PROJECT OBJECTIVES
- Explore how our neural mechanisms affect our perception of art.
- Curate an exhibition at the Nasher Museum of Art on color and the brain.
- Organize a symposium with leading experts across the disciplines.

METHODOLOGY
- Qualitative approaches: Analysis, discussion, and thorough examination of artworks from the Nasher.
- Quantitative approaches: Measuring the spectral output with a spectroradiometer and using digital image processing techniques to isolate areas of interest in particular works.

WHAT IS COLOR?
- In the late 17th century, Isaac Newton determined that visible light is composed of many different wavelengths that could be resolved into the component colors red, orange, yellow, green, blue, indigo, and violet.
- However, scientists and artists realized that even the same spectral composition of light can be perceived differently. Color is a perceptual phenomenon created by the eye and brain.

PROJECT SUMMARY: Our project explored the topic of color and brightness in art and the visual system using art from the Nasher Museum’s collection. We analyzed how color and luminance are treated in art and processed in the brain, using a combination of image processing analyses and spectrophotometric studies to illustrate that color is perceptual, rather than physical. The project culminated with an ongoing exhibit and a symposium at the Nasher Museum of Art, titled “Seeing Color: Art, Vision & the Brain.”

AN EXPLORATION IN COLOR PHENOMENA

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OPTICAL MIXING
When two colors, painted side-by-side, are viewed from a distance, the visual system blends the colors together. Up close, our receptive fields are able to discern the two dots independently, so the effect disappears.

SUMMARY
- Color is truly an interdisciplinary study, where empirical work created by artists helps spark scientific inquiries, and modern color theory can help guide artists.
- Published exhibition catalogue describing the art techniques and neuroscience principles to complement the Seeing Color symposium (held April 13, 2015) and exhibition (displayed in the Nasher Academic Focus Gallery through July 5, 2015).

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