

Michael J. Arcaro

Department of Psychology
University of Pennsylvania

e-mail: marcaro@sas.upenn.edu
<https://arcarolab.org>

EMPLOYMENT

- 2020 – Assistant Professor
Department of Psychology
University of Pennsylvania
- 2017 – 2019 Instructor in Neurobiology
Advisor: Margaret Livingstone, Ph.D.
Livingstone Laboratory, Harvard Medical School
- 2015 – 2017 Postdoctoral Fellow
Advisor: Margaret Livingstone, Ph.D.
Livingstone Laboratory, Harvard Medical School
- 2013 – 2015 Postdoctoral Research Associate
Advisor: Sabine Kastner, Ph.D., M.D.
Neuroscience of Attention & Perception Laboratory, Princeton University

EDUCATION

- 2013 Princeton University – Ph.D. in Psychology and Neuroscience
2011 Princeton University – M.A. in Psychology and Neuroscience
2004 Boston University – B.A. in Psychology and Philosophy (*cum laude*)

AWARDS & HONORS

- 2019 David Hubel Outstanding Postdoctoral Fellow
2018 Harvard Faculty Research Award – Mind, Brain, and Behavior program
2017 William Randolph Hearst Fellowship
2016 Mahoney Postdoctoral Fellow
2010 Quantitative and Computational Neuroscience Fellowship / NIH T90

PRE-PRINTS

Arcaro MJ, Mautz T, Livingstone MS (2020) Anatomical correlates of face patches in macaque inferotemporal cortex. *bioRxiv*

PEER-REVIEWED PUBLICATIONS

Arcaro MJ, Ponce CR, Livingstone MS (2020) The neurons that mistook a hat for a face. *eLife*. 9(e53798), 1-19

Natu V, **Arcaro MJ**, Barnett MA, Gomez J, Livingstone MS, Grill-Spector K, Weiner KS (2020) Sulcal depth in medial ventral temporal cortex predicts the location of a place-selective region in macaques, children, and adults. *Cerebral Cortex*, bhaa203, <https://doi-org.proxy.library.upenn.edu/10.1093/cercor/bhaa203>

Arcaro MJ, Schade P, Livingstone MS (2019) Body-map proto-organization in newborn macaques. *PNAS*. 116(49) 24861-24871

Arcaro MJ, Schade PF, Livingstone MS (2019) Universal mechanisms and the development of the face network: what you see is what you get. *Annual Review of Vision Science*. 5. 341-372.

Livingstone MS, **Arcaro MJ**, Schade P (2019) Cortex is cortex: ubiquitous principles drive face-domain development. *Trends in Cognitive Sciences*. 23 (1), 3-4.

Arcaro MJ, Thaler L, Quinlan DJ, Monaco S, Khan S, Valyear KF, Goebel R, Dutton GN, Goodale MA, Kastner S, Culham JC. (2019) Psychophysical and neuroimaging responses to moving stimuli in a patient with the Riddoch phenomenon due to bilateral visual cortex lesions. *Neuropsychologia*. 128. 150-165.

Benson N, Jamison KW, **Arcaro MJ**, Vu A, Glasser MF, Coalson TS, Van Essen D, Yacoub E, Ugurbil K, Winawer J, Kay K. (2018) The HCP 7T Retinotopy Dataset: Description and pRF Analysis. *Journal of Vision*. 18 (13) 1-22.

Arcaro MJ, Pinsk MA, Chen J, Kastner S. (2018) Organizing principles of pulvino-cortical coupling in humans. *Nature Communications*. 9(1), 1-14.

Haufe S, DeGuzman P, Henin S, **Arcaro MJ**, Honey CJ, Hasson U, Parra LC. (2018) Elucidating relations between fMRI, ECoG and EEG through a common natural stimulus. *NeuroImage*. 179, 79-91.

Todd N, Zhang Y, **Arcaro MJ**, Becerra L, Borsook D, Livingstone MS, McDannold N. (2018) Focused ultrasound induced opening of the blood-brain barrier disrupts inter-hemispheric resting state functional connectivity in the rat brain. *NeuroImage*. 178, 414-422.

Arcaro MJ*, Schade PF*, Vincent JL, Ponce CR, Livingstone MS*. (2017) Seeing faces is necessary for face-patch formation. *Nature Neuroscience*. 20(10), 1-9.

