Ulises Pereira

Contact Information	George Herbert Jones Laboratory 5747 S. Ellis Avenue, Chicago, IL 60637	312-885-8749 ulises@uchicago.edu

Education

The University of Chicago, Chicago, IL

Ph.D., Statistics, expected: Fall 2018. Thesis Disertation: *Unsupervised Learning of Spatiotemporal Attractors In Neural Networks.* Advisor: Nicolas Brunel

M.S., Statistics, 2015

Universidad de Chile, Santiago, Chile

M.S., Physics (*w*ith Highest Distinction), 2013

B.Eng., Molecular Biotechnology (*w*ith Highest Distinction, ranked 1/8), 2013

B.S., Physics (*w*ith Distinction, ranked 1/6), 2012

Honors and Awards

Doctoral Becas-Chile Scholarship. Chilean Government. *Commission of Research in Science and Technology of the Chilean Government (CONICYT). 2013*. Scholarship declined.
Doctoral Fulbright Fellowship. U.S. Government. *Fulbright commission. 2012*.
Best Physics Student of Class 2011. Universidad de Chile. *Department of Physics. 2011*.
CONICYT Master Fellowship. Chilean Government. *Commission of Research in Science and Technology of the Chilean Government (CONICYT). 2011*. Ranked 5/1584 at national level.
Bicentenario Scholarship for Undergraduate Studies. Chilean Government. *Ministry of Education. 2004*.
Scholarship for Outstanding PSU Score. *PSU (Spanish acronym) is the national Chilean university selection test.*Pontificia Universidad Catolica de Chile. *2004*. Scholarship declined.

Refereed Journal Publications

1. **Pereira U**, Coullet P. and Tirapegui E. The Bogdanov-Takens Normal Form: A Minimal Model for Single Neuron Dynamics. Entropy. 2015.
2. Vera J., Pezzoli M., **Pereira U.**, Bacigalupo J. and Sanhueza M. Electrical Resonance in the θ Frequency Range in Olfactory Amygdala Neurons. Plos One. 2014.
3. Contreras D., **Pereira U.**, Hernández V., Reynaert B. and Letelier J.C. A loop conjecture for metabolic closure. *Advances in Artificial Life, ECAL 2011.* MIT press. 2011. Selected one of the ten best papers of ECAL 2011.

Papers in Preparation

1. **U. Pereira**, J. Aljadeff, and N. Brunel. Chaos with Associative Memory Properties in Attractor Neural Network.
2. **U. Pereira** and N. Brunel. Attractor Dynamics in Networks with Learning Rules Inferred from Data.
3. **U. Pereira** and N. Brunel. Unsupervised Learning of Persistent and Sequential Activity.

Talks

Attractor Dynamics in Networks with Learning Rules Inferred from Data. International Conference on Mathematical Neuroscience. Boulder, CO. June, 2017.

Conference Posters (selected)

Pereira U. and Brunel N. Optimal Unsupervised Hebbian Learning Rules For Attractor Neural Networks. COSYNE Poster Presentation. Salt Lake City, EEUU. February, 2017.

Pereira U. and Brunel N. Unsupervised Learning of Persistent and Sequential Activity. COSYNE Poster Presentation. Salt Lake City, EEUU. February, 2016.

Pereira U. and Brunel N. Unsupervised Learning of Sequential Activity. XV International Workshop on Instabilities and Nonequilibrium Structures. Valparaíso, Chile. December, 2015.

Vera J., **Pereira U.**, Reynaert B., Bacigalupo J. and Sanhueza M. Modulation of frequency preference by changes in input resistance. 44th Annual Meeting Society for Neuroscience. Washington D.C., USA. November, 2014.

Pereira U., Tirapegui E. Una Ecuación Universal Para la Dinámica Neuronal. In Proceedings of the XVII Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics. Santiago, Chile. December 2012.

Contreras D, **Pereira U.**, Hernández V., Reynaert B. and Letelier J.C..A loop conjecture for metabolic closure.*Eleventh European Conference on the Synthesis and Simulation of Living Systems*. Paris, France. August, 2011.

Pereira U., Pezzoli M., Bacigalupo J., Sanhueza M.. A computational conductance-based model of electrical resonance in the theta frequency range in olfactory amygdala neurons. VI meeting of the Chilean Society of Neuroscience. Valdivia, Chile. September, 2010.

Teaching Experience

Lecturer

Statistical Models and Methods. Undergraduate course attended by ∼40 students from physical, biological and social sciences majors. The University of Chicago. *Winter 2015*.

Teaching Assistant

Theoretical Neuroscience: Network Dynamics and Computation. Graduate course. The University of Chicago. *Winter 2013* and *Winter 2017*
Statistical Methods and Applications. The University of Chicago. *Spring 2014*, *Fall 2015* and *Fall 2016*.
Statistical Models and Methods. The University of Chicago. *Spring 2015*.
Elementary Statistic. The University of Chicago. *Fall 2014*.
General Physiology. Universidad de Chile. *Autumn Semester 2010*
Biological Instrumentation. Universidad de Chile. *Spring Semester 2008*.

Courses

Latin American Summer School in Computational Neuroscience. Institute of Complex Systems. *Valparaíso, Chile. 11 to 29 January, 2010*.
VI Summer School of Complex Systems. Institute of Complex Systems. *Valparaíso, Chile. 7 to 11 of January, 2008*.