DIASTEREOSELECTIVE ADDITIONS TO ALLENYL ALDEHYDES DIRECTED BY AN ORGANO-MANGANESE ETA-2 AUXILIARY. Animesh Roy and Salvatore D. Lepore. Department of Chemistry, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431.

We have recently reported regio- and diastereoselective aldol additions of allenyl ketones made possible only through the use of a methylcyclopentadienyl manganese dicarbonyl (MMD) auxiliary. This inexpensive and chromatography-stable auxiliary is eta2-complexed to the alpha-beta double bond of planar chiral allene systems and is removed under mild oxidative conditions. We have recently discovered that the MMD auxiliary also serves as an excellent directing group for Grignard additions to allenyl aldehydes leading to synthetically valuable allenyl alcohols in high diastereoselectivity. By comparison, organomagnesium addition reactions to non-complexed allenyl aldehydes and ketones give virtually no stereoselectivity. In this presentation, we detail our examination of this reaction mechanism as well as describe substrate generality studies.