

Mahalakshmi Ramamurthy

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Research Interests

Functional plasticity in the adult brain
Visual attention (mechanisms and resource allocation)
Visual development and its neural underpinnings

Education and Experience

- 2015 – 2017 *PhD candidate* – Human Vision Laboratory, Developmental and Brain Sciences Program, University of Massachusetts, Boston.
- 2012 – 2015 *Pre-Doctoral student* - Human Vision Laboratory
- 2012 *Research Assistant* at the School of Optometry, University of Waterloo, Ontario. (March to July).
- 2012 *Engineering Assistant* – Industrial Research Lab, Short-term contract position. (Jan to June).
- 2009 – 2011 *MSc in Vision Science*, School of Optometry, University of Waterloo, Waterloo, Ontario, Canada.
- 2008 – 2009 *Lecturer* – General Anatomy & Ocular Anatomy, Human Physiology
- 2004 – 2008 *B.Sc. Optometry*, Elite School of Optometry, BITS, Chennai, India.
- 2003 – 2004 *HSSLC Holy Angels Anglo Indian Higher Secondary School*, Chennai, India
- 2001 – 2002 *SSLC Holy Angels Anglo Indian Higher Secondary School*, Chennai, India

Awards and Honors

- 2015 Dissertation Proposal grant award. Internal UMass research grant.
- 2015 Cold Spring Harbor course on Vision: Linking Circuits Perception and Behavior.
- 2014 Travel Award - Vision Science Society Conference.
- 2013 Joseph. H. Healey grant. Internal UMass research grant.
- 2012 Dean of Science Award for creative and outstanding research, University of Waterloo.
- 2011 Graduate Research Studentship, University of Waterloo.
- 2010 University of Waterloo Graduate Scholarship & Science Graduate Experience Award
- 2009 University of Waterloo Graduate Scholarship & Science Graduate Experience Award
- 2009 International Master's Student Award, University of Waterloo.
- 2008 Excellence in Human Anatomy- 2nd in Cooper Exam.
- 2007 Excellence in Pediatric Optometry.
- 2007 Dr. S. Srinivasan Award for the Best Project of the Year.
- 2007 Essilor Award in Dispensing Optics.
- 2005 Appreciation award for summer project on, "Literature search on the Duochrome test".

Publications, posters and current submissions

Ramamurthy. M, Blaser.E; (2017) Non-contrast induced contrast based gain control in the adult visual system. (*In preparation*).

- Ramamurthy.M, Blaser.E; (2017) Sustained homeostatic response in the normal adult visual system. (*In preparation*).
- Ramamurthy. M, Blaser. E; (2017) New rules for visual selection: Isolating procedural attention. *Journal of Vision*, 17(2):18. doi: 10.1167/17.2.18.
- Ramamurthy. M, Blaser E., (2016) Ocular dominance plasticity tested with non-contrast based (kaleidoscopic) monocular deprivation, Vision science society Conference. *Journal of Vision*, 12, 432.
- Ramamurthy. M & Lakshminarayan. V., (2015), *Light and Sight*, in Ghatak, A., A. Pathak, and V. P. Sharma (eds.), *Light and Its Many Wonders*, National Academy of Sciences, Viva Books, India, p. 368-380, HIGP-2179.
(*This book is a dedication to the International year of Light and light-based technologies 2015*).
- Ramamurthy. M and Lakshminarayanan. V, (2015) Human Vision and Perception, Handbook of Advanced Lighting Technology, Springer, DOI 10.1007/978-3-319-00295-8_46-1.
- Ramamurthy. M & Blaser, E. (2014). New rules for visual attention selection. Vision Sciences Society Conference. *Journal of Vision*, 14, 1028.
- Ramamurthy. M, Hovis, J., Zsivanov, D., & Lakshminarayanan, V. (2013). Color shifts at different viewing eccentricities on flat-panel rear projection displays in steps of perceptibility threshold units. *Journal of Modern Optics*, 60(14), 1151-1158.
- Ommani A, Thapa D, Ramamurthy M, Lu Y, Lakshminarayanan V, Leys M, Mumford R.B., Odom J. V., Kondo T, Wu F; (2012) An assessment of universal reading acuity chart, American Academy Optometry meeting Phoenix.
- T Kondo, F. Wu, D. Thapa, A. Ommani, M. Ramamurthy, V. Lakshminarayanan, M. Leys, R.B. Mumford, J. V. Odom, (2012) Evaluation of a Universal Reading Acuity Chart in a Clinical Population, ARVO abstract, program # 4794/D709, Association for Research in Vision and Ophthalmology annual meeting.
- Ramamurthy. M, Hovis. J., and Lakshminarayanan. V, (2012) Acceptability ratings for simulated image distortions of static images corresponding to different viewing angles for a flat panel display, Proceedings of CGIV, Pages 31-35, Society for Imaging Science and Technology.
- Ramamurthy, M. Colour discrimination thresholds and acceptability ratings using simulated Microtile displays, 2011.
(https://uwspace.uwaterloo.ca/bitstream/10012/6349/1/Ramamurthy_Mahalakshmi.pdf)
- Ramamurthy. M, Varadharajan. S, Devi. Y, & Mohan. S; (2010) Effects of Changing Duochrome's Foreground and Background on the End Point of Subjective Spherical Refraction. In *Frontiers in Optics*. Optical Society of America.

Symposium/Conference Attended

- Vision Science Society (2016).
- Cold Spring Harbor Laboratory course on Vision: Linking Circuits Perception and Behavior (2015).
- Vision Science Society (2014).
- Vision Science Society (2013).
- 6th European Conference CGIV (2012).
- International Center for Theoretical Physics (ICTP) (2011)
- Eight E Vaithilingam Memorial Conference (2010).
- 27th Center for Vision Science Symposium, University of Rochester (2010).
- Seventh E Vaithilingam Memorial Conference (2008).
- Sixth E Vaithilingam Memorial Conference (2007).
- Elite School of Optometry International Vision Science and Optometry Conference (2006).

Oral Presentations

- "Acceptability ratings for simulated image distortions at different viewing angles for static complex images" in the 6th European Conference CGIV, Amsterdam, 2012.
- "Color Perceptibility thresholds using CRT monitors" in the International Center for Theoretical Physics (ICTP), Trieste, Italy- January, 2011.

“Effects of modifying the Duochrome test on subjective spherical endpoint of refraction” in the Graduate Student research Conference, University of Waterloo, 2010.

Color Perceptibility thresholds and industrial color norms, at Eight E Vaithilingam Memorial Conference, 2010.

“Effects of changes in Duochrome’s foreground and background on the end point of subjective refraction” in the Seventh E Vaithilingam Memorial Conference, 2008.

Skills

Psychophysical Experimental Design and Analysis.

Programing in Matlab (Psychtoolbox).

Tobii eye tracker system (Tobii Studio).

Near-infrared Spectroscopy (NIRS) imaging tool.

PsyScope (basic programming)

R (basic programming and for statistical analysis)

Experience in monitor calibration routines and color space transformations and color stimulus.

Basic - Python

Statistical software - SPSS, Graph Pad, Sigmaplot, Excel

Clinical Optometry

References

Dr. Vasudevan (Vengu) Lakshminarayanan
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Associate Professor, Department of Psychology,
University of Massachusetts,
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