Ultrafast Pump-Probe Studies of the Light-Induced MIT and Recovery of Niobium Dioxide Thin Films MELISSA BEEBE, College of William Mary, J. MICHAEL KLOPF, Helmholtz-Zentrum Dresden-Rossendorf, SALINPORN KITTIWATANAKUL, JIWEI LU, STUART A. WOLF, University of Virginia, R. ALEJANDRA LUKASZEW, College of William Mary — Niobium dioxide (NbO$_2$) is a highly correlated binary oxide that, like vanadium dioxide (VO$_2$), exhibits a first-order insulator-to-metal transition (IMT) at a material-dependent critical temperature, accompanied by a structural transformation from monoclinic to rutile. The nature of the IMT in VO$_2$ has been discussed at length, while fewer studies have been carried out on NbO$_2$. Previous studies show that the IMT can also be optically induced in VO$_2$ on a sub-picosecond timescale; here, we present the first ultrafast pump-probe studies showing this optically-induced transition in NbO$_2$ thin films and compare these results to similar ones carried out on VO$_2$ thin films.