2007. PMID: 17955200.
- 2) Bianchi L. and Driscoll M., Protons at the gate: DEG/ENaC ion channels help us feel and remember. Review, *Neuron*, 34(3): 337-340, 2002. PMID: 11988165, first author.
- 3) George A. L. Jr., Bianchi L., Link E. M., and Vanoye C. G. From stones to bones: the biology of CIC chloride channels. Review, *Current Biology*, 11(15): R620-628, 2001. PMID: 11516971.

Recent (last 5 years) abstracts presented at national or international meetings:

- 1) Matthewman C., and Bianchi L. "Contribution of DEG/ENaC channels conductance versus Ca²⁺ permeability to neuronal death. **International C. elegans Meeting**, Los Angeles, CA, 2015.
- 2) Miller-Fleming T., Petersen S. C., Manning L., Matthewman C., Gornet M., Hori S., Mitani S., Bianchi L., Richmond J. E., and Miller D. M. III "The degenerin/epithelial sodium channel protein UNC-8 drives activity-dependent synaptic remodeling in GABAergic neurons." **International C. elegans Meeting**, Los Angeles, CA, 2015
- 3) Grant J., Matthewman C., Johnson C., Bianchi L. "CLH-1 is a bicarbonate permeable anion channel involved in amphid sheath glia pH regulation." **International C. elegans Meeting**, Los Angeles, CA, 2015 (abstract selected for platform presentation).
- 4) Sangaletti R., Dahl G., Bianchi L. "C. elegans touch neurons express plasma membrane innexin channels". **International C. elegans Meeting**, Los Angeles, CA, 2015.
- 5) Sangaletti R., Grant J., Della Morte D., Bianchi L. "Neuroprotective role of C. elegans sir-2.3 knock out in neuronal death". **International C. elegans Meeting**, Los Angeles, CA, 2015.
- 6) Sangaletti R., Dahl G., Bianchi L. Mechanosensitive plasma membrane innexin channels in native C. elegans touch neurons. **Florida Worm Meeting**, Melbourne, FL, 2015.

- 7) Grant J., Matthewman C., Johnson C., Bianchi L. "CLH-1 is a proton-activated anion channel that regulates amphid sheath glia pH through bicarbonate flux. **Florida Worm Meeting**, Melbourne, FL, 2015 (abstract selected for platform presentation).
- 8) Sangaletti R., Grant J., Bianchi L. "Innexins function as plasma membrane channels in native *C. elegans* touch neurons". **C. elegans Neuro meeting**, Madison, WI, 2014.
- 9) Miller-Fleming T., Petersen S. C., Gornet M., Matthewman C., Wang Y., Han L., Bianchi L., Richmond J., Miller III D.M. "The degenerin family ion channel UNC-8 remodels GABAergic synapses in an activity-dependent pathway." **C. elegans Neuro meeting**, Madison, WI, 2014.
- 10) Grant J. and Bianchi L. "Unique mechanisms of pH regulation in *C. elegans* amphid sheath glia." **C. elegans Neuro meeting**, Madison, WI, 2014.
- 11) Sangaletti R., Dahl G., Bianchi L. "Innexins function as plasmamembrane unpaired channels in native *C. elegans* touch neurons". **Society for Neuroscience meeting**, Washington, DC, 2014.
- 12) Safratowich B. D., Hossain M., Lor C., Brose S. A., Golovko M. Y., Bianchi L. and Carvelli L. "Beyond the dopamine transporter: discovering a new amphetamine target." **Brain in Flux Symposium**, Cancun Mexico, 2013.
- 13) Safratowich B. D., Hossain M., Bianchi L. and Carvelli L. "An in vivo and in vitro study of amphetamine and β -phenylethylamine effects: functional similarities, differences and interactions." **SFB35-Symposium, Transmembrane Transporters in Health and Disease**, Vienna, Austria, 2013 (abstract selected for platform presentation).
- 14) Safratowich B. D., Hossain M., Lor C., Bianchi L. and Carvelli L. "Amphetamine and β -Phenylethylamine Activate an Amine-Gated Chloride Channel". **International C. elegans meeting**, Los Angeles, CA, 2013.
- 15) Grant, J. and Bianchi L. "Transport mechanisms involved in pH regulation of *C. elegans* amphid sheath glia". **International C. elegans meeting**, Los Angeles, CA, 2013.
- 16) Sangaletti R., and Bianchi L. "Mechanosensitive innexin channels in *C. elegans* touch neurons". **International C. elegans meeting**, Los Angeles, CA, 2013.
- 17) Han L., Wang Y., D'Urso G., Lu Y., Shaham S., and Bianchi L. "Understanding the role of DEG/ENaC channels expressed in glia in nose touch sensitivity". **C. elegans Neuro meeting**, Heidelberg, Germany, 2012.
- 18) Grant J. and Bianchi L. "Mechanisms of pH regulation in *C. elegans* amphid sheath glia". **Society for Neuroscience meeting**, New Orleans, LA, 2012.
- 19) Kamat S., Yeola S., Zhang W., Driscoll M. and Bianchi L. "Modulation of hyperactivated ion channel induced necrosis by ER-associated chaperone NRA-2". **C. elegans Neuro meeting**, Heidelberg, Germany, 2012.
- 20) Han L., Wang Y., Lu Y., Shaham S. and Bianchi L. "Two novel DEG/ENaC channel subunits expressed in glia play an essential role in *C. elegans* touch sensitivity". Abstract, **International C. elegans meeting**, Los Angeles, CA, 2011 (abstract selected for platform presentation).
- 21) Wang Y., Han L., D'Urso G. and Bianchi L. "Degenerin channels in *C. elegans*". Abstract, **FASEB Summer Research Conference - Ion Channel Regulation**, 2011 (invited talk).

