Exponent®
Engineering & Scientific Consulting

Ashley Clark, Ph.D.

Scientist | Human Factors
Philadelphia
+1-215-594-8808 | aclark@exponent.com

Professional Profile

Dr. Ashley M. Clark is a cognitive scientist who specializes in human behavioral research, focusing on high acuity vision, attention, and visually crowded environments. Her expertise in advanced head- and eye-tracking, visual psychophysics, attention, and retinal imaging techniques provides unique insights into how humans navigate a visually intricate world.

With extensive experience in both clinical and research settings, Dr. Clark excels in measuring vision characteristics and oculomotor behavior in a variety of different situations. She is proficient in human subject testing, data and statistical analysis, scientific writing and communication, experimental design, literature review and synthesis, project management, head and eye tracking, collaboration within interdisciplinary teams, and knowledge of research ethics and compliance. Ashley's expertise allows her to have valuable input on projects including driver behavior, visibility, human motor control, attention and distraction, trip-and-fall incidents, in both typical and clinical populations.

Dr. Clark earned her PhD in Brain and Cognitive Sciences at the University of Rochester where she focused on measuring and characterizing eye movements. Some key topics of her work include investigating high acuity vision, fine fixational eye movements, perception in visually crowded scenes, and the link between individual's retinal anatomy and oculomotor behavior. She also served as a Postdoctoral Researcher at the University of Rochester, where she investigated the relationship between Myopia and fixational eye movement characteristics. She has several publications in journals such as the Proceedings of the National Academy of Sciences and Current Biology focusing on her research in attention, high acuity, and eye movements. Ashley has also been involved in teaching and mentoring at both the graduate and undergraduate level. She has designed and instructed several courses on Statistics, Perception, Neuroimaging, and Lab Safety workshops.

Academic Credentials & Professional Honors

Ph.D., Brain and Cognitive Sciences, University of Rochester, 2024

M.A., Brain and Cognitive Sciences, University of Rochester, 2022

B.S., Biology, Keene State College, 2017

National Eye Institute Travel Grant, Vision Science Society, 2023

Edward Curtis Teaching Award, University of Rochester, 2021

Barnard Fellowship, University of Rochester, 2020

Academic Appointments

Lecturer, Brain and Cognitive Sciences, University of Rochester 2022-2024

Prior Experience

Post Doctoral Researcher, University of Rochester 2024

Professional Affiliations

Vision Science Society (VSS), Member

Association for Research in Vision and Ophthalmology (ARVO), Member

Optical Society of America (OPTICA), Member

Publications

Prahalad KS, Clark AM, Moon B, Roorda A, Tiruveedhula P, Harmening, W, ... Poletti M. Non-uniform signal pooling across the foveola. Current Biology 2025; 35(24):6086–6099.

Silva K, Breeland N, Clark AM, Öztekin I, Kelly RL. Effects of virtual reality use in children aged 10 to 12 years. Frontiers 2025; 6.

Clark AM, Huynh A, Poletti M. Oculomotor contributions to foveal crowding. Journal of Neuroscience 2024.

Clark AM, Intoy J, Rucci M, Poletti M. Eye drift during fixation predicts visual acuity. Proceedings of the National Academy of Sciences 2022; 119(49).

Lin YC, Intoy J, Clark AM, Rucci M, Victor JD. Cognitive influences on fixational eye movements. Current Biology 2023.

Wu RJ, Clark AM, Cox MA, Intoy J, Jolly PC, Zhao Z, Rucci M. High-resolution eye-tracking via digital imaging of Purkinje reflections. Journal of Vision 2023.

Guzhang Y, Shelchkova N, Clark AM, Poletti M. Ultra-fine resolution of pre-saccadic attention in the fovea. Current Biology 2024; 34(1):147-155.

Presentations

Clark AM, Silva K, Breeland N, Öztekin I, Kelly R. Effects of virtual reality use in children 10 to 12 years. Poster presentation, Vision Science Society Conference 2025.

Kapisthalam S, Bi H, Zhang Y, Clark AM, Thompson JL, Poletti M, Keane BP. Fixational eye movements and visual acuity in patients with schizophrenia. Talk presentation, Vision Science Society Conference 2025.

Prahalad K, Clark AM, Moon B, Roorda A, Tiruveedhula P, Harmening W, Gutnikov A, Jenks SK, Kapisthalam S, Rucci M, Rolland JP, Poletti M. Mechanisms of foveal crowding: insights from retinal imaging and retinal-contingent psychophysics. Talk presentation, Vision Science Society Conference 2025.

Clark AM, Prahalad K, Moon B, Roorda A, Tiruvee P, Harmening W, Gutnikov A, Jenks SK, Nagarajan K, Kapisthalam S, Rucci M, Rolland JP, Poletti M. The relationship between the decline in cone density and acuity assessed in normal viewing conditions across the central fovea. Poster presentation, Vision

Science Society Conference 2024.