Arcaro MJ & Livingstone MS. (2017) A hierarchical, retinotopic proto-organization of the primate visual system at birth. *eLife*. 6(e26196), 1-24.

Arcaro MJ & Livingstone MS. (2017) Retinotopic organization of scene areas in the macaque inferior temporal cortex. *Journal of Neuroscience*. 37(31), 7373-7389.

Livingstone MS*, Vincent JL*, **Arcaro MJ***, Srihasam K, Schade P, Savage T. (2017) Development of the macaque face-patch system. *Nature Communications*. 8, 1-12.

Chen J, Honey CJ, Simony E, **Arcaro MJ**, Norman KA, Hasson U. (2016) Accessing real-life episodic information from minutes versus hours earlier modulates hippocampal and high-order cortical dynamics. *Cerebral Cortex*. 28(8), 3428-3441.

Arcaro MJ, Pinsk MA, Kastner S. (2015) The anatomical and functional organization of the human visual pulvinar. *Journal of Neuroscience*. 35(27), 9848-9871.

Arcaro MJ & Kastner S. (2015) Topographic organization of areas V3 and V4 and its relation to supra-areal organization of the primate visual system. *Visual Neuroscience*. 32(e015), 1-15.

Arcaro MJ, Honey CJ, Mruczek REB, Kastner S, Hasson U. (2015) Widespread correlation patterns of fMRI signal across visual cortex reflect eccentricity organization. *eLife*. 4(e03952), 1-28.

Lombaert H, **Arcaro MJ**, Ayache N. (2015) Brain transfer: spectral analysis of cortical surfaces and functional maps. *IPMI*. 9123, 474-487.

Wang L, Mruczek REB, **Arcaro MJ**, Kastner S. (2015) Probabilistic maps of visual topography in human cortex. *Cerebral Cortex*. 25(10) 3911-3931.

Kelly YT, Webb TW, Meier JD, **Arcaro MJ**, Graziano MSA (2014). Attributing awareness to oneself and to others. *PNAS*. 111(13), 5012-5017.

Wang L, Saalmann YB, Pinsk MA, **Arcaro MJ**, Kastner S (2012). Electrophysiological low-frequency coherence and cross-frequency coupling contributes to BOLD connectivity. *Neuron*. 76(5), 1010-1020.

Arcaro MJ, Pinsk MA, Li X, Kastner S (2011). Visuotopic organization of macaque posterior parietal cortex: An fMRI study. *Journal of Neuroscience*. 31(6), 2064-2078.

Caplovitz GP, **Arcaro M**, Kastner S (2010). Stage 3 and what we see. *Cognitive Neuroscience*. 1(3), 220-222.

Carmel D, **Arcaro MJ**, Kastner S, Hasson U (2010). How to create and use binocular rivalry. *Journal of Visualized Experiments (JoVE)*. 45(e2030), 1-10.

Arcaro MJ*, McMains S*, Singer B, Kastner S (2009). Retinotopic organization of human ventral visual cortex. *Journal of Neuroscience*. 29(34), 10638-10652.

Pinsk MA, **Arcaro M**, Weiner KS, Kalkus JF, Inati SJ, Gross CG, Kastner S (2009). Neural representations of faces and body parts in the macaque and human cortex: A comparative fMRI study. *Journal of Neurophysiology*. 101, 2581-2600.

REVIEWING – publons.com/a/1217788/

Cerebral Cortex, Cortex, eLife, Human Brain Mapping, J Neuro, Nat Comm., NeuroImage, Neuropsychologia

PROFESSIONAL ACTIVITIES AND SERVICE

2018 Co-chair for Society for Neuroscience nanosymposium, *Vision: Representation of Faces and Bodies*
2017 Postdoctoral steering committee for Harvard's Mind Brain Behavior program

TEACHING

2014 NEU 502 From Molecules to Systems to Behavior - Workshop: Functional connectivity
2013 PSY 255 Cognitive Psychology – Precept Instructor
2012 PSY 311 Rationality and Human Reasoning – Precept Instructor
2011 PSY 259 Cognitive Neuroscience - Lab Instructor
2010 NEU 502 From Molecules to Systems to Behavior - Workshop: Retinotopic mapping with fMRI

MENTORING

2017- Theoroda Mautz, Research project on structure-function relationships in IT, Harvard University
2015-2017 Maddie Snyder, Senior Thesis on functional connectivity in infant monkeys, Harvard University
2010 Oly Khowash, Summer research project on DTI methods development, Princeton University
2009 Jan Kalkus, Summer research project on fMRI surface-based analyses, Princeton University

CONFERENCE PRESENTATIONS

Arcaro MJ, Mautz T, Livingstone MS (2020). Anatomical folding predicts the location of face-selective domains in macaque IT. Vision Sciences Society Meeting Abstract 20. V-VSS.

