



College of Engineering
Department of
Mechanical & Industrial Engineering

The Robert W. Courter Seminar Series

3:00-4:00pm, Friday, October 15th, 2021

ZOOM: <https://lsu.zoom.us/meeting/register/tJApd-mhqzssHNAtbx8xlujiXfCf28JLgcJB>

Design Tools for Material Appearance

by **Holly Rushmeier***

Yale University



The design of material appearance for both virtual and physical design remains a challenging problem. There aren't straightforward intuitive techniques as there are in geometric design where shapes can be sketched or assembled from geometric primitives. In this talk I will present a series of contributions to developing intuitive appearance design tools. This includes studies of material appearance perception which form the basis of the development of perceptual axes for reflectance distribution design. I will also present novel interfaces for design including hybrid slider/image navigation and augmented reality interfaces. I will discuss the unique problems involved in designing appearance for objects to be physically manufactured rather than simply displayed in virtual environments. Finally, I will show how exemplars of spatially varying materials can be inverted to produce procedural models.

* Dr. Holly Rushmeier is the John C. Malone professor of Computer Science at Yale University. She received the BS (1977), MS (1986), and PhD (1988) in Mechanical Engineering from Cornell University. Since receiving the PhD she has held positions at Georgia Tech, NIST and IBM TJ Watson Research. Her area of interest is computer graphics. Her current research focuses on material appearance modeling, applications of perception to computer graphics, and applications of computer graphics to cultural heritage preservation. Her past projects include a project to create a digital model of Michelangelo's Florence Pieta and models of Egyptian cultural artifacts in a joint project between IBM and the Government of Egypt. She is coauthor of the text "Digital Modeling of Material Appearance." Dr. Rushmeier has served as the co-chair of the ACM Publications Board, the Editor-in-Chief of ACM Transactions on Graphics and as co-Editor-in-Chief of Computer Graphics Forum. She is an ACM Fellow, a Fellow of the Eurographics Association and recipient of the 2013 ACM SIGGRAPH Computer Graphics Achievement Award.