Jenny I. Aguilar
1901 18th Ave S• Apt. 203• Nashville, TN 37212
jenny.i.aguilar@vanderbilt.edu • (914) 409-8731 (c)

EDUCATION

2014-2019 **VANDERBILT UNIVERSITY**, NASHVILLE, TN
Graduate Student in Pharmacology, GPA 3.97

2007-2011 **PRINCETON UNIVERSITY**, PRINCETON, NJ
Bachelor of Arts in Chemistry, Minor in Neuroscience

2002-2007 **PREP FOR PREP,** NEW YORK, NY
New York Metro Region Leadership Academy, Contingent II
A highly selective leadership program to prepare students of color through high school graduation.

EXPERIENCE

June 2015-present **VANDERBILT UNIVERSITY**, NASHVILLE, TN
Pharmacology Graduate Student, *Broadie Lab*
- Utilize a combination of microscopy, pharmacology, and electrophysiology to assess the role of ion channels in synaptic and circuit hyperexcitability in a *Drosophila* model of Fragile X Syndrome (FXS)

Sept 2014-May 2015 **VANDERBILT UNIVERSITY**, NASHVILLE, TN
- Compared the therapeutic efficacy of various pharmacological agents in ameliorating the structural defects in a *Drosophila* model of FXS using confocal microscopy. *Broadie Lab*
- Utilized the principles of extended connectivity fingerprints to write a program in C^{++} for small-molecule chemical similarity searches in ligand-based computer-aided drug design. *Meiler Lab*
- Performed extracellular field recordings in acute mouse hippocampal slices to investigate the role of phospholipase D in metabotropic glutamate receptor-dependent hippocampal LTD. *Conn Lab*
- Examined the effects of calcium in modulating SERT-dependent catecholamine secretion in mouse adrenal chromaffin cells using calcium imaging and whole-cell patch clamp recording. *Currie Lab*

Sept. 2011-July 2014 **COLUMBIA UNIVERSITY MEDICAL CENTER**, NEW YORK, NY
- Conducted research for Drs. Jonathan Javitch and Zachary Freyberg to study the synaptic signaling mechanisms underlying amphetamine action and vesicular dopamine storage in *Drosophila* using a combination of genetics, pharmacology and multiphoton microscopy *in vivo*
- Developed quantitative techniques to measure dopamine release from single monoaminergic nerve terminals in synaptic vesicles and insulin secretory cells.

Feb. 2010-June 2011 **PRINCETON UNIVERSITY**, PRINCETON, NJ
- Conducted research for Dr. Lisa Boulanger to investigate the effects of acute knock-down of MHCI expression in hippocampal neurons using RNAi.
- Adapted Non-stationary Noise Analysis to characterize the single channel properties of synaptic N-methyl-D-aspartate Receptors in neurons.

Summer 2009 **HUMBOLDT UNIVERSITY,** BERLIN, GERMANY
- Mastered basic electrophysiological techniques including whole-cell patch clamp under the supervision of Dr. Uwe Heinemann.

Summer 2009 **UNIVERSTIY OF SOUTH BOHEMIA**, CZECH REPUBLIC
- Awarded a grant by Princeton's International Internship Program to develop a novel Couette-Taylor photobioreactor under the supervision of Dr. Stepan Papacek. Determined the impact of inner cylinder rotations on the growth of *Chlorella kessleri* algal cultures.

May 2006-2008 **NEW YORK MEDICAL COLLEGE**, VALHALLA, NY
- Awarded a scholarship from the New York Academy of Sciences to conduct research for Dr. Patric K. Stanton assessing an N-methyl-D-aspartate partial agonist, Glyxin-13 as a neuroprotectant in organotypic hippocampal cell cultures.

Summer 2007 **WEILL CORNELL MEDICAL CENTER**, NEW YORK, NY
- Awarded a scholarship from the National Institute of Health to conduct research for Drs. Timothy McGraw and Eva Gonzales to assess the role of Phospholipase D1 in GLUT4 trafficking.

