

Open clusters are considered building blocks of galactic disks and are thought to be reliable tracers of the overall disk radial metallicity gradient. It has been shown that open clusters reflect a significant decrease in metallicity with increasing distance from the Galactic center; this distribution has often been modeled with a two-component linear fit, with a transition, R_{trans} , occurring between 10 and 16 kpc. Recent work from the APOGEE collaboration has significantly increased (> 150) the sample size of open clusters with robust measurements of chemistry across the Galactic disk. However, the susceptibility of this fit to the effects of sampling bias has yet to be explored and could have large implications for the inferences drawn from the radial metallicity gradient. In this talk, I will discuss how Milky Way-mass galaxy simulation can be leveraged to explore the radial metallicity gradient using open clusters. I will discuss my work identifying open clusters in the Latte simulations and highlight properties like inter and intra-cluster chemical dispersion. In addition, I will discuss how sampling of open clusters affects the traced gradient from the simulations near the present day.