21. **Other works:** none

V. PROFESSIONAL

22. **Funded research**

Current:

National Institutes of Health Grant **R01 NS070969-04A1** (2/2011-1/2016), currently on no cost extension (1/2016-11/2016)

"Glia in Touch Sensation"

Laura Bianchi, PI

Direct cost: \$1,093,750; Indirect cost: \$605,777; Total cost: \$1,657,440. 50% effort.

Score 10, percentile 1.0

This research project investigates the role of sodium channels of the DEG/ENaC family expressed in glia associated with touch neurons in regulating touch neurons excitability in *C. elegans*.

National Institutes of Health Grant **R01 NS081259-02A1** (6/2013-5/2017)

"Molecular determinants of synaptic plasticity"

Laura Bianchi, co-PI

David M. Miller, PI

Janet E. Richmond, co-PI

Direct cost: \$148,000; Indirect cost: \$ 80,000; Total cost: \$228,000. 8% effort.

This projects aims at understanding the role of Na⁺ channels of the DEG/ENaC family in synaptic remodeling during development.

National Institutes of Health Grant **S10 OD012006-02A1** (6/2013-6/2014)

"Union Biometrica BIOSORTER PRO large particle flow cytometer"

Charles F. Bear, PI

Laura Bianchi, major user

Rebecca Butcher, major user

Keith Choe, major user

Arthur Edison, major user

\$ 600,000

This grant supports the purchase of a worm sorter, an instrument that sorts *C. elegans* based on their size and expression of fluorescent proteins.

Completed:

University of Miami **SAC pilot project award** (2/2014-1/2015)

"Role of sirtuins in neurodegeneration"

Laura Bianchi, PI

Direct cost: \$20,000

This is a pilot project to develop a model in *C. elegans* to study the role of protein deacetylases sirtuins in the process of pathological neuronal death.

American Cancer Society **RGS-09-043-01-DDC** (1/2009-12/2012, 12/2012-12/2013 no cost extension)

"Molecular dissection of pain signals in *C. elegans*"

Laura Bianchi, PI,

Direct cost: \$596,463; Indirect cost: \$109,492; Total cost: \$ 705,955

Ranking: outstanding

This project aimed at deciphering the role of glial and neuronal channels sensitive to acidic pH in mediating *C. elegans* avoidance of acidic environments, a behavior that models pain sensation in mammals.