PUBLICATIONS

2016 **Aguilar J,** Dunn M, Mingote S, Choi B, Grygoruk A, Banerjee S, Cela Ramos C, Farino Z, Sonders M, McCabe B, Javitch J, Sulzer D, Rayport S, Freyberg Z. A novel role for VGLUT in stimulation-dependent regulation of dopamine vesicle quantal size. Neuron, *Manuscript in preparation*

2016 **Aguilar J,** Farino Z, Sonders M, Javitch J, Freyberg Z. A role for calcium signaling in catecholamine release *Manuscript in preparation*

2016 Morgenstern T, **Aguilar J**, Hampton S, Levy E, Anderson R, Haghighi G, Frank J. Javitch J, Freyberg Z. Dopamine D_2 receptors modulate dynamics of glucose stimulated granule release in insulin secretory cells. *Manuscript in preparation*

2016 Hampton C, Carter S, Langlois R, Grassucci R, Farino Z, Morgenstern T, Rice W, Velasco K, Wigge C, Mitchell W, Yi E, **Aguilar J,** Levy E, Greenberg N, Courel M, Mahata S, Freyberg R, Javitch J, Area-Gomez E, Jensen G, Joachim F, Freyberg Z. Mammalian 80S Ribosomes Associate with a Novel Vesicular Organelle. Nature Communications *Manuscript under revision*

2015 Freyberg Z, Sonders M, **Aguilar J**, Hiranita T, Karam C, Flores J, Pizzo A, Zhang Y, Farino Z, Chen A, Martin C, Kopajtic T, Fei H, Hu G, Lin Y, Mosharov E, McCabe B, Freyberg R, Wimalasena K, Hsin LW, Sames D, Krantz D, Katz J, Sulzer D, Javitch J. Mechanisms of amphetamine action illuminated through optical monitoring of dopamine synaptic vesicles in *Drosophila* Brain. Nature Communications. *Manuscript accepted*

2009 Stanton, P.K., Potter P.E**., Aguilar J.**, Decandia M., Moskal J. R., (2009) Neuroprotection by a novel NMDAR functional glycine site partial agonist, GLYX-13. *NeuroReport*. 20:1193:1197

SCHOLARSHIPS & AWARDS

2015-2016 **NIH T32 Training Grant Fellow in the Pharmacological Sciences,** awarded to students to be trained in the pharmacological sciences: Systems, Targets, and Drug Action, Receptors and Signal Transduction.

2014-2018 **Vanderbilt University's Provost Graduate Fellowship,** awarded to highly qualified under-represented minority graduate students

2010 **Princeton Chemistry Department**, awarded funding to conduct senior thesis research

2008 **Princeton's International Internship Program**, awarded a grant to conduct research in the University of South Bohemia as part of the Biological Engineering Group in the Institute of Physical Biology

2007 **STEP-UP Summer Internship Program**, awarded to students from backgrounds underrepresented in biomedical research by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (NIH)

2007 **The Frederick M. Breitbarth Memorial Scholarship Fund,** awarded to rising college freshman who on the basis of scholarship, participation and service in school and community activities, best expressed "Service Above Self"

2007 **The Nancy Jo Abeles Scholarship**, awarded to rising college freshman for extraordinary commitment to community service and performance in a given academic discipline

2007 **The John Chesslin Scholarship,** awarded to rising college freshman for a record of high academic achievement.

LEADERSHIP & MENTORING

2015-present **VANDERBILT UNIVERSITY,** NASHVILLE, TN
- Organized a panel for the Vanderbilt Summer Academy to encourage students underrepresented in the sciences to apply to graduate programs. Panel discussion covered the application process, interviews, research experience, and choosing a graduate program.
- Volunteered to lead & organize test prep sessions for the first year students in the Initiative for Maximizing Student Diversity (IMSD) program
- VP Finance, Pharmacology Graduate Student Association

2013-present **Nayarith Encalada,** Hunter College
Tutor, College Advisor & Mentor
- Tutored student on a weekly basis for several months in preparation for the SATs (overall SAT score saw 150 point improvement)
- Worked with student through various versions of a personal statement that told her story as the first in her family to attend to college in the US
- Helped draft a college application list and application
- Continue to advice student on coursework and major choices.

