1176-20-346 **Rose Morris-Wright*** (rose@math.ucla.edu), UCLA Math Sciences, 520 Portola Plaza, Los Angeles, CA 90095. *Pattern Preserving Quasi-isometries in Lamplighter groups.* Preliminary report.

(Joint work with Tullia Dymarz, Beibei Liu, and Natasa Macura) Lamplighter groups have a Cayley graph which can be constructed as a subset of a product of two trees. This construction produces a natural partition of the boundary of the Cayley graph into upper and lower boundary components with vertical geodesics between the two boundaries corresponding to infinite cyclic subgroups and their cosets. We define pattern preserving quasi-isometries to be quasi-isometries of the Cayley graph that act bijectively on these vertical geodesics. A similar construction can be made for the SOL and Baumslag Solitar group, and in these cases results by Schwartz(1996) and Taback(1998) show that pattern preserving quasi-isometries have strong rigidity properties. In this talk, I will compare the lamplighter case to these two known cases, and explain how pattern preserving quasi-isometries in the lamplighter group are in some senses similar to the SOL and Baumslag Solitar cases, and is some senses much less rigid. (Received January 25, 2022)