Abstract:
Optical coatings often determine the operational limits of high power laser systems. Quantified by the laser-induced damage threshold (LIDT), this limit is determined by laser-material interactions that lead energy deposition beyond some critical density, causing optical deterioration, melting, or ablation. These same processes are also relevant for the broader topic of laser processing of materials. These laser-material interactions depend on the material type, laser wavelength, laser pulse duration, and other parameters. I will present our current understanding of laser-induced damage in dielectric materials, using examples from our own work, and touch upon ongoing activities.

Bio:
Luke Emmert is a research assistant professor in the department of physics and astronomy at UNM. He received his Ph.D. in Materials Science and Engineering from Cornell University where he specialized in the deposition and characterization of oxide thin films. Since coming to UNM in the last decade he has studied the response of these materials under intense laser illumination.

Contact: Doris Williams dorisw@chtm.unm.edu Sponsored by UNM OSE, ECE, P&A, CHTM, IEEE, SPIE & OSA