BIOGRAPHICAL SKETCH

NAME	JORGE VERA BUSCHMANN		
BORN	DEC 31, 1982		
NATIONALITY	CHILEAN		
COUNTRY OF RESIDENCE	CHILE		
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CURRENT STATUS

FONDECYT POSTDOCTORAL RESEARCH FELLOW, DEPARTMENT OF BIOLOGY, LABORATORY OF PHYSIOLOGY, UNIVERSITY OF CHILE, CHILE.

EDUCATION			
		YEAR	
INSTITUTION AND LOCATION	DEGREE	CONFERRED	FIELD OF STUDY
UNIVERSITY OF CHILE, CHILE.	Ph.D. in Molecular and Cellular Biology and Neuroscience	2014	Neuroscience
UNIVERSITY OF CHILE, CHILE.	M.Sc. in Molecular and Cellular Biology and Neuroscience	2010	Neuroscience
UNIVERSITY OF CHILE, CHILE.	Engineer in Molecular Biotechnology	2008	Neuroscience
UNIVERSITY OF CHILE, CHILE.	Licentiate in Molecular Biotechnology	2007	Molecular Biology

CURRENT PROJECTS

-Characterization of chronic and acute effect of the antiepileptic drug Phenytoin on neuronal excitability: From cellular to network level (Advisor Dr. Julio Alcayaga).

-Characterization of neuronal activity in the cortical amygdala of behaving mice. (Collaborative work with Dr. Alexia Nuñez-Parra, Dr. Diego Restrepo and Dr. Magdalena Sanhueza).

HONORS AND AWARDS

-Grass Fellow 2017.

-Best Poster Presentation Award, X Annual meeting Chilean Society for Neuroscience, Valdivia, Chile. October 2014.

-Young Neuroscientist fellow 2013, IX Annual meeting of the Chilean Society for Neuroscience, Valparaíso, Chile. October 2013.

-IBRO fellowship for attending to Neuronal Systems and Behavior summer course at the Marine Biological Laboratories, Woods Hole. June-July 2012.

-MECESUP fellowship for an international research internship, 2012.

-CONICYT* fellowship "Assistance to national meeting" 2011.

-CONICYT* fellowship "Assistance to international meeting" 2011.

-ISCV fellowship, Latin American Summer School in Computational Neuroscience and Biomedical Applications. Instituto de sistemas complejos, Valparaiso, Chile. 2010.

-CONICYT* Ph.D. fellowship, Chile 2010-2014.

-CONICYT M.Sc. fellowship, Chile 2008-2009.

-Licentiate in Engineer on Molecular Biotechnology, 2007. First position in ranking.

-Presidente de la Republica undergraduate fellowship, 2003-2007.

-MINEDUC (Ministry of Education) undergraduate fellowship, 2003-2007.

* NATIONAL (CHILEAN) COMISSION FOR SCIENCE AND TECHNOLOGY (CONICYT)

MEMBERSHIP IN RESEARCH SOCIETIES

- Marine Biological Laboratory, Woods Hole.

- Society for Neuroscience.

- Chilean Society for Neuroscience.

TEACHING EXPERIENCE

Lectures

2015-2017 Introduction to electrophysiology. General Physiology course, Faculty of Science, University of Chile. Course coordinator: Dr. Juan Bacigalupo.

2016 From neurons to behavior. Neurobiology course, Faculty of Science, University of Chile. Course coordinator Dr. Julio Alcayaga.

2015 Cellular and Molecular Mechanism of Learning and Memory (video presentations). General Physiology course, Faculty of Science, University of Chile. Course directors Dr. Juan Bacigalupo and Dr. Daniel Basilio.

Practical Demonstrations

Optogenetics in brain slices and Dynamic Clamping. Training session offered in the workshop "Extrinsic control of neuronal activity" organized by the Cell Physiology Center, Faculty of Science, University of Chile. 10-11 Nov 2015.

Observing neuronal activity (intrinsic and extrinsic activity in brain slices). Neuroscience and Education postgraduate program, Faculty of Science, University of Chile. Coordinator Dr. Veronica Palma. 1st semester 2014 - 2017.

