Tyler Manning, PhD

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EDUCATION

2019	**PhD, Neuroscience**, University of California, Davis, Davis, CA, USA
2013	**BSc, Physiology**, McGill University, Montréal, QC, Canada

EXPERIENCE

Sept 2019 - Dec 2022 | Postdoctoral Researcher, UNIVERSITY OF CALIFORNIA, BERKELEY, Berkeley, CA
> Project Focus: Identifying form and function of perceptual priors; investigating efficient codes for spatial perception
> Techniques: Psychophysics, Computational modeling, MATLAB, Psychtoolbox, Inkscape, LaTeX

Sept 2013 - June 2019 | Graduate Student Researcher, UNIVERSITY OF CALIFORNIA, DAVIS, Davis, CA
> Project Focus: Identify signal sources used for eye movement compensation in heading perception at the neural level in extrastriate cortex
> Techniques: Electrophysiology, Behavioral training, Eye tracking, Computational modeling, MATLAB, Inkscape

Sept 2010 - June 2013 | Research Assistant, MCGILL UNIVERSITY, Montreal, QC, Canada
> Project Focus: Identify cortical markers of attentional deficits in patients with chronic pain syndromes
> Techniques: Neuroimaging (fMRI), Behavioral measures

AWARDS AND FELLOWSHIPS

2021 - 2022	**Ruth L. Kirschstein NRSA Individual Postdoctoral Fellowship**, NEI Grant F32 EY032321
2022	**Vision Sciences Society Travel Award**
2019 - 2020	**Training Program in Vision Science Fellowship**, NEI Grant T32 EY007043 (PI: Levi DM)
2018	**CoSMo: Summer School in Computational Sensory-Motor Neuroscience**
2014 - 2016	**Training Program in Vision Science Fellowship**, NEI Grant T32 EY015387 (PI: Werner JS)

PUBLICATIONS

2024	**Manning TS**, Alexander E, Cumming BG, DeAngelis GC, Huang X, Cooper EA. Transformations of sensory information in the brain suggest changing definition for optimality. ⬈ DOI:10.1371/journal.pcbi.1011783
2022	**Manning TS**, Naecker BN, McLean IR, Rokers B, Pillow JW, Cooper EA. A general framework for inferring Bayesian ideal observer models from psychophysical data. ⬈ DOI:10.1523/ENEURO.0144-22.2022
2022	McLean IR, **Manning TS**, Cooper EA. Perceptual adaptation to continuous versus intermittent exposure to spatial distortions. IOVS. 63 (5):29. ⬈ DOI:10.1167/iovs.63.5.29
2019	**Manning TS**, Britten KH. Retinal stabilization reveals limited influence of extraretinal signals on heading tuning in the medial superior temporal area. J Neurosci. 39 (41) 8064-8078. ⬈ DOI:10.1523/JNEUROSCI.0388-19.2019
2017	**Manning TS**, Britten KH. Motion processing in primates. Oxford Research Encyclopedia of Neuroscience. ⬈ DOI:10.1093/acrefore/9780190264086.013.76

CONFERENCE ABSTRACTS

2022	**Manning TS**, Pillow JW, Rokers B, Cooper EA. Humans make non-ideal inferences about world motion. Poster presented at Vision Sciences Society.
2021	**Manning TS**, Alexander E, DeAngelis GC, Huang X, Cooper EA. Role of MT Disparity Tuning Biases in Figure-Ground Segregation. Poster presented at Society for Neuroscience, Chicago, IL.
2021	McLean IR, **Manning TS**, Cooper EA. Perceptual Adaptation to Continuous Versus Intermittent Spatial Distortions. Poster presented at Society for Neuroscience, Chicago, IL.
2021	**Manning TS**, McLean IR, Naecker B, Pillow JW, Rokers B, Cooper EA. Estimating perceptual priors with finite experiments. Poster presented at Virtual Vision Sciences Society.
2016	**Manning TS**, Britten KH. Retinal stabilization reveals limits of efference copy influence on heading tuning in the medial superior temporal area (MST). Poster presented at Society for Neuroscience, San Diego, CA.
2012	Lewis J, **Manning T**, Schweinhardt P. Attending to the Painful Limb in CRPS is Associated with Altered fMRI Activation and Performance is Impaired in a Somatosensory Attentional Task. Poster session presented at IASP 14th World Congress on Pain, Milan, Italy.

Invited Talks

2021	Reference frames for perceptual inference (UC Berkeley Vision Science Retreat)
2020	How well do we really quantify perceptual expectations? (UC Berkeley Vision Science Retreat)
2018	Self-motion encoding in extrastriate cortex (UC Davis Neurolunch)
2015	The role of feedforward signals from smooth pursuit in heading discrimination. (UC Davis Center for Vision Science Research Symposium)

Teaching & Mentorship

Winter 2020, Winter 2022 — Guest Lecturer, UNIVERSITY OF CALIFORNIA, DAVIS,
> Course: Topics in Vision - Visual Neuroscience / Neuropathology
> Instructor of Record: Marie E. Burns, PhD
> Responsibilities: Prepared and taught a two-hour graduate-level lecture on motion and contrast in the mammalian visual system. Major focuses were the circuits responsible for estimating motion primitives and the stimulus selectivities of neurons in higher-level motion areas and how they subserve specific behavioral or perceptual tasks.

Summer 2020 — Research Mentor, UNIVERSITY OF CALIFORNIA, BERKELEY,
> Scope: Summer T35 Project
> Responsibilities: Supervised OD student over course of an 8-week project on the use of augmented reality devices for basic science research and as visual aids for people with low vision.

Spring 2019 — Teaching Assistant, UNIVERSITY OF CALIFORNIA, DAVIS,
> Course: Neurobiology Foundations
> Instructor of Record: Hwai-Jong Cheng, PhD
> Responsibilities: Prepared and taught three one-hour discussions each week on course topics ranging from cell membrane electrophysiology to sensory processing in cortex. Held weekly office hours. Graded quizzes and course exams.

Outreach & University Service

2022	**Presenter** (BASIS: Bay Area Scientists in Schools)
2018-2019	**Admissions Committee Member** (UC Davis Neuroscience Graduate Program)
2015-2019	**Graduate Student Representative** (UC Davis Student Health Insurance Program Committee)
2016-2019	**Poster Session Coordinator** (UC Davis Neurofest Public Seminar Day)
2017	**Coordinator & Host** (UC Davis Center for Neuroscience Student Organized Seminar Series)
2014-2017	**Neuroscience Graduate Group Representative** (UC Davis Graduate Student Association)
2014-2015	**Event Coordinator** (UC Davis Neuroscience Annual Retreat and Scientific Conference)

Journal Reviews

Journal of Neuroscience   Scientific Reports

Professional Organizations

Vision Sciences Society   Society for Neuroscience