2011-2013 **PREP FOR PREP,** NEW YORK, NY
Tutor
- As part of Prep for Prep's mission to develop leaders through access to superior education, I taught young men and women of color a range of topics including Advanced Placement Biology, Calculus AB, Calculus BC and Chemistry.

2008- 2010 **PRINCETON UNIVERSITY,** PRINCETON, NJ
President, Acción Latina
- Planned events and activities to promote and cultivate a sense of community among Latino students.
- Worked with various student group leaders on collaborative projects to foster an awareness of Latino American topics and affairs amongst all Princeton students.
- Approved and edited budgets for presentation.
- Spearhead the planning and fundraising for Latino Heritage Month 2009 & 2010.

2008-2010 *Executive Committee Chair*, Princeton University Projects Board
- Served on the board of one of the primary funders for all campus events and activities.
- Voted on and determined the conditions for funding specific student group lead events.
- Advised student organizations and their leaders as they planned events, worked towards self-sustainability, and built an active membership.

2008- 2010 *Mentor*, Latinos United for Networking and Advising
- Provided advice and support to first year Latino students in their transition to campus life.
- Coordinated bi-weekly meetings to encourage academic and social exploration.
- Worked to recruit upperclassmen of color with similar academic interests to serve as resource for underclassmen

Summer 2010 *Residential Adviser,* Freshman Scholars Institute
- Facilitated the transition between high school and college by providing advice, support, and fostering a sense of community among scholars.
- Planned, coordinated, and supervised events and activities both on- and off- campus.

Fall 2008 *Executive Committee Chair*, Princeton's Disability Awareness
- Organized a variety of activities including a scavenger hunt, sports, interactive stories, and games for children with Down Syndrome.

PRESENTATIONS & ABSTRACTS

2015 Moran S, Altman M, Maksymetz J, Ghosal A, **Aguilar J,** Hyekyung P, Lindsley C, Conn J. Role of phospholipase D in mGluR-dependent hippocampal and muscarinic-dependent cortical long-term depression, *Society for Neuroscience*

2013 *Abstract:* Freyberg, Z, Sonders L, Flores J, **Aguilar J**. Novel Mechanisms of Amphetamine Action on Dopamine Neurons in Drosophila. *International Stress and Behavior Society*

2013 *Abstract:* Boulanger, LM. Fourgeaud, L., Tyler. CM., **Aguilar, J.I,** Chacon, M.A., Control of Synaptic Transmission and Synaptic Plasticity by MHCI Immune Proteins. *International Society for Neurochemistry*

2013 *Abstract:* Tyler C.M, Chacon M.A., **Aguilar J.I.**, Perlman D.H., Fourgeaud L., Boulanger L.M. MHC class I is a voltage-dependent regulator of NMDA receptor-mediated single-channel currents, *Society for Neuroscience*

2011 *Abstract:* Tyler C.M, Fourgeaud L., **Aguilar J.**, Chacon M.A., Boulanger L.M. MHC class I regulates NMDA receptor function in the adult hippocampus, *Society for Neuroscience*

2008 *Abstract:* **Aguilar J.**, Gonzales E., McGraw, T., (2008) The Role of Phospholipidase D1 in GLUT4 Trafficking. *Ethnicity & Disease. 18, 2: 93.*

2009 **Aguilar, J**. *Couette-Taylor Photo-Bioreactor: Growth Impact of Inner Cylinder Rotations*; Presentation; Schola Ludus Program; Princeton International Internship Program

2007 **Aguilar, J**. *The Role of Phospholipase D1 in GLUT4 Trafficking* Presentation; The Short-Term Research Experience for Underrepresented Persons (STEP-UP) Program of NIH, NIDDK of the NIH, and Charles R. Drew University