National Institutes of Health Grant **R21 NS049511** (7/2004-7/2006)

"Mechanosensitive channels in sensory perception in *C. elegans*"

Laura Bianchi, PI

Direct cost: \$150,000; Indirect cost: \$83,250; Total cost: \$ 233,250

This project was aimed at dissecting the specific roles of DEG/ENaC and Trp ion channels in sensory behaviors mediated by two different types of touch neurons in *C. elegans*.

23. Editorial responsibility: none

24. Professional and honorary Organizations:

2012-present Member for Society for Neuroscience

2000-present Member of Biophysical Society

2014 Member of Genetics Society of America

25. Honors and awards

U-Choose SEEDS award (2010)

"Biophysics, a male-dominated scientific discipline: a woman's perspective"

\$2,500 in funds to invite 3 established women in Physiology/Biophysics for seminars and mentoring events.

Laura Bianchi, PI

FASI Award (Faculty Academic Service Increment) in recognition of the quality of service to the University - 2004 and 2005.

26. Postdoctoral fellowships awarded:

National Kidney Foundation Fellowship Grant, 1999-2001.

American Heart Association Fellowship Grant, 1998-2000.

27. Other professional activities:

Grant reviewer:

- NIH Sensory and Motor Neuroscience Cognition and Perception Fellowship Study Section F02B – 2014-present.
- The Children Tumor Foundation, the Young Investigator Award (YIA), - 2013-present.
- NIH Somatosensory and Chemosensory Systems Study Section, - 2012.
- NSF, - 2011.
- Swiss National Science Foundation, - 2010.
- American Cancer Society, - 2009-2010.
- NIH Biophysics of Neuronal Systems study section, - 2008-2009.

Reviewer for the following journals:

2015 - Genes Genome Genetics

2014	-	American Journal of Cell Physiology
2013	-	Plos Genetics
2013	-	Journal of Physiology
2012	-	Journal of Neuroscience
2011	-	Journal of Molecular Biology
2011	-	The book " <i>Caenorhabditis elegans</i> : Modern Biological Analysis of an Organism"
2010	-	Biochemistry
2009	-	Biochimica et Biophysica Acta (BBA) Biomembranes
2009	-	BioMedical Center (BMC) Structural Biology
2009	-	Biophysical Journal
2009	-	Journal of Biological Chemistry
2009	-	European Molecular Biology Organization (EMBO) Journal
2009, 2011	-	Current Biology
2008	-	Journal of Neurophysiology
2008	-	Journal of Structural Biology
2008	-	Nature Neuroscience

Served on scientific meeting committees:

- Session chair and abstract selection committee, *C. elegans* meeting - 2012, 2009 and 2008.
- Invited speaker and session chair at FASEB Summer Research Conference - Ion Channel Regulation, - 2011.

Speaking invitations outside the University of Miami:

1. **Scripps Florida**, February, 2014.
2. Invited talk, West Palm Beach American Cancer Society Laureate society, December, 2013.
3. Hosted lunch meeting, Miami American Cancer Society Laureate society, May, 2013.
4. Invited talk, Jacksonville, FL American Cancer Society Laureate society dinner, November, 2012.
5. Dept. Neurobiology, **University of Alabama at Birmingham**, October, 2012.
6. Dept. General Physiology and Biochemistry, **University of Milan (Italy)**, April, 2012.
7. Dept. Pharmacology, **City University of New York**, March, 2012.
8. Dept. Molecular Biology and Biochemistry, **Rutgers University**, March, 2012.
9. **International C. elegans meeting**, Los Angeles, CA, 2011.
10. **FASEB Summer Research Conference - Ion Channel Regulation**, 2011.
11. Dept. Medicine, **Vanderbilt University**, Nashville, 2009.
12. **International C. elegans meeting**, Los Angeles, CA, 2009.
13. **C. elegans Neuro-meeting**, Madison, WI, 2008.
14. Dept. Biology, **City University of New York**, NY, 2006.
15. Dept. Pharmacology and Toxicology, **University of Utah**, UT, 2006.
16. Dept. Basic Medical Sciences, **University of Arizona**, Phoenix, AZ, 2006.
17. Dept. Physiology, **Emory University**, Atlanta, GA, 2006.

