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# MARIEL ROBERTS

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## EDUCATION

- Ph.D., Experimental Psychology** 2020 (expected graduation)  
New York University, New York, NY  
Doctoral Advisor: Marisa Carrasco, Ph.D.  
Dissertation: *Attention and perceptual learning in special populations*
- M. Phil., Experimental Psychology** 2019  
New York University, New York, NY
- M.A., Experimental Psychology** 2017  
New York University, New York, NY
- B.A., Biological Basis of Behavior, with Honors** 2012  
University of Pennsylvania, Philadelphia, PA  
Magna Cum Laude; Dean's List; Nu Rho Psi (national neuroscience honor society)

## RESEARCH EXPERIENCE

- New York University, Doctoral student** 2014 – present  
Principal Investigator: Professor Marisa Carrasco  
Department of Psychology  
New York, NY
- New York University, Lab manager** 2012 – 2014  
Principal Investigator: Professor Marisa Carrasco  
Department of Psychology  
New York, NY
- University of Pennsylvania, Honors thesis student** 2011 – 2012  
Principal Investigator: Abass Alavi, M.D.  
Department of Radiology, Hospital of the University of Pennsylvania  
Philadelphia, PA
- New York University, NSF-funded Summer Undergraduate Research Program (SURP)** 2011  
Principal Investigator: Professor Marisa Carrasco  
Department of Psychology  
New York, NY
- University of Rochester Medical Center, Research intern** 2010  
Principal Investigator: Professor Tania Pasternak  
Center for Visual Science  
Rochester, NY

Principal Investigator: Jesús E. Maldonado, Ph.D.

Center for Conservation Genomics

Washington D.C.

## PEER-REVIEWED PUBLICATIONS

**Roberts, M.** & Carrasco, M. Attention affects visual perception in the absence of microsaccades. In Prep.

**Roberts, M.** & Carrasco, M. Exogenous attention generalizes perceptual learning in adults with amblyopia. In Prep.

Purokayastha, S., **Roberts, M.**, & Carrasco, M. (2019). Does endogenous attention compensate for performance fields? In Prep.

**Roberts, M.**, Ashinoff, B., Castellanos, F. X., & Carrasco, M. (2017). When attention is intact in ADHD. *Psychonomic Bulletin & Review*, 25(4), 1423-1434. doi: 10.3758/s13423-017-1407-4.

**Roberts, M.**, Cymerman, R., Smith, R. T., Kiorpes, L., & Carrasco, M. (2016). Covert spatial attention is functionally intact in amblyopic human adults. *Journal of Vision*, 16(15), 1-19. doi: 10.1167/16.15.30.

Dugué, L., **Roberts, M.**, & Carrasco, M. (2016). Attention reorients periodically. *Current Biology*, 26(12), 1595-1601. doi: 10.1016/j.cub.2016.04.046.

Cavanaugh, M. R., Zhang, R., Melnick, M. D., Das, A., **Roberts, M.**, Tadin, D., Carrasco, M., & Huxlin, K. R. (2015). Visual recovery in cortical blindness is limited by high internal noise. *Journal of Vision*, 15(10): 9, 1-18. doi: 10.1167/15.10.9.

He, K., Woodman, N., Boaglio, S., **Roberts, M.**, Supekar, S., & Maldonado, J. (2015). Molecular phylogeny supports repeated adaptation to burrowing within small-eared shrews of the genus of *Cryptotis* (Eulipotyphla, Soricidae). *PLoS ONE*, 10(10), e0140280. doi: 10.1371/journal.pone.0140280

## TALKS

Vision Sciences Society Annual Meeting, St. Pete Beach, FL 2020  
*Exogenous attention generalizes perceptual learning in adults with amblyopia*

Invited talk, University of Washington, host Dr. Yeatman 2019  
*Visual attention in amblyopia*

Cognition & Perception 4th year talk, New York University 2018  
*Attention and perceptual learning in amblyopia*

Cognition & Perception Mini-Convention, New York University 2016  
*Attention reorients periodically*

- Cognition & Perception Mini-Convention, New York University 2015  
*Covert spatial attention is functionally intact in amblyopic human adults*
- Honors Research Symposium, University of Pennsylvania 2012  
*Use of 18F-FDG-PET for quantitative assessment of temporal lobe epilepsy on brain metabolism*
- Center for Neural Science SURP Research Symposium, New York University 2011  
*The effect of attention on visual perceptual learning: defying location specificity?*

