

Abstract for an Invited Paper  
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**The nuclear wavefunction at high momenta and connections to the EMC effect**

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The EMC Effect, the fact that the per-nucleon deep-inelastic lepton scattering cross sections of nuclei are smaller than deuterium for  $0.3 < x < 0.7$ , is not well understood. The shape of the nucleon momentum distribution in nuclei for  $p > 0.25$  GeV/c is the same for all nuclei. Two-nucleon Short Range Correlations (SRC) are responsible for these high momentum nucleons, which are also at higher local density. This talk will show that the magnitude of the EMC effect is directly proportional to the probability of SRC for nuclei from deuterium to gold. It will present our current knowledge of SRC, including their momentum and isospin distributions, and how this can help us understand the origins of the EMC effect. It will also use the observed EMC-SRC relationship to extract the ratio of the deuteron to the free  $pn$  pair cross sections and  $F_2^n/F_2^p$ , the ratio of the free neutron to free proton structure functions.