18. Dept. Anatomy and Cell Biology, **State University of New York Downstate**, Brooklyn, NY, 2006.
19. Dept. Physiology, **Loyola University**, Chicago, IL, 2006.
20. Dept. Anatomy and Neurobiology, **Washington University**, St. Louis, MO, 2005.
21. Dept. Molecular Pharmacology, **Albert Einstein College of Medicine**, Bronx, NY, 2005.
22. Center for Membrane Biology, **University of Texas**, Houston, TX, 2005.
23. Dept. Pharmacology & Biological Chemistry, **Mount Sinai**, New York, NY, 2005.
24. Dept. Pharmacology, **Vanderbilt University**, Nashville, TN, 2005.
25. Dept. Biochemistry and Molecular Biology, **Philadelphia College of Osteopathic Medicine**, Philadelphia, 2005.
26. Dept. Neuroscience, **New York Institute of Technology**, Old Westbury, NY, 2005.
27. Dept. Cellular and Molecular Pharmacology, Chicago Medical School, **Rosalind Franklin University of Medicine and Science**, North Chicago, 2005.
28. Dept. Physiology and Pharmacology, **University of Medicine and Dentistry New Jersey**, Newark, NJ, 2005.
29. Dept. Biochemistry & Molecular Pharmacology, **Thomas Jefferson University**, Philadelphia, PA, March, 2005.
30. Dept. Cell Biology and Molecular Medicine, **University of Medicine and Dentistry New Jersey**, Newark, NJ, 2005.
31. **American Society for Cell Biology**, Washington, DC, 2004.
32. **Ion Channels in Drug Discovery and Development Conference**, Philadelphia, 2004.
33. **West Coast Worm Meeting**, Santa Barbara, CA, 2004.
34. **East Coast Worm Meeting**, Yale University, CT, 2004.
35. **West Coast Worm Meeting**, San Diego, CA, 2002.
36. **East Coast Worm Meeting**, University of New Hampshire, Durham, NH, 2002.
37. **Society for Neuroscience Meeting**, San Diego, CA, 1995.

VI. TEACHING

28. **Teaching awards received:** none

29. **Teaching Specialization (courses taught)**

Neuroscience, Biophysics, Physiology, and Model organisms.

Courses taught at the University of Miami:

Medical student teaching:

Physiology section of Cellular Function and Regulation Course (traditional curriculum):

- Co-course coordinator (with Dr. Ellen Barrett) in charge of small group conferences and scientific literature section, 2014. (This is a 4 weeks course).
- 2 x 1 hr lectures on Synaptic Chemistry, 2008-present.
- Led 4 small group conferences (2 hr each) reviewing assigned questions on all topics, 2007-present.

Neuroscience Module (MD/MPH Curriculum): 1 hr lecture on Synaptic Chemistry, 2012-present.

Respiratory Module (traditional curriculum):

- Led 2 small group conferences reviewing assigned questions on basic science topics (3 hr each), 2008-present.
- Led rotation on Anatomical and Physiological Dead Space in Pulmonary Function Lab (8 x 45 min), involving measurements and calculations, 2008-present.

Graduate student teaching:

Lectures:

- "Methods to study membrane proteins, II", Program in Biomedical Sciences 601, 2012-present.
- Led small group conference reviewing original literature (1 hour), Cellular Pharmacology program (MCP) 605, 2010-2011, 2013.
- "C. elegans as a model system of human disease and drug development", Molecular and Cellular Pharmacology program (MCP) 605, 2010-2011. (Course cancelled in 2012).
- Led 3 small group conferences reviewing original literature (1 hr each), Program in Biomedical Sciences 602, 2009-present.
- Led Neuroscience Journal Clubs (4 to 5, 1 hr each), 2008-2011
- "Model organisms: C. elegans and Drosophila", Program in Biomedical Sciences 601, 2007-present.
- Led small group lab demonstrations (8 hr) introducing C. elegans as a model organism, Interdisciplinary Program in Biomedical Sciences (IBS) 601, "Neuroscience techniques", 2007-2008.

