DNP20-2020-000712 ET

> Abstract for an Invited Paper for the DNP20 Meeting of the American Physical Society

Recent insight into the structure of short-range correlations and the EMC effect.¹ JOHN ARRINGTON, Argonne National Laboratory

Jefferson Lab has had great success using high-energy probes to significantly advance our understanding of energetic, high-density components of nuclear structure. Studies of high-momentum nucleons associated with short-range correlations (SRCs) have mapped out the strength and isospin dependence of these energetic components in nuclei, providing new insight into their connection to nuclear structure and the N-N interaction. Studies of nuclear parton distributions and the EMC effect have also shown unexpected behavior in light nuclei, and raised questions about a correlation or common origin for the EMC effect and short-range correlations. It also suggests a mechanism for a flavor dependence in the EMC effect for non-isoscalar nuclei, which could have significant impact on a range of other experiments at Jefferson Lab and in high-energy scattering and collider experiments around the world. I will highlight key insights gained from the 6 GeV program at Jefferson Lab, discuss the potential impact on measurements of neutrino and electron scattering from