## PEER-REVIEWED CONFERENCE ABSTRACTS & POSTER PRESENTATIONS

- Purokayastha, S., **Roberts, M.** & Carrasco, M. (2020). Microsaccades around the visual field. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL.
- Roberts, M.** & Carrasco, M. (2019). Exogenous attention and anticipatory fixation stability. *Journal of Vision*, 19(1), 265-265.
- Purokayastha, S., **Roberts, M.**, & Carrasco, M. (2019). Does endogenous attention compensate for spatial performance fields? *Journal of Vision*, 19(10): 265b-265b.
- Roberts, M.**, Ashinoff, B. K., Castellanos, F. X., & Carrasco, M. (2017). Endogenous and exogenous attention are functionally intact in adults with ADHD. *Journal of Vision*, 17(10): 699-699.
- Dugué, L., **Roberts, M.**, & Carrasco, M. (2016). *Attention reorients periodically*. Center for Visual Science 30th Annual Symposium: The Future of Attention, University of Rochester, Rochester, NY.
- Ashinoff, B., **Roberts, M.**, Castellanos, F. X., & Carrasco, M. (2015). Exogenous spatial attention in adults with ADHD is intact. *Perception*, 44:110-111.
- Dugué, L., **Roberts, M.**, & Carrasco, M. (2015). Occipital TMS modulates the effect of attention on contrast sensitivity. *Perception*, 44:110-111.
- Roberts, M.** & Carrasco, M. (2015). Amblyopic adults demonstrate intact endogenous spatial attention. *Journal of Vision*, 15(12): 1339-1339.
- Carrasco, M., **Roberts, M.**, & Kiorpes, L. (2014). Exogenous spatial attention in amblyopic adults is intact. *Perception*, 43, S8.
- Carrasco, M., **Roberts, M.**, Cymerman, R., Smith, R. T., & Kiorpes, L. (2014). Intact functioning of exogenous spatial attention in amblyopic adults. *Journal of Vision*, 14(10): 539-539.
- Cavanaugh, M., Melnick, M., Zhang, R., **Roberts, M.**, Das, A., Tadin, D., Carrasco, M., & Huxlin, K. (2014). Residual inefficiencies of recovered vision in cortically blind fields—insights from the equivalent noise analysis. *Journal of Vision*, 14(10): 659-659.

## TEACHING EXPERIENCE

### Perception, Guest lecturer

Fall 2019

Undergraduate course of ~120 students  
Primary responsibility: presented lecture *Pitch perception*  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### Perception, Class instructor

Summer 2019

Intensive 6-week undergraduate elective of 25 students, equivalent to regular term course  
Primary responsibilities: designed new course syllabus, prepared active learning exercises, facilitated class discussions, created novel lecture and assessment material (daily quizzes, exam questions, weekly homeworks), held weekly office hours  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### Topics in Perception and Attention, Guest lecturer

Spring 2019

Advanced graduate elective of 23 students  
Presented lecture, *Attention in special populations*  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### Introduction to Cognitive Neuroscience, Teaching assistant

Fall 2018

Undergraduate course of ~80 students, led two weekly recitation sections of ~20 students each  
Primary responsibilities: created PowerPoint presentations to accompany discussions of empirical research papers, graded exams and students' research papers, held weekly office hours  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### Perception, Teaching assistant

Fall 2017

Undergraduate course of ~120 students, led two weekly recitation sections of ~30 students each  
Primary responsibilities: created PowerPoint presentations to review weekly lecture content, graded weekly quizzes and three exams, held weekly office hours  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### Perception, Tutor

Summer 2017

Tutored one student throughout summer semester  
Department of Psychology, College of Arts & Sciences  
New York University, New York

### How We See, Guest lecturer

Fall 2013, Fall 2014, Fall 2018, Fall 2019

Freshman seminar of ~15 students  
Primary responsibilities: lectured and led discussions about various topics in perception, provided verbal and written guidance and feedback on students' scientific research and reaction papers  
Department of Psychology, College of Arts & Sciences  
New York University, New York

## MENTORSHIP

### Master's students (NYU's Graduate School of Arts & Science Mentorship Program)

Carrie Lott (2019-present)

Ayijiuli Abudukadeer (2019)

Natalie Nagpal (2018)

