31st Color and Imaging Conference Final Program and Proceedings
November 13 – 17, 2023
Paris, France

Opening Keynote: Michael J. Murdoch, Ph.D.

Monday, Nov. 15, 2023

Title: Mastering Light: Reproduction, Reality, and Augmentation

Abstract:

As we gather in the City of Light, consider that everything visible is light. We, color and imaging scientists and practitioners, are masters of light, reproducing light through imaging, creating and utilizing light in our real environment, and augmenting our illuminated reality with advanced displays and optics. Imaging, a core topic of CIC, is about the reproduction of light, which is foremost a question of tone and color reproduction, and we develop and master technologies from reflective pigments to emissive displays. Reality itself is rendered and sensed with light, and as we choose to light our environment with LED illumination, color rendition is a central question for visual quality. Reality and imaging converge in augmented reality – AR – which can insert interactive imagery into our illuminated world. In AR, this mix of real and augmented reveals important questions about adaptation and color perception. Mastering light in real and augmented reality incorporates the newest, evolving technologies, while we rely on the foundations of our predecessors: both the intuitive artists whose paintings we still admire, and the rational scientists whose findings we still trust.

Biography:

Michael J. Murdoch is an Associate Professor and Director of the Munsell Color Science Laboratory at the Rochester Institute of Technology, where he teaches topics including colorimetry, psychophysics, lighting, and imaging. He leads a research project on color appearance in augmented reality (AR) funded by a National Science Foundation CAREER Award, and additionally conducts research on displays and temporally dynamic LED lighting. A recipient of a Fulbright U.S. Scholar Award, he spent Fall 2022 in Ghent, Belgium, for collaborative research with K.U. Leuven. Before coming to RIT, Mike worked for Kodak Research and Philips Research, developing color system models and human-centered designs for solid state lighting, LCD, and OLED display systems. He holds a BS in Chemical Engineering from Cornell, MS in Computer Science from RIT, and PhD in Human-Technology Interaction from Eindhoven University of Technology in The Netherlands.

Acknowledgement:

This material is based upon work supported by the National Science Foundation under Award No. 1942755.

Conference Proceedings:

https://doi.org/10.2352/CIC.2023.31.1.1