Teaching related activities:

- Co-conducted with Dr. Mary Lou King a workshop on grant writing for students and postdocs, April and May, 2014.
- Organized a workshop for postdocs on how to start a lab, 2012.
- Participated in the Neuroscience open house, 2011-present.
- Led Neuroscience Guest Speaker Symposium, April, 2011 (Dr. M. Caterina).
- Led and co-organized Physiology and Biophysics Dept. open house, 2010-present.
- Neuroscience retreat (2006-present), Invited speaker in 2007, 2011.
- Co-coordinated a grant-writing course for students and postdocs, 2007.

Courses taught at Rutgers University:

Graduate teaching:

- Organized weekly meetings to discuss chapters in "Ion channels of excitable membranes" by Bertil Hille: Rutgers University in 2003, Vanderbilt University in 2000.

Student supervision:

- Supervised 2 undergraduate students during lab rotation and preparation of honor Henry Rutgers thesis (Lyudmila Kotlyanskaya, 2005-2006, Plinio Silva, 2003-2004).

30. Thesis and Dissertation Advising/Post-doctoral student supervision

Supervision:

Postdoctoral students:

1. Rachele Sangaletti, University of Miami, 2012-present.
2. Jeff Grant, University of Miami, 2011-present.
3. Ying Wang, University of Miami, 2007-2013.

Doctoral students:

1. Christina Johnson, temporary thesis title "*Glia in touch sensitivity*" University of Miami, Physiology and Biophysics Graduate Program, 2015-present.
2. Massimo D'Amico, Thesis title "Targeting Nrf2 Pathway for Neuroprotection and Reduction Levodopa-Induced Toxicity in Parkinson's Disease" exchange graduate student from the University of Bologna, Italy, 2105.
3. Valeria Rossetti, Thesis title "*Short- and long- term effects of cigarette Smoke Exposure on Glutathione homeostasis in Human Bronchial Epithelial cells*", exchange graduate student from the University of Milan, Italy, 2014.
4. Yunji Choi, Preliminary Thesis title: "*Glia in the function of the nervous system*". University of Miami, Physiology and Biophysics Graduate Program, 2013-present.
5. Cristina Matthewman, Thesis title: "*Functional Features of DEG/ENaC channel UNC-8 involved in neuronal death*". University of Miami, Neuroscience Graduate Program, 2012-present.
6. Rachele Sangaletti, Thesis title "*A new isoform of PEPT1 (sbPEPT1) and ion channels in touch sensation: Biophysical and Electrophysiological characterization*", exchange graduate student from the University of Insubria, Italy. University of Miami, May-November 2010 and May-November 2011.
7. Lu Han, Thesis title: "*Role of DEG/ENaC channels expressed in glia in C. elegans touch sensitivity*". University of Miami, Physiology Graduate Program, 2008-2012.

Undergraduate students:

1. Diana Cristina Lopez, University of North Carolina, 2015.
2. Khrystel Bernard, University of Miami, 2015.
3. Priyansh Patel, University of Miami, 2014-2015.
4. Emma Torncello, University of Miami, 2014.
5. Maanasa Jayachandran, University of Miami, 2010.
6. Sophia Hassor, University of Miami, 2009-2010.
7. Sarah Shafi, University of Miami, 2008.
8. Lyudmila Kotlyanskaya, Rutgers University, 2005-2006.
9. Plinio Silva, Rutgers University, 2003-2004.

Rotation students:

1. Cristina Johnson, Physiology and Biophysics, 2015.
2. Alina Ionescu, PIBS, 2014.
3. Bhavia Ravi, PIBS, 2014.
4. Yunji Choi, University of Miami, PIBS, 2013.
5. Genea Edwards, PIBS, 2012.
6. Cristina Matthewman, University of Miami, PIBS, 2011.
7. Julia Escandon, University of Miami, PIBS, 2011.

