

CARLOS R. PONCE, M.D., Ph.D.

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EDUCATION

M.D. Harvard Medical School (HMS), 2010
Ph.D. Program in Neuroscience, Harvard Graduate School of Arts and Sciences, 2008
B.S. Biology and chemistry, University of Utah, 2001

PROFESSIONAL APPOINTMENTS

Assistant Professor, Department of Neuroscience, Washington University (starting 3/1/2018)
Postdoctoral Associate, Center for Brains, Minds and Machines (2016-2018), Massachusetts Institute of Technology and HMS Department of Neurobiology.
Research Fellow in Neurobiology, (2012 – 2016) Livingstone laboratory, HMS.
Pathology Resident (2010–2012), Massachusetts General Hospital.

PUBLICATIONS

Peer-reviewed

Ponce CR, Lomber SG, Livingstone MS. (2017) Posterior inferotemporal cortex cells use multiple visual pathways for shape encoding. *J. Neurosci.*

Ponce CR, Hartmann T, Livingstone MS. (2017) Curvature and end-stopping as organizing principles for ventral stream organization. *J. Neurosci.* December; 2507-16.

Ponce CR, Genecin MP, Perez-Melara G and Livingstone, MS. (2016) Automated chair-training of rhesus macaques. *J Neurosci Methods*, Apr 1; 263:75-80.

Ponce CR, Hunter JN, Pack CC, Lomber SG, Born RT. (2011) Contributions of indirect pathways to visual response properties in macaque middle temporal area MT. *J. Neurosci.* Mar 9; 31(10):3894-903.

Ponce CR, Lomber SG, Born RT. (2008) Integrating motion and depth via parallel pathways. *Nat Neurosci.* 2008 Feb; 11(2):216-23.

Born RT, Pack CC, **Ponce CR**, Yi S. (2006) Temporal evolution of 2-dimensional direction signals used to guide eye movements. *J Neurophysiol.* Jan; 95(1):284-300.

Review articles

Ponce CR, Born RT. (2008) Stereopsis. *Curr Biol.* Sep 23; 18(18): R845-50.

GRANTS AND FELLOWSHIPS

2016 Goldenson Fellowship in Neurobiology, Harvard Medical School
2014-15 Dean's Postdoctoral Fellowship, Harvard Medical School

CARLOS R. PONCE, M.D., Ph.D.

2013-16 Postdoctoral Enrichment Award, Burroughs Wellcome Fund
2008–2010 Medical Scientist Training Program Funding, HMS
2006–2007 Albert J. Ryan Foundation Fellowship, Cincinnati, Ohio
2007 Mind/Brain/Behavior Initiative Travel Award, Harvard University
2005–2008 F31 National Institute of Neurological Disorders and Stroke, F31 NS052926
2003 Cambridge Science Foundation Travel Grant, Boston, MA

INVITED TALKS

2014 Harvard School of Public Health, Dept. of Biostatistics, Neurostatistics Working Group
2006 Convergence of Functional Streams in Primate Visual Cortex, Department of Cognitive and Neural Systems, Boston University

CONFERENCE PARTICIPATION

Oral presentations

Ponce CR, Hartmann TS, Livingstone MS (2016) End-stopping as a principle for functional organization in areas V1, V4 and posterior IT. Society for Neuroscience meeting, San Diego, California.

Ponce CR, Lomber SG, Livingstone MS (2015) How inferotemporal cortex neurons depend on extrastriate input networks. Society for Neuroscience meeting, Chicago.

Ponce CR, Lomber SG, Born RT (2006) Modality-specific changes in tuning properties of MT neurons during inactivation of the indirect (V2/V3) pathway in alert macaques. Society for Neuroscience meeting, Atlanta, Georgia.

Posters

Ponce CR, Lomber SG, Livingstone MS (2014) How inferotemporal cortex cells use different cortical inputs for selectivity and tolerance. Society for Neuroscience meeting, Washington D.C.

Ponce CR, Lomber SG, Born RT (2007) Integrating motion and depth via parallel pathways. Poster presentation delivered at the Society for Neuroscience meeting, San Diego, California.

Ponce CR, Lomber SG, Born RT (2006) Contributions of visual areas V2 and V3 to the analysis of depth and motion signals guiding smooth eye movements. *Journal of Vision* June 1, 2006 vol. 6 no. 6 article 4. Poster presentation.

Ponce CR, Lomber SG, Born RT (2005) Contributions of visual areas V2 and V3 to the analysis of depth and motion signals guiding eye movements. Abstracts of the Thirteenth European Conference on Eye Movements (ECEM13). Poster presentation.

CAMPUS TALKS

2015 Harvard Department of Neurobiology, laboratory research presentation
2014 Harvard School of Public Health, Dept. of Biostatistics, Neurostatistics Working Group.

TEACHING

CARLOS R. PONCE, M.D., Ph.D.

2015-2016 Harvard Graduate School of Arts and Sciences. **Guest lecture** for Gabriel Kreiman's "Visual object recognition: computational and biological mechanisms"

2012-2015, 2005–2008, Laboratory mentor for summer undergraduate and underrepresented minority students.

2006–2007 Department of Neurobiology, HMS. Teaching assistant, *Introduction to Neurobiology*

OTHER RESEARCH EXPERIENCE

- 2014 Hands-on experience with molecular cloning techniques such as plasmid amplification for AAV vectors. Dr. Constance Cepko.
- 2002–2003 Eye movements in mice exposed to multi-directional signals. Richard Born laboratory. Research rotations during pre-clinical medical school training (years 1–2).
- 1997–2001 Development of molecular ligands for vomeronasal epithelial cells. Research technician in the lab of Louis Monti-Bloch, University of Utah Neuropsychiatric Institute.

SERVICE

- 2015 Harvard Medical Institutional Animal Care and Use Committee, alternate member
- 2015 Massachusetts State Science and Engineering Fair, Cambridge MA, Judge
- 2003-2014 Harvard Mind/Brain/Behavior Initiative, various steering committees
- 2012-2014 Journal reviewing (along with Dr. Livingstone)
- 2013-2014 Mentor for Project Success, an underrepresented minority outreach program for summer research.

LANGUAGES/SKILLS

Native Spanish speaker (born and raised in Mexico)
In vivo electrophysiology, Matlab programming, electronics, statistics, machine learning, computational modeling, microscopy, histology

PROFESSIONAL AFFILIATIONS

2003–present Society for Neuroscience

PROFESSIONAL DEVELOPMENT

- 2012-2016 Course participant in Machine Learning, Linear Algebra, Multivariate Calculus at the Harvard Extension School
- 2014 Course participant in "Scientists Teaching Science," an online course for HMS Scientists
- 2013 NIH/NINDS Symposium, Broadening the Representation of Academic Investigators in Neuroscience. Selected participant.
- 2012 NIH/NINDS Grant Writing Workshop for Diverse Researchers. Selected participant.

REFERENCES

CARLOS R. PONCE, M.D., Ph.D.

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