Francisco J. Luongo

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Education

University of California, San Francisco, San Francisco, CA

Ph.D., Neuroscience, December 2015

- Thesis Topic: *Information processing and computation in prefrontal microcircuits*
- Thesis Advisor: VIkaas S. Sohal, M.D., Ph.D

Stanford University, Palo Alto, CA

B.S., Biology, May 2008

Current Position

Postdoctoral Fellow — January 2016 to present
California Institute of Technology
Supervisor: Doris Y. Tsao, Ph.D

Research Interests

neural computation, cortical microcircuits, neural networks, network analysis, calcium imaging, ECoG time-series analysis, scientific computing

Past Research Experience

Doctoral Student — June 2011 to December 2015
University of California San Francisco
Supervisor: VIkaas S. Sohal, M.D., Ph.D

Research Assistant — July 2008 to Aug 2010
Stanford University
Supervisor: Thomas Clandinin, Ph.D

Undergraduate Researcher — Dec 2006 to June 2008
Stanford University
Supervisor: Liqun Luo, Ph.D

Publications and Abstracts

1. **Luongo, F.**, Zimmerman, C., Horn, M., and Sohal, V.S. "Correlations between prefrontal neurons form a small world network that optimizes the generation of multineuron sequences of activity." *Journal of Neurophysiology*, *In Press* 2016 *link*
2. **Luongo, F.**, Horn, M., and Sohal, V.S. "Putative microcircuit-level substrates for attention are disrupted in mouse models of autism." *Biological Psychiatry*, Apr 15;79(8):667-75. 2016 *link*
3. **Luongo, F.**, Horn, M., and Sohal, V.S. "Changes in prefrontal microcircuit organization increase repetitive network activity in two mouse models of autism" *AREADNE: Research in encoding and decoding of neural ensembles*, [Santorini, Greece], 2014. *link*
4. Gee, S., Ellwood, I., Patel, T., **Luongo, F.**, Deisseroth, K., and Sohal, V.S. "Synaptic activity unmasks dopamine D2 receptor modulation of a specific class of layer V pyramidal neurons in prefrontal cortex." *Journal of Neuroscience*, 4;32(14):4959–4971, 2012. *link*
5. Gohl D.M., Silies M.A., Gao X.J., Bhalerao S., **Luongo F.J.**, Potter C.J., and Clandinin T.R. "A versatile in-vivo system for directed genetic dissection of gene expression patterns." *Nature Methods*, 8(3):231–237, 2011. *link*

6. Otero L., **Luongo F.**, Gonzalez E., Ganoza C,, Hinostroza G., Seas C., and Gotuzzo E. "High rate of TB among household contacts of multidrug-resistant tuberculosis (MDR-TB) index cases in a high incidence district of Lima, Peru." *Centenary Meeting of the Royal Society of Tropical Medicine and Hygiene* [London, UK], 2007

7. **Luongo F.**, Cui B., and Han K. "High Strength/ High Conductivty copper by pulsed electrodeposition." *International Symposium of Crystalline Organic Materials.* [Key West, FL], 2005

Papers in Preparation

1. **Luongo, F.**, Zimmerman, C., and Sohal, V.S. "Prefrontal microcircuits have a small world organization which optimizes their production of a diverse repertoire of repetitive patterns of activity"

2. **Luongo, F.**, Kirkby L. and Sohal, V.S. "Analytical tools for identifying spatiotemporal structure in chronic ECoG recordings."

3. Ellwood, I., **Luongo, F.**, and Sohal, V.S. "Changes in criticality associated with the modulation of prefrontal microcircuits by dopamine."

Awards

National Institute of General Medicine IMSD predoctoral fellow	2010
National Hispanic Scholar	2004
National Merit Scholar	2004

References

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Michael P. Stryker
W.F. Ganong Professor of Physiology
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University of California, San Francisco
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Techniques and Software Skills

Techniques:
Optogenetics, calcium imaging, single-cell electrophysiology, micro-endoscope imaging, histology, cloning, drosophila genetics

Computer Programming:
python, Matlab, bash, unix, Git