Thermal conductivity of layered La$_{1.2}$Sr$_{1.8}$Mn$_2$O$_7$ FILIP RONNING, Los Alamos National Lab, NAMJUNG HUR, NOBUYUKI KURITA, J.D. THOMPSON, ROMAN MOVSHOVICH — La$_{1.2}$Sr$_{1.8}$Mn$_2$O$_7$ has many similarities to underdoped cuprates: highly anisotropic transport, strong disorder in a charge reservoir layer, and even claims for Fermi arcs. Thus we measured the thermal and charge transport of this system to examine whether the Wiedemann-Franz law is violated in La$_{1.2}$Sr$_{1.8}$Mn$_2$O$_7$ as it is in several cuprate systems in the T=0 limit. One significant difference to cuprates, however, is that the low temperature state of La$_{1.2}$Sr$_{1.8}$Mn$_2$O$_7$ is a ferromagnet. A consequence of this is that magnons in addition to phonons and electrons can transport heat. By using an applied magnetic field to gap out the magnon spectrum, we have also found clear evidence for the transport of 2D ferromagnetic magnons.