### Research Mentor to undergraduate students (Carrasco lab)

Julia Payne (2018-present): awarded New York University's DURF\* grant 3 times

Sanjana Manjunath (2018-2019): awarded New York University's DURF\* grant 2 times

Elizabeth Eberts (2017): participant in NYU's NSF-funded Summer Undergraduate Research Program

Imaad Sidiqqi (2012-2013): co-supervised honors research thesis

## HIGHER EDUCATION TRAINING: COURSES COMPLETED

NYU Graduate School of Arts and Sciences Teaching Certificate Program

8-week non-credit courses that explore the theory and practice of university teaching

Preparing Future Faculty 1: The Art & Craft of Teaching	2019
Preparing Future Faculty 2: Achieving Success through Communication	2019

## HIGHER EDUCATION TRAINING: WORKSHOPS ATTENDED

NYU Center for the Advancement of Teaching Workshops

Motivating Student Learning	2019
How We Learn	2019
How To Be a Researcher & Teacher	2019
Discussion-Based Teaching	2019
Making Learning Stick	2019
Mentoring College Students	2019
Is This Going to Be on The Test?	2019

## FELLOWSHIPS & AWARDS

NYU Graduate School of Arts and Sciences Dean's Dissertation Fellowship	2019 - 2020
Psych. Dept. Nominee: GSAS Dean's Outstanding Graduate Student Teaching Award	2019
National Science Foundation Graduate Research Fellow	2015 - 2017; 2018 - 2019
NYU Student Government Assembly Conference Fund Travel Grant	2019
NYU Vision Training Grant	2017 - 2018
NYU Dean's Student Travel Grant	2015
NYU MacCracken Program Award	2014 - 2015

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\* Dean's Undergraduate Research Fund, a competitive grant dedicated to undergraduate research

## OUTREACH & UNIVERSITY SERVICE

Volunteer with <b>N</b> euroscience <b>O</b> utreach <b>G</b> roup at <b>NYU</b> (NOGN)	2016 – present
World Science Festivals, Biobus, Family Night at New York Hall of Science	
NYU Women in Science, graduate student mentor & panelist	2016 – present
Volunteer co-organizer for annual prospective Ph.D. student weekends	2014 – present
Lead doctoral student organizer for NYU MA research conference	2017 & 2018
Led workshops for MA students on how to make effective poster presentations	
National Science Foundation Virtual Mentor	2016
Doctoral student judge for NYU MA research conference	2015

## PROFESSIONAL MEMBERSHIPS & SERVICE

Vision Sciences Society  
Association for Psychological Science  
New York Academy of Sciences  
braiNY: Greater New York City Chapter of Society for Neuroscience  
NOGN: Neuroscience Outreach Group at NYU  
Ad-hoc reviewer for Scientific Reports  
Ad-hoc reviewer for Journal of Vision

## SKILLS

<b>Experimental</b>	Design, data collection, and analysis of perceptual psychophysical studies Eye movement recording (Eyelink 1000, ISCAN) and analysis Figure editing using Inkscape
<b>Programming</b>	Matlab: experimental programming (MGL toolbox), data analysis, figure creation SPSS Statistics R: data processing, statistical analysis and visualization GitHub: uploading, revising, and sharing code Basics of HTML for personal website maintenance
<b>Neuroimaging</b>	Certified user of the magnetic resonance image (MRI) facility Experimental design of fMRI studies Data analysis (FSL, Freesurfer, SPM Toolbox) Anatomical segmentation of 18F-FDG-PET scans (ROVER software)
<b>TMS</b>	Certified transcranial magnetic stimulation (TMS) operator Magstim Rapid2 Plus1 stimulator (3.5T), 70mm figure-of-eight coil Brainsight Neuronavigation system (Rogue Research) FASTSCAN digital laser scanner Experimental design of TMS studies, phosphene thresholding, data collection
<b>Administrative</b>	Successful initial submission and maintenance of institutional review board protocols Assistance with successful grant submissions (NIH R01, NSF) Maintenance of Endnote reference library Creation and maintenance of lab website and internal wiki

## REFERENCES

**Marisa Carrasco, Ph.D.**

Julius Silver Professor of Psychology and Neural Science  
New York University  
6 Washington Place  
New York, NY 10003  
(212) 998-8328  
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**Jonathan Winawer, Ph.D.**

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**Michael S. Landy, Ph.D.**

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