

*Where Industry and Academia Meet*

Join us

**EI05: PERCEPTION AND COGNITION FOR IMAGING****Instructor:** Bernice Rogowitz, Visual Perspectives (US) | **Sunday January 28, 8:00 AM – 12:15 PM** | **Course Level:** Introductory/Intermediate**Fee:** Member: \$275/ Non-member: \$300 / Student: \$95 (\*prices for all increase by \$50 after January 8, 2018)

Imaging, visualization, and computer graphics provide visual representations of data in order to communicate, provide insight, and enhance problem solving. The human observer actively processes these visual representations using perceptual and cognitive mechanisms that have evolved over millions of years. The goal of this tutorial is to provide an introduction to these processing mechanisms, and to show how this knowledge can guide the decisions we make about how to represent data visually, how we visually represent patterns and relationships in data, and how we can use human pattern recognition to extract features in the data.

**Benefits:**

- Understand basic principles of spatial, temporal, and color processing by the human visual system.
- Explore basic cognitive processes, including visual attention and semantics.
- Develop skills in applying knowledge about human perception and cognition to interactive visualization and computer graphics applications.

**Intended Audience:** Imaging scientists, engineers, application developers, and domain experts using imaging systems in their analysis of financial, medical, or other data. Students interested in understanding imaging systems from the perspective of the human user and anyone interested in how the visual world is processed by our eye-brain system.

**Instructor:** **Bernice Rogowitz** is a multidisciplinary scientist, working at the intersection of human perception, imaging, and visualization. She received her BS in experimental psychology from Brandeis University, a PhD in vision science from Columbia University, and was a post-doctoral Fellow in the Laboratory for Psychophysics at Harvard University. For many years, she was a scientist and research manager at the IBM T.J. Watson Research Center and is currently active in research and teaching through her consulting company, Visual Perspectives. Her work includes fundamental research in human color and pattern perception, novel perceptual approaches for visual data analysis and image semantics, and human-centric methods to enhance visual problem solving in medical, financial, and scientific applications. As the founder and co-chair of the IS&T Conference on Human Vision and Electronic Imaging, she is a leader in defining the research agenda for human-computer interaction in imaging, driving technology innovation through research in human perception, cognition, and aesthetics. Rogowitz is a Fellow of IS&T and SPIE, a Senior Member of IEEE, and a 2015 IS&T Senior Member.

**SYMPOSIUM PLENARY TALKS**

**Monday:** Overview of Modern Machine Learning and Deep Neural Networks – Impact on Imaging and the Field of Computer Vision, **Greg Corrado, co-founder of Google Brain and Principal Scientist at Google**

**Tuesday:** Fast, Automated 3D Modeling of Buildings and Other GPS Denied Environments, **Avideh Zahkor, Qualcomm Chair & Professor at UC Berkeley**

**Wednesday:** Ubiquitous, Consumer AR Systems to Supplant Smartphones, **Ronald T. Azuma, Intel Labs Researcher and Augmented Reality Pioneer**

**SYMPOSIUM HIGHLIGHTS**

- 18 conferences featuring 30 keynote talks by world reknown experts
- 3D Theatre
- Tours of Stanford University Labs
- Industry Exhibition
- Meet the Future: Showcase of Student and Young Professional Research
- Demonstration Session
- Poster Session
- Welcome Reception
- Women in Electronic Imaging Breakfast
- Human Vision in Electronic Imaging 30<sup>th</sup> Year Banquet

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