Undergraduate teaching assistant at the Faculty of science, University of Chile:

2008 & 2011 Neurobiology
2007 & 2008 General Physiology
2007 Biophysicochemistry of Macromolecules
2003 Cell Biology

INTERNATIONAL RESEARCH INTERNSHIPS

-Taste and Smell Center, University of Colorado Anschutz Medical Campus, Aurora, Colorado. USA. August-October 2015. Pl. Dr. Diego Restrepo.

-Laboratory of missfolded protein and neurodegenerative diseases, University of Texas, Houston, USA. August-September 2014. PI. Dr. Claudio Soto.

-Taste and Smell Center, University of Colorado Anschutz Medical Campus, Aurora, Colorado. USA. August-November 2012. Pl. Dr. Diego Restrepo.

TRAINING COURSES

"Latin American Training Program" by The Society for Neuroscience. Aug 2014-Aug 2015.

"Neural Systems and Behavior". Marine Biological Laboratories, Woods Hole, USA. June 2 to July 26, 2012.

"Dynamic Clamp: Playing with models in real neurons" (Professors Lorin Milescu and Joel Tabak). Instituto de Sistemas Complejos, Valparaiso, Chile. December 14-16, 2011.

"Latin American Summer School in Computational Neuroscience and Biomedical Applications". Instituto de Sistemas Complejos, Valparaiso, Chile. January 11-29, 2010.

GRANTS

2015-2017 Fondecyt Postdoctoral grant (N° 3150668). "Characterization of chronic and acute effect of the antiepileptic drug Phenytoin on neuronal excitability: From cellular to network level".

PUBLICATIONS

- Vera J., Alcayaga J. and Sanhueza M. (2017) Competition between persistent Na⁺ and muscarine-sensitive K⁺ currents shapes perithreshold resonance and spike tuning in CA1 pyramidal neurons. *Front Cell Neurosci*,11:61. doi: 10.3389/fcel.2017.00061
- 2. Guthman E. and **Vera J.** (2016) A cellular mechanism for main and accessory olfactory integration at the medial amygdala. *J Neurosci*, 36(7):2083-2085.
- 3. **Vera J.**, Pezzoli M., Pereira U., Bacigalupo J. and Sanhueza M. (2014) Electrical resonance in the theta frequency range in olfactory amygdala neurons. *PloS One*, 9(1):e85826. doi:10.1371/journal.pone.0085826.
- González-Silva C., Vera J., Bono MR, González-Billaoult C., Baxter B., Hansen A., Lopez R., Gibson E., Restrepo D. and Bacigalupo J. (2013) Ca⁺²-activated Cl⁻ channels of the ClCa family express in the cilia of a subset of rat olfactory sensory neurons. *PloS ONE*, 8(7): e69295. Doi:10.1371/journal.pone.0069295.

PUBLICATIONS IN PREPARATION

- Vera J., Pereira U., Reynaert B., Sanhueza M. The frequency preference and temporal response of resonant neurons is modulated into theta range (3-10 Hz) by changes in the input resistance.
- 2. **Vera J.**, Drechler A., Astudillo D., Mpodosis, J. and Sanhueza M. Electrophysiological and morphological characterization of resonant and nonresonant neurons from layer II of the anterior nucleus of the cortical amygdala.

INVITED SEMINARS

- 1- Resonant neurons, the same mechanism but different frequency ranges: A general principle behind the setting of intrinsic frequency preference. From neurons and networks to behavior, International Conference. Nov 11, 2015. Faculty of Science, University of Chile, Chile.
- 2- *Modulation of neuronal resonance by neuronal activity*. Jornadas de Neurociencia, Pontificia Universidad Católica. Jan 9, 2015. Santiago, Chile.

- 3- Recreated high conductance state modulates subthreshold resonance of mammalian neurons through changes in input resistance. Young Neuroscientists Symposium, Annual Meeting Chilean Society for Neuroscience. October 1-4, 2013. Valparaiso, Chile.
- 4- *Un contexto biológico para la resonancia neuronal*. Annual meeting Nexos Chile-USA. October 5-6, 2012. New York, USA.

