

THADDEUS B. CZUBA, PH.D.

Senior Research Scientist, Visual Neuroscience
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Education

Ph.D. Psychology	Univ. of Texas, Austin, TX Area: Sensory Neuroscience	2012
B.S Psychology	Indiana Univ., Bloomington, IN Minor: Chemistry, Studio Art	2006

Experience

Research Scientist	Center for Perceptual Systems <i>Univ. of Texas at Austin</i>	2019–2022
Postdoctoral Fellow	Neural circuits for 3D motion (electrophysiology) <i>Univ. of Texas at Austin — Alex Huk & Larry Cormack</i>	2016–2018
Postdoctoral Fellow	Visual adaptation & population coding (electrophysiology) <i>Albert Einstein College of Med. — Adam Kohn</i>	2012–2016
Graduate Research	Binocular 3D motion mechanisms (psychophysics & neuroimaging) <i>Univ. of Texas at Austin — Alex Huk & Larry Cormack</i>	2012
Research Assistant	Mechanisms of chromatic adaptation (psychophysics) <i>Univ. of California San Diego — Don MacLeod</i>	2007
Undergrad. Research	Fundamentals of visual psychophysics <i>Indiana Univ. Bloomington — Jason Gold</i>	2006

Publications

- Whritner, J. A., Czuba, T. B., Cormack, L.K., Huk, A.C. (2021). Spatiotemporal integration of isolated binocular 3D motion cues. *Journal of Vision*, 21(10):2, 1–12. ([PDF](#))
- Bonnen, K., Czuba, T. B., Whritner, J. A., Kohn, A., Huk, A. C., & Cormack, L. K. (2020). Binocular viewing geometry shapes the neural representation of the dynamic three-dimensional environment. *Nature Neuroscience*, 23(1), 113–121. ([PDF](#))
- Cormack, L.K., Czuba, T.B., Knöll, J., Huk, A.C. (2017). Binocular Mechanisms of 3D Motion Processing. *Annual Review of Vision Science*, 3, 297–318. ([PDF](#))
- Joo, S.J., Czuba, T.B., Cormack, L.K., Huk, A.C. (2016). Separate Perceptual and Neural Processing of Velocity- and Disparity-Based 3D Motion Signals. *The Journal of Neuroscience*, 36(42), 10791–10802. ([PDF](#))
- Czuba, T.B., Huk, A.C., Cormack, L.K., Kohn, A. (2014) Area MT encodes three-dimensional motion. *The Journal of Neuroscience*, 34(47), 15522–33. ([PDF](#))
- Czuba, T.B., Rokers, B., Huk, A.C., Cormack, L.K. (2012). To CD or not to CD: Is there a 3D motion aftereffect based on changing disparities? *Journal of Vision*, 12(4), 7. ([PDF](#))
- Czuba, T.B., Rokers, B., Guillet, K., Huk, A.C., Cormack, L.K. (2011). Three-dimensional motion aftereffects reveal distinct direction-selective mechanisms for binocular processing of motion through depth. *Journal of Vision*, 11(10), 18. ([PDF](#))
- Rokers, B., Czuba, T.B., Cormack, L.K., Huk, A.C. (2011). Motion processing with two eyes in three dimensions. *Journal of Vision*, 11(2), 10. ([PDF](#))
- Czuba, T.B., Rokers, B., Cormack, L.K., Huk, A.C. (2010). Speed and eccentricity reveal a central role for the velocity-based cue to 3D visual motion. *Journal of Neurophysiology*, 104(5), 2886–99. ([PDF](#))

