Light Transport in Disordered Media with PT-symmetry\footnote{This research was supported by an AFOSR No. FA 9550-10-1-0433 grant and by a NSF ECCS-1128571 grant.} SAMUEL KALISH, ZIN LIN, TSAMPIKOS KOTTOS, Wesleyan University — The localization properties of randomly layered optical media with \textit{PT}-symmetric refraction index are studied both theoretically and numerically using the transfer-matrix method. The transmission coefficient decays exponentially as a function of the system size, with a rate $\xi(\gamma)^{-1} = \xi_0(\gamma)^{-1} + \xi_0^g(0)^{-1}$, where $\xi(\gamma)$ is the localization length of the equivalent passive disordered system and $\xi(0)$ is the attenuation/amplification length of the corresponding perfect system with combined gain/loss refraction index profile. While transmission processes are reciprocal to left and right incident waves, one-sided reflection is found.