8. Sharon Lines, University of Miami, PIBS, 2010.
9. Lu Han, University of Miami, Physiology Graduate Program, 2008.
10. Alicia Pickrell, University of Miami, Neuroscience Program, 2008.
11. Mingji Jin, University of Miami, Physiology Graduate Program, 2007.
12. Betty Ghetea-Brener, University of Miami, Physiology Graduate Program, 2007.

Other lab supervisions:

1. Lauren Podkowirow, University of Miami, MD student, 2010.
2. Giulia D'Urso, University of Miami, Research Associate, 2009-2011.
3. Kevin Tomecsek, University of Miami, MD student, 2009.
4. Karishma Habbu, University of Miami, high school student, 2008.

Appointments to Ph.D. committees:

1. Thesis committee member, Title: "*Structural optimization and behavioral analysis of antagonists of the insect odorant receptor co-receptor subunit*", Devin Kepchia, University of Miami, Molecular and Cellular Pharmacology Graduate Program, 2015-present.
2. Thesis committee member, Title: "*MicroRNAs Regulate the Neuroprotective Efficacy of NMNAT*", Joun Park, University of Miami, Neuroscience Graduate Program, 2015-present.
3. Qualifier exam neuroscience steering committee member, Title: "*Optogenetic regulation of retinal ganglion cell survival and axonal regeneration*", Yuan Liu, University of Miami Neuroscience Graduate Program, November 3rd 2014.
4. Thesis committee chair, Title: "*Inhibition of Pannexin 1 as a potential therapy for secondary cell death in SCI*", David George Jackson, University of Miami, Physiology and Biophysics Graduate Program, 2013-present.
5. Thesis committee chair, Title: "*Exploring the coding mechanism of the geniculate ganglion by multi-neuronal calcium imaging technique*", An Wu, University of Miami, Neuroscience Graduate Program, 2013-present.
6. Qualifier exam committee member, Title: "*Modulating post-injury transmitter levels leads to improved synaptic function*", Emmanuel Perez Martinez, University of Miami, Neuroscience Graduate Program, 2013.
7. Qualifier exam committee member, Title: "*The function of astrocytes' NF-kB pathway in EAE Model*", Han Gao, University of Miami, Neuroscience Graduate Program, 2013.
8. Qualifier exam committee member, Title: "*Role of fibronectin in the fibrotic scar after spinal cord injury*", Yunjiao Zhu, University of Miami, Neuroscience Graduate Program, 2012.
9. Thesis committee member, Title: "*Intrinsic and extrinsic regulation of electrophysiological development in retinal ganglion cells*", Praseeda Venugopalan, University of Miami, Neuroscience Graduate Program, 2011-present.
10. Qualifier exam committee member, Title: "*Analysis of the obsessive-compulsive spectrum disorder*", Uzoezi Ozomaro, University of Miami, Neuroscience Graduate Program, 2008.

VII. service

31. University Committee and Administrative Responsibilities

Departmental:

2012-present	Member of Graduate Studies Committee, Department of Physiology and Biophysics.
2007-2008	Member of Faculty Search Committee, Department of Physiology and Biophysics.
2006-present	Invited and hosted 6 outside speakers.

Graduate School:

- 2013-present Member, Graduate Program in Biomedical Science (PIBS) Admission committee.
- 2011-present Member, Neuroscience Steering Committee.
- 2010 Mentor at a postdoctoral fellows mentoring event organized by SEEDS.
- 2009-present Member, Neuroscience Curriculum Committee. Chair since 2014.
- 2008 Member, Neuroscience Center seminar speaker selection committee.
- 2007 Member, Unified Admission Committee: researched and evaluated the pros and cons of a unified admission and unified core courses for the graduate program in biomedical sciences.

32. Community Activities:

- 2013-2015 Poster judge at the University of Miami Annual Neuroscience Research day.
- 2011-2013 Poster judge at the International and Neuro *C. elegans* meeting.
- 2009 Poster judge at University of Miami Undergraduate Research symposium.