



# Jorge Aurelio Menendez

*Curriculum Vitæ (October 25, 2016)*

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## RESEARCH EXPERIENCE

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**Cortex Lab, UCL Institute of Ophthalmology (London)** 2016

*Prof. Matteo Carandini & Prof. Kenneth Harris*

- Research on orientation selectivity and response adaptation in neurons in mouse primary visual cortex
- Analysis of 2-photon calcium imaging data
- Measured responses of cortical pyramidal cells and different types of interneurons to various types of visual stimuli
- Funded by UCL Graduate Research Scholarship

**Kampff Lab, Sainsbury Wellcome Centre (London)** 2016

*Dr. Adam Kampff*

- Research on rat motor cortex, using controlled and manipulable behavioral assays
- Video analysis of behavior, using elementary computer vision techniques
- Analysis of electrocorticography (ECoG) data, particularly event-related analysis
- Funded by UCL Graduate Research Scholarship

**Gatsby Computational Neuroscience Unit (London)** 2016

*Prof. Peter Latham*

- Research on theory of neural dynamics and computation, specifically on understanding how biological neural networks may implement a linear dynamical system
- Analysis and simulation of neural networks with inhibitory and excitatory circuits
- Funded by UCL Graduate Research Scholarship

**UCL Department of Genetics, Evolution and Environment (London)** 2016

*Prof. Andrew Pomiankowski & Dr. Alex Stewart*

- Research on possible origins of random monoallelic expression
- Analysis and simulation of stochastic gene networks
- Funded by UCL Graduate Research Scholarship

**Visual Thinking Lab, Johns Hopkins University (Baltimore)** 2012-2015

*Prof. Jonathan Flombaum & Prof. Justin Halberda*

- Research on computations underlying spatial working memory
- Design, implementation and administration of experiments with human subjects (~150 subjects tested)
- Statistical analysis and modelling of psychophysical data
- Funded by JHU Dean's Undergraduate Research Award

## Visual Electrophysiology Lab, Università Cattolica del Sacro Cuore (Rome)

2014

*Prof. Benedetto Falsini*

- Research on face perception in patients with macular degeneration
- Design and implementation of software to test face recognition ability (~40 patients tested)
- Statistical analysis of psychophysical data and focal cone electroretinography data
- Funded by JHU Second Decade Society Internship Grant

## PUBLICATIONS

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3. **Menendez, J.A.**, Bae, G.Y., Wilson, C. & Flombaum, J.I. (2016). Configuration effects in spatial working memory reflect expectations from identity correspondence in motion perception. *Manuscript in preparation*
2. **Menendez, J.A.** (2015). Free Will and Transworld Identity in Leibniz's Metaphysics. *Prometheus Undergraduate Philosophy Journal*.
1. Gross, S., Chaisilprungraung, T., Kaplan, E., **Menendez, J.A.** & Flombaum, J.I. (2014). Problems for the purported cognitive penetration of perceptual color experience and Macpherson's proposed mechanism. *Baltic International Yearbook of Cognition, Logic and Communication*, 9(1), 6.

## CONFERENCE PRESENTATIONS

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4. Menendez, J.A. (2016, February). *Towards a computational account of art cognition: unifying perception, visual art, and music through Bayesian inference*. Talk presented at the Human Vision and Electronic Imaging Conference, part of the IS&T International Symposium on Electronic Imaging, San Francisco, CA, USA.
3. Menendez, J.A., Falsini, B., Ambrosio, L., Corbo, G. (2015, May). *Predicting face recognition ability using macular focal cone electroretinography in patients with macular degeneration*. Poster presented at the annual meeting of the Association for Research in Vision and Ophthalmology, Denver, CO, USA.
2. Menendez, J.A., Bae, G.Y., Wilson, C., Flombaum, J.I. (2014, May). *Deriving configuration effects in spatial working memory from rational correspondence*. Talk presented at the annual meeting of the Vision Sciences Society, St. Pete Beach, FL, USA.
1. Menendez, J.A., Bae, G.Y., Wilson, C., Flombaum, J.I. (2013, November). *A computational basis for configuration effects in spatial working memory*. Poster presented at the Annual Workshop on Object Perception, Attention, and Memory, Toronto, ON, Canada.

## EDUCATION

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- PhD Computational Neuroscience** 2016-  
*University College London, Gatsby Computational Neuroscience Unit & Sainsbury-Wellcome Center for Neural Circuits and Behaviour*  
Supervisors: Peter Latham & Adam Kampff
- MRes Modelling Biological Complexity** 2015-2016  
*University College London, Centre of Mathematical and Physical Science in Life Sciences and Experimental Biology*  
Graduated with Distinction  
Thesis: Contextual processing in mouse visual cortex (supervised by M. Pachitariu & M. Carandini)  
Rotation projects and thesis pdf available at [www.ucl.ac.uk/~ucbpjam/](http://www.ucl.ac.uk/~ucbpjam/)
- BA Cognitive Science** 2011-2015  
*Johns Hopkins University*  
Graduated with General Honors and Major Honors (GPA: 3.91/4.00)  
Focal areas: Computational Approaches to Cognition and Cognitive Psychology  
Minor: Philosophy (with focus in Philosophy of Mind and Formal Logic)
- BM Classical Guitar Performance** 2011-2015  
*Peabody Institute of The Johns Hopkins University*  
Graduated with Honors (GPA: 3.91/4.00)  
Studied under Grammy-award winning classical guitarist Manuel Barrueco  
Recitals are recorded and can be seen on YouTube: [Junior Recital](#), [Senior Recital](#)
- International Baccalaureate (IB) Diploma** 2009-2011  
*Washington International School*  
Final IB Score: 41/45  
IB Higher Levels: Mathematics (7/7), Biology (7/7), Chemistry (7/7)  
IB Standard Levels: English (6/7), Spanish (6/7), Economics (7/7)  
IB Extended Essay: *Musically Enhanced Working Memory in Musicians and Non-Musicians*

## AWARDS AND FUNDING

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UCL Graduate Research Scholarship	~£16,000/yr	2015-2019
CoMPLEX MRes Award for Top Student/Project	£150	2016
UCL Overseas Research Scholarship (covers overseas tuition fees)	£23,710	2015
Johns Hopkins University Cognitive Science Award	\$500	2015
Rhodes Scholarship Finalist, 5th District		2015
Barry Goldwater Scholarship “A Computational Basis for Context Effects in Spatial Working Memory”	\$7500	2014
Luigi Burzio Undergraduate Research Award in Psychological and Brain Sciences “Deriving Configuration Effects in Spatial Working Memory from Rational Correspondence” (Supervisor: Jonathan Flombaum)	\$3,000	2012-2014
Second Decade Society Summer Internship Grant “Psychophysical Testing of Retinal Disease Patients” (Supervisor: Benedetto Falsini)	\$2,000	2014

## SKILLS

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- Programming: MATLAB, Python, R, HTML, CSS, Java
- Languages: Spanish, English (fluent); French, Italian (proficient)