Arcaro MJ, Ponce CR, Livingstone MS (2019). The neurons that mistook a hat for a face. Society for Neuroscience Abstracts 45: Program Number 489.05.

Arcaro MJ, Ponce CR, Livingstone MS (2019). The neurons that mistook a hat for a face. Vision Sciences Society Meeting Abstract 19.

Arcaro MJ, Schade PF, Livingstone MS (2018). Multiple body maps in newborn macaques. Society for Neuroscience Abstracts 44: Program Number 642.14.

Arcaro MJ, Schade PF, Livingstone MS (2018). Preserved cortical organization in the absence of early visual input. Vision Sciences Society Meeting Abstract 18.

Arcaro MJ, Schade PF, Livingstone MS (2017). Experience-dependent development of the visual system is anchored to an innate retinotopic organization. Society for Neuroscience Abstracts 43: Program Number 492.08.

Arcaro MJ & Livingstone MS (2017). Retinotopic organization of scene area in macaque inferior temporal cortex and its implications for development. Vision Sciences Society Meeting Abstract. 17.

Arcaro MJ, Vincent JL, Schade P, Srihasam K, Livingstone MS (2016). A retinotopic proto-organization in IT present at birth. Society for Neuroscience Abstracts 42: Program Number 800.04

Arcaro MJ, Pinsk MA, Kastner S (2015). Functional and anatomical organization of the dorsal pulvinar in humans. Society for Neuroscience Abstracts 41: Program Number 148.27

Arcaro MJ, Pinsk MA, Kastner S (2014). Functional and anatomical connectivity between the pulvinar and temporal cortex. Society for Neuroscience Abstracts 40: Program Number 816.15

Arcaro MJ, Pinsk MA, Kastner S (2013). Investigating the organization of functional and anatomical thalamo-cortical connectivity in the human pulvinar. Society for Neuroscience Nanosymposium 310: Program Number 310.08

Arcaro MJ, Honey CJ, Mruczek REB, Kastner S, Hasson U (2012). Functional connectivity reveals a large-scale eccentricity organization within visual cortex. Society for Neuroscience Abstracts 38: Program Number 573.08

Arcaro MJ & Kastner S (2011). Topographic organization and attention functions of the human pulvinar. Society for Neuroscience Minisymposium 113: Program Number 113.02

Arcaro MJ, Mclean DA, Quinlan J, Dutton GN, Goodale MA, Kastner S, Culham JC (2011). Cortical and subcortical response properties in a patient with visual cortex lesions. Society for Neuroscience Abstracts 37: Program Number 695.12

Arcaro MJ, Pinsk MA, McMains SA, Kastner S (2010). Visuotopic organization of the human pulvinar revealed using high-resolution fMRI. Society for Neuroscience Abstracts 36: Program Number, 72.14.

Arcaro MJ, Pinsk MA, Li X, Kastner S (2010). Topographic organization of posterior parietal cortex in awake macaque monkeys: an fMRI study. Gordon Conference: Neurobiology of Cognition, Waterville Valley, NH.

Arcaro MJ, Pinsk MA, Konen C, Li X, Kastner S (2009). Topographic organization of posterior parietal cortex in awake macaque monkeys revealed using fMRI. Society for Neuroscience Abstracts 35: Program Number, 759.3.

Arcaro MJ & Kastner S (2008). Neural correlates of binocular rivalry in the human visual system using simple and complex stimuli. Society for Neuroscience Abstracts 34: Program Number, 462.24

Arcaro MJ, McMains S, Kastner S (2008). Phase-encoded attention tasks reveal topographic maps in posterior parahippocampal cortex. Vision Sciences Society Meeting Abstract (8)6, 1001

Arcaro MJ, McMains S, Kastner S (2007). Phase-encoded attentive tracking reveals topographic maps in human ventral occipital cortex. Society for Neuroscience Abstracts 33: Program Number, 280.4

ADDITIONAL CONFERENCE PRESENTATIONS

Ellis C, Yates T, Skalaban L, Bejjanki V, Arcaro MJ, Turk-Browne N (2020). Retinotopic mapping with fMRI in awake, behaving infants. Vision Sciences Society Meeting Abstract 20. V-VSS.

