Lee A. Gilroy, PhD

Associate Professor of Psychology
Psychology Program Director

Biography

Dr. Gilroy graduated magna cum laude with a Bachelor's degree in psychology from Florida Atlantic University in Davie, Florida. During this time, he also collaborated with faculty at the University of Miami, conducting research into mechanisms of visual perception. He then completed his Masters and Ph.D. degrees in psychology at the Boca Raton campus of Florida Atlantic University, concentrating on experimental, cognitive, and perceptual psychology, neuroscience, and computational neuroscience. Subsequently, he completed a postdoctoral fellowship at Vanderbilt University in Nashville, Tennessee. Here he completed additional research and training, working at the Vanderbilt Vision Research Center, sponsored by the National Institutes of Health. Following this, his career path led him into teaching, where he has held various appointments before settling at Lincoln Memorial University.

Teaching and Research Interests

Dr. Gilroy's research interests concern human visual perception, with emphasis on motion perception. The human visual system is able to transform changes in patterns of light stimulating the retina into coherent perceptions of objects moving within our environment. Understanding this seemingly effortless process, which is critical for performing even the most basic of everyday tasks, provides important insights into the functioning of the visual system, and the brain in general. His program of research explores the principles under which the visual system operates to perceive motion, and utilizes motion paradigms to investigate dynamical pattern formation, perception of 3D shape, cue combination, perceptual bistability, and conscious awareness. His main approach involves performing psychophysical experiments in concert with computational modeling to develop theoretical accounts of visual perception grounded in known neurophysiological mechanisms.

Representative Publications

Gilroy, L. A., & Hock, H.S. (2009). Simultaneity and sequence in the perception of apparent motion. ***Attention, Perception & Psychophysics***, *68*, 505-514.

Hock, H.S., Schöner, G., & Gilroy, L. A. (2009). A counterchange mechanism for the perception of motion. ***Acta Psychologica***, *132*, 1-21.

Gilroy, L. A., & Blake, R. (2005). The interaction between binocular rivalry and negative afterimages. ***Current Biology***, *15*, 1740-1744.

Gilroy, L. A., & Blake, R. (2004). Physics embedded in visual perception of three-dimensional shape from motion. ***Nature Neuroscience***, *7*, 921-922.

Gilroy, L. A., & Hock, H. S. (2004). Detection of counter-changing contrast: Second-order apparent motion without postrectification motion-energy analysis or salience mapping / feature tracking. ***Journal of Experimental Psychology: Human Perception and Performance***, *30*, 137-150.

Gilroy, L. A., & Hock, H. S. (2004). Multiplicative Nonlinearity in the Perception of Apparent Motion. ***Vision Research***, *44*, 2001-2007.

Tadin, D., Lappin, J. S., Gilroy, L. A., & Blake, R. (2003). Perceptual consequences of center-surround antagonism in visual motion processing. ***Nature***, *424*, 312-315.

Blake, R., Sobel, K, & Gilroy, L. A. (2003) Visual Motion Retards Alternations Between Conflicting Perceptual Interpretations. ***Neuron***, *39*, 869-878.