Chiral RKKY interaction in Pr$_2$Ir$_2$O$_7$ REBECCA FLINT, T. SENTHIL, Massachusetts Institute of Technology — Pr$_2$Ir$_2$O$_7$ experimentally realizes a chiral spin liquid selected out of a degenerate quantum spin-ice manifold. We propose that such a chiral state is selected by an analogue of the magnetic RKKY effect, whereby the chiral fluctuations of conducting Ir electrons close to a Mott transition promote correlations between the chirality of the local Pr moments. Pr$_2$Ir$_2$O$_7$ provides the perfect setting for such a chiral RKKY effect, as its spin ice manifold naturally contains chiral states, and chiral fluctuations in the Ir are enhanced by the proximity to the metal insulator transition between Pr$_2$Ir$_2$O$_7$ and Nd$_2$Ir$_2$O$_7$. We calculate the chiral susceptibility within a simplified model, showing that this chiral RKKY coupling can be ferro-chiral and estimating the magnitude.