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Conference Presentations

- Czuba, T.B., Cormack, L.K., & Huk, A.C. (2019). Functional architecture and mechanisms for 3D direction and distance in middle temporal visual area. *Vision Sciences Society 2019 Annual Meeting* ([Demos](#), [PDF](#))
- Whritner, J.A., Czuba, T.B., Cormack, L.K., & Huk, A.C. (2019). Temporal integration of isolated 3D motion cues. *Vision Sciences Society 2019 Annual Meeting* (Poster)
- Bonnen, K., Czuba, T.B., Whritner, J.A., Kuo, A.C., Huk, A.C., & Cormack, L.K. (2018). 3D motion direction estimation: Model predictions and data. *Vision Sciences Society 2018 Annual Meeting* (Poster) ([Abstract](#))
- Bonnen, K., Czuba, T.B., Kohn, A., Cormack, L.K., & Huk, A.C. (2017). Encoding and decoding in neural populations with non-Gaussian tuning: the example of 3D motion tuning in MT. *Vision Sciences Society 2017 Annual Meeting* (Talk) & *COSYNE 2017 Annual Meeting* (Poster) ([Abstract](#))
- Czuba, T.B., Kohn, A. (2015). Decoding visual stimulus orientation from adapted neural populations. *Society for Neuroscience 2015 Annual Meeting* (Poster) ([PDF](#))
- Czuba, T.B., Huk, A.C., Cormack, L.K., Kohn, A. (2014). More than meets the eye: Binocular 3D motion processing in area MT. *Annual Interdisciplinary Conference* (TALK) ([Abstract](#))
- Czuba, T.B., Cormack, L.K., Huk, A.C., Kohn, A. (2013). Neuronal selectivity for directions of 3D motion in area MT. *Vision Sciences Society 2013 Annual Meeting* (TALK) ([Abstract](#))
- Czuba, T.B., Cormack, L.K., Huk, A.C., Kohn, A. (2013). Distinct neural selectivity for 3D directions of visual motion. *COSYNE 2013 Annual Meeting* (Poster) ([PDF](#))
- Czuba, T.B., Huk, A.C., Cormack, L.K. (2011). Isolation of binocular 3D motion cues in human visual cortex. *Vision Sciences Society 2011 Annual Meeting* (Poster) ([PDF](#))
- Czuba, T.B., Cormack, L.K., Huk, A.C., Rokers, B. (2010). Distinct binocular mechanisms of 3D motion perception. *Vision Sciences Society 2010 Annual Meeting* (TALK) ([Abstract](#))
- Hennig, J., Czuba, T.B., Cormack, L.K., Huk, A.C., Rokers, B. (2010). The aperture problem in three dimensions. *Vision Sciences Society 2010 Annual Meeting* (Poster) ([Abstract](#))
- Czuba, T.B., Cormack, L.K., Huk, A.C., Rokers, B. (2009). Selective adaptation of 3D motion mechanisms. *Society for Neuroscience 2009 Annual Meeting* (Poster) ([PDF](#))
- Czuba, T.B., Guillet, K., Cormack, L.K., Huk, A.C., Rokers, B. (2009). Selective adaptation of 3D motion mechanisms. *Vision Sciences Society 2009 Annual Meeting* (Poster) ([PDF](#))
- Czuba, T.B., Rokers, B., Cormack, L.K., Huk, A.C. (2008). Dissociation of velocity- and disparity-based cues to 3D motion perception. *Society for Neuroscience 2008 Annual Meeting* (Poster)
- Czuba, T.B., Rokers, B., Cormack, L.K., Huk, A.C. (2008). Mechanisms of 3D Motion: Binocular Cue Integration Across Space. *Vision Sciences Society 2008 Annual Meeting* (Poster)
- Czuba, T.B., Beer, R.D., MacLeod, D.I.A. (2007) Adaptation and Afterimages: A model of inverse multiplicative sensitivity adjustment. *Vision Sciences Society 2007 Annual Meeting* (Poster)

Fellowships & Awards

UT Center for Perceptual Systems Training Grant recipient (PostDoc)	2016, 2017
UT Perceptual Systems Summer Fellowship	2010
Vision Sciences Society Student Travel Award	2010
Lloyd A. Jeffress Memorial Fellowship	2008
UT Graduate Recruitment Fellowship	2007

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Association Memberships

Society for Neuroscience; Vision Sciences Society; Psychtoolbox-3 Contributor
Ad hoc reviewer - COSYNE Conference; The Journal of Neuroscience; Journal of Vision, Optics Express

Teaching & Mentorship

Guest Lectures: UT Austin: *Sensory Systems and the Brain (BIO 337)*, Spring 2009 & 2010). *Entry to Sensory Motor Systems (NEU 394)*, Fall 2016–2018. *Graduate Neuroscience Bootcamp*, Summer 2016–2018.

Teaching Assistant: Matlab Training Series, Div. of Statistics & Scientific Computing,
UT Austin, Fall 2008–Fall 2009.

Undergraduate Mentor: Kyle Guillet, 3D motion adaptation, Dean's Scholars Program,
UT Austin, Fall 2008–Spring 2009

Additional Training: Computational Neuroscience: Vision [summer course], Cold Spring Harbor, 2010