Abstract: The continuous effort to present a more sustainable outlook for future generations has led to a renaissance in the use of earth-abundant metals in homogenous catalysis. Their natural abundance, low-toxicity, and ready availability have been strong incentives to replace their less environmentally friendly noble metal counterparts. In addition, the smaller ionic radii and typically high-spin electronic structure of earth-abundant metals have resulted in unique reactivity that can be otherwise hard to realize with their heavier congeners. Nonetheless, there are only a few examples of earth-abundant metal catalyst that can achieve noble-metal like reactivity. In this lecture, we will review earth-abundant metal ligand design and demonstrate how the addition of one carbon atom can make all the difference between a mediocre and an excellent catalyst. We will demonstrate that our recently developed PC(NHC)P iron, cobalt, and manganese pincer complexes are excellent catalysts in a variety of transformations. We will explore the effect of oxidation and spin-state on the reactivity of these complexes in alkene isomerization and discuss the various aspects of C-H bond activation, acceptorless dehydrogenation and hydrogen isotope exchange reactions with these metal complexes.