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New Measurements of the EMC Effect and Short Range Correlations at JLab Hall C at 11 GeV[1] KAYLA CRAYCRAFT, University of Tennessee at Knoxville — The nuclear dependence of the Deep Inelastic Scattering (DIS) cross section (known as the EMC effect) has shown conclusively that the distribution of quarks in a nucleus is modified when compared to the deuteron. On the other hand, Short Range Correlations, which arise from hard interactions between nucleons inside the nucleus give rise to high momentum tails in nucleon momentum distributions. The observation that the size of the EMC effect is correlated with the number of SRC NN pairs in a nucleus suggests a possible origin of the EMC effect. While the observed relationship is compelling, more investigation using adding additional nuclei and improving the precision on existing measurements is necessary. Jefferson Lab experiments E12-06-105 and E12-10-008 aim to do just that, making measurements of electron scattering cross section ratios in the DIS regime and at $x > 1$ for a large body of nuclei. These experiments will attempt to disentangle whether the EMC-SRC correlation is driven only by the size/atomic number of the nucleus, or if it also depends on the neutron to proton ratio.

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