Cox MA, Clark AM, Jolly P, Kapisthalam S, Li YH, Lin R, Mizobuchi S, Murdison TS, Neverodska A, Wang JZ, Zhao Z, Rucci M. Oculomotor control in fine shape and stereo judgements during natural head movements. Poster presentation, Vision Science Society Conference 2024.

Moon B, Clark AM, Prahalad K, Roorda A, Tiruveedhula P, Harmening W, Gutnikov A, Jenks SK, Kapisthalam S, Rucci M, Rolland JP, Poletti M. Investigating the relationship between human foveal anatomy and fixation behavior across different visual tasks. Talk presentation, Vision Science Society Conference 2024.

Lin R, Cox MA, Clark AM, Jolly P, Kapisthalam S, Li YH, Murdison TS, Neverodska A, Wang JZ, Yang B, Zhao Z, Rucci M. Control of head-eye fixation in natural tasks. Poster presentation, Vision Science Society Conference 2024.

Prahalad K, Clark AM, Moon B, Roorda A, Tiruveedhula P, Harmening W, Gutnikov A, Jenks SK, Kapisthalam S, Rucci M, Rolland JP, Poletti M. Exploring the relationship between cone density and visual crowding in the central fovea. Poster presentation, Vision Science Society Conference 2024.

Jolly P, Cox MA, Clark AM, Kapisthalam S, Li YH, Lin R, Murdison TS, Neverodska A, Wang JZ, Yang B, Zhao Z, Rucci M. Characteristics of head-eye saccades in natural tasks. Poster presentation, Vision Science Society Conference 2024.

Clark AM, Poletti M, Kapisthalam S, Zhang Y. The nonhomogeneous foveola and the need for active vision at this scale. Presentation, Vision Science Society Conference 2023.

Jenks SK, Witten JL, Moon B, Clark AM, Kapisthalam S, Harmening WM, Poletti M. Asymmetries in fine spatial vision and cone density within the foveola. Poster presentation, Vision Science Society Conference 2023.

Jolly P, Li YH, Cox MA, Clark AM, Yang B, Lin R, Zhao Z, Rucci M. Microsaccades in head-free high-acuity tasks. Poster presentation, Vision Science Society Conference 2023.

Cox MA, Clark AM, Intoy J, Moon B, Wu RJ, Victor JD, Rucci M. Systematic variation of fixational eye movements with degree of myopia. Poster presentation, Vision Science Society Conference 2023.

Lin R, Benedetto A, Intoy J, Moon B, Clark AM, Jenks SK, Kapisthalam S, Poletti M, Rucci M. Temporal sensitivity in the central fovea. Poster presentation, Vision Science Society Conference 2023.

Clark AM, Cavanaugh M, Huxlin K, Poletti M. Eccentricity driven modulations of visual crowding across the central fovea. Presentation, Vision Science Society Conference 2022.

Wu R, Zhao Z, Intoy J, Cox MA, Clark AM, Rucci M. High-resolution oculomotor measurements via a digital Dual Purkinje Image eye-tracker. Poster presentation, Vision Science Society Conference 2022.

Lin Y, Intoy J, Clark AM, Rucci M, Victor JD. Cognitive influences on ocular drifts during visual discrimination. Poster presentation, Vision Science Society Conference 2022.

Clark AM, Cavanaugh M, Huxlin K, Poletti M. Unilateral V1 damage leads to micro-offsets of monocular fixation towards the cortically blind field. Poster presentation, Center for Visual Science Winter Retreat 2022.

Clark AM, Intoy J, Poletti M. Individual differences in eye drift and high-acuity vision. Poster presentation, European Conference on Visual Perception 2021.

Clark AM, Intoy J, Poletti M. Linking individual differences in fixational eye movements and visual acuity.

Poster presentation, Vision Science Society Conference 2021.

Kapisthalam S, Zhao Z, Clark AM, Yang B, Intoy J, Cox MA, Rucci M. High-resolution eye-tracking during natural real-world interaction. Poster presentation, Vision Science Society Conference 2021.

Zhang Y, Schelchkova N, Stearns Z, Clark AM, Poletti M. Spatial resolution of pre-microsaccadic perceptual enhancements across the foveola. Poster presentation, Vision Science Society Conference 2021.

Clark AM, Intoy J, Yang H, Poletti M. Fixational eye movements modulate visual acuity and crowding in the foveola. Presentation, Brain and Cognitive Science Lunch Talk Series 2020.

Clark AM, Intoy J, Yang H, Poletti M. Visual Crowding within the Fovea. Poster presentation, Center for Visual Science Winter Retreat 2020.

Clark AM, Intoy J, Yang H, Poletti M. Foveal Crowding. Poster presentation, Neuroscience Retreat 2019.

Clark AM. Blue-light exposure's impact on visual development in adolescents. Presentation, Academic Excellence Conference 2017.

Peer Reviews

Vision Research

Visual Neuroscience

Nature Communications