Natu V, **Arcaro MJ**, Barnett MA, Gomez J, Livingstone MS, Grill-Spector K, Weiner KS (2019). Development and evolution of sulcal morphology in place-selective regions of ventral temporal cortex. HBM 2019.

Schade PF, **Arcaro MJ**, Livingstone MS (2018). Effects of experience on face and body selective neurons in macaque IT. Society for Neuroscience Abstracts 44: Program Number 307.16.

Benson NC, Jamison KW, **Arcaro MJ**, Vu AT, Glasser MF, Van Essen DC, Ugurbil K, Winawer J, Kay KN (2018). The human connectome project 7t retinotopy dataset: A freely available resource of human visual organization. Society for Neuroscience Abstracts 44: Program Number 719.07.

Todd N, Sun T, Zhang Y, Power C, **Arcaro MJ**, Patz S, Livingstone M, McDannold N (2017) Resting state functional MRI for evaluation of focused ultrasound induced disruption of the blood brain barrier. ISTU. Nashville, TN. Abstract #2956547.

Livingstone MS, **Arcaro MJ**, Schade PF, Vincent JL, Ponce CR (2017). The effects of early face deprivation on the macaque face-patch system. Society for Neuroscience Abstracts 43: Program Number 492.09.

Todd N, Sun T, Zhang Y, Power C, **Arcaro MJ**, Patz S, Livingstone M, McDannold N (2017) Functional MRI evaluation of a novel approach to neuromodulation: Targeted delivery of GABBA via focused ultrasound-mediated disruption of the blood-brain barrier. ISMRM. Honolulu, Hawaii. Abstract #0109.

Culham JC, **Arcaro MJ**, Thaler L, McLean DA, Quinlan DJ, Dutton GN, Goodale MA, Kastner S (2016). Cortical and subcortical responses to moving stimuli in a patient with Riddoch phenomenon arising from bilateral visual cortex lesions. 34th European Workshop on Cognitive Neuropsychology. Bressanone, Italy. Poster #114.

Lombaert H, **Arcaro MJ**, Kastner S, Ayache N (2015). Brain transfer for the analysis of cortical data. Society for Neuroscience Abstracts 41: Program Number 830.11

Wang L, Mruczek REB, **Arcaro MJ**, Kastner S (2012). Visual topographic probability maps (VTPM) in standard MNI space. Society for Neuroscience Abstracts.

Pinsk MA, Saalmann YB, Wang L, **Arcaro MJ**, Li X, Kastner S (2011). Electrophysiological basis of resting state fMRI. Society for Neuroscience Abstracts 37: Program Number 398.08

Pinsk MA, **Arcaro MJ**, Kastner S (2010). A comparative approach using fMRI to investigate the face perception network in humans and macaques. ECVF. Lausanne, Switzerland.

Caplovitz GP, **Arcaro MJ**, Kastner S (2010). Categorical representation of visually suppressed objects in visual cortex. Vision Sciences Society Meeting Abstract.

Lee RF, Xu J, Prabhakaran K, **Arcaro MJ** (2009). Spatial and spectral analysis for a radial sampling balanced SSFP for fMRI. ISMRM: Program Number, 7071

Pinsk MA, **Arcaro MJ**, Konen CS, Li X, Kastner S, Inati SJ (2008). Improved functional MRI of the macaque ventral visual pathway at 3T using multi-echo EPI and dynamic, field map corrected image reconstruction. Society for Neuroscience Abstracts 34: Program Number, 260.2

Konen CS, Pinsk MA, **Arcaro MJ**, Li X, Inati SJ, Kastner S (2008). Object representations in monkey posterior parietal cortex. Society for Neuroscience Abstracts 34: Program Number, 261.2

Konen CS, Pinsk MA, **Arcaro MJ**, Kastner S (2008). Object representations in the dorsal pathway: fMRI adaptation effects in macaque posterior parietal cortex. Vision Sciences Society Meeting Abstract (8)6, 493