Guidance of Visual Search by Visual Working Memory

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The efficient completion of most real-world tasks requires successfully finding the necessary objects in the correct sequence (e.g., the bread, then the butter, then the knife). Visual cues are insufficient to guide visual search, as the appearances of objects do not change systematically with changes in one’s goals. Thus, attention and gaze must be guided in a strategic manner based on memory and knowledge, such as memory for the appearance of the currently desired object. In this talk, I will focus on the role of visual working memory (VWM) in guiding attention during visual search. I will discuss recent work demonstrating that VWM content strongly influences where eye movements are directed within natural scenes, and I will discuss a line of research designed to understand the basic mechanism by which VWM interacts with perceptual processing to bias visual selection.

Speaker Biosketch

Andrew Hollingworth received his Ph.D. in Cognitive Science from Michigan State University in 2000. He was an Assistant Professor at Yale University until moving to The University of Iowa in 2002. Dr. Hollingworth’s research spans several domains of task-oriented vision, including scene perception, eye movements, attention, and visual memory.