CONFERENCE ABSTRACTS

- 1- **Vera J.**, Alcayaga J. and Sanhueza M. (2016) Modulation of frequency preference in resonant neurons. Optogenetic Approaches to Understanding Neural Circuits & Behavior, Gordon Research Conference. July 17-21. Maine, USA.
- 2- Vera J., Alcayaga J., Bacigalupo J. and Sanhueza M. (2015) Contribution of persistent Na⁺ current and muscarine-sensitive K⁺ current to perithreshold theta resonance in CA1 pyramidal neurons. 45th Annual Meeting Society for Neuroscience. October 17-21. Chicago, USA.
- 3- Vera J., Pereira U., Reynaert B., Bacigalupo J. and Sanhueza M. (2014) Modulation of frequency preference by changes in input resistance. 44th Annual Meeting Society for Neuroscience. November 15-19. Washington D.C., USA.
- 4- Vera J., Pereira U., Reynaert B., Deichler A., Astudillo D., Bacigalupo J., and Sanhueza M. (2014) A biological context for theta-frequency neuronal resonance: a comparative study between cortical amygdala and hippocampal neurons. X Annual meeting of the Chilean Society for Neuroscience. October 1-4. Valdivia, Chile. Awarded for best panel presentation.
- 5- **Vera J.**, Pereira U., Pezzoli M., Delgado R., Bacigalupo J., and Sanhueza M. (2011) Sub and supra threshold dynamics of resonant neurons in the rat cortical amygdala. 41th Annual Meeting Society for Neuroscience. November 12-16. Washington D.C., USA.
- 6- Pereira U., Vera J., Pezzoli M., Bacigalupo J., and Sanhueza M. (2011) A computational conductance-based model that reproduces theta resonance dynamics of olfactory amygdala neurons. 41th Annual Meeting Society for Neuroscience. November 12-16. Washington D.C., USA.
- 7- Vera J., Lois P., Bacigalupo J., and Sanhueza M. (2011) Neuronal resonance as a mechanism of olfactory signal processing in the rat cortical amygdala. VII Annual Meeting of the Chilean Society for Neuroscience. September 27-28. Santa Cruz, Chile.
- 8- Vera J., Maureira C., Delgado R., Alvarez O., Sanhueza M. and Vergara C. (2010) Nanomolar copper concentrations increases spontaneous EPSP frequency and action potential threshold variability in hippocampal CA1 pyramidal neurons. 40th Annual Meeting Society for Neuroscience. November 13-17. San Diego, USA.
- 9- **Vera J.** and Vergara C. (2009) Nanomolar copper modifies intrinsic excitability components of CA1 neurons. V Annual Meeting of the Chilean Society for Neuroscience. Coquimbo, September 23-25. Chile.

- 10- Vera J., Delgado R. and Vergara C. (2008) Effects of copper on toad and rat olfactory sodium currents. 23th Annual Meeting of the Chilean Society for Physiological Sciences. Coquimbo, October 12-18. Chile.
- 11- Gonzalez C., Vera J. and Bacigalupo J. (2008) Expression of CLCA calcium activated chloride channels in rat olfactory neurons. 22th Annual Meeting of the Chilean Society for Cell Biology. Pucón, Chile. Labor awarded the honorable mention for best undergraduate panel.
- 12- Vera J., Delgado R., Wolf D. Vergara and C. (2007) Copper affects sodium currents: A quantitative study. 22th Annual Meeting of the Chilean Society for Physiological Sciences. Pucón, November 21-24. Chile.
- 13- Vera J., Delgado R., Wolf D. Vergara and C. (2007) Copper affects sodium currents: A quantitative study. 3rd Annual Meeting of the Chilean Society for Neuroscience. Los Andes, September 26-28. Chile.
- 14- Marin M., Leiva M., Flores J., **Vera J.**, Vergara C., Monasterio O. and Lagos R. (2006) The aggregation of micro-E492 is associated with a lower expression of maturation genes. XLIX Annual Meeting of the Chilean Society for Biology. Pucón, Chile.

SCIENTIFIC OUTREACH

Founder and director of **ConCiencia**, a non-profit organization that promotes the interaction between universities and society.

RECOMMENDATION REQUEST

Juan Bacigalupo Professor of Cell Physiology Director, Center for Cell Physiology University of Chile bacigalu@uchile.cl

Julio Alcayaga (Postdoc Advisor) Professor of Neurobiology University of Chile. jalcayag@uchile.cl Magdalena Sanhueza (Ph.D. Advisor) Associate Professor University of Chile masanhue@uchile.cl

Diego Restrepo Professor of Cell and Developmental Biology Director, Center for NeuroScience (CNS) University of Colorado, Antschus Medical campus. diego.restrepo@ucdenver.edu