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'Curve ball' wins international illusion contest

EUREKALERT

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[St. Joseph's Hospital and Medical Center](#)

Brain researchers use baseball magic to understand the mind

Science has proven what baseball players have known for more than a hundred years, the curve ball is more powerful than the brain.

At the fifth annual international Best Visual Illusion of the Year Contest, first place went to a mind-boggling entry called "The Break of the Curve Ball." The entry submitted from a team of academics led by an American University professor, challenges the human visual system and brain to predict the movement of a spinning disk. The illusion is available at www.illusioncontest.neuralcorrelate.com.

The popular illusion contest is led by two visual neuroscientists at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center in Phoenix. Dr. Susana Martinez-Conde and Dr. Stephen Macknik launched the contest five years ago as part of their ongoing research into the human brain's relationship to visual perception.

"As scientists and medical researchers, we learn from these visual illusions every year. The knowledge that we will eventually get from studying the 'Curve Ball' illusion may be applied throughout our research and far beyond baseball," says Martinez-Conde, who heads the Laboratory of Visual Neuroscience at Barrow.

The contest results were announced this month at the annual Vision Sciences Society meeting where more than 1,000 attendees voted on the finalists. Sent from around the world, this year's entrees included illusions from artists, academics, scientists and even a Microsoft engineer.

The creators of 'The Break of the Curve Ball' illusion suggest that the perceived "break" may be caused by the batter's transition from using his central visual system to his peripheral visual system. Like a curveball, the spinning disk which is shown in the illusion appears to abruptly change direction when an observer switches from central to peripheral viewing.

Macknik who heads the Laboratory of Behavioral Neurophysiology at Barrow says the scientific explanation of the illusion may lie in the spinning motion of the ball and the eyes inclination to look at the ball's outer edges as it nears the batter.

"As the curve ball moves closer to the batter, the batter's mind is tricked because the eye begins looking at the spinning ball's peripheral which makes it only appear to be curving dramatically," suggests Macknik. "The great hitters in the game have learned to not listen to their minds when they are hitting a curve ball. They listen to their experience, not their visual system."

Martinez-Conde and Macknik have a bold and unusual scientific approach to understanding perceptual puzzles and recently have been working with several well-known Las Vegas magicians to help advance science's understanding of the relationship between vision and the brain.

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