Abstract: Multiscale design and physical layer compression may enable digital cameras to reach diffraction and photon-limited information capacity. This talk considers these limits and describes strategies for reaching diffraction limited resolution with >10 gigapixels and implementing compressive temporal, focal and exposure coding to quantum information limits. I will also comment on careers in optics, the optical systems community and opportunities to get involved in the Optical Society of America.

Biography: David J. Brady is the Michael J. Fitzpatrick Professor of Photonics at Duke University, where he leads the Duke Imaging and Spectroscopy Program. Professor Brady and his group have developed multiscale lens systems, which enable streaming gigapixel cameras and compressive tomography, which enables snapshot 3D and multispectral imaging. He is the author of “Optical Imaging and Spectroscopy,” (Wiley-OSA, 2009) and was the 2013 winner of the SPIE Dennis Gabor Award. He is a Fellow of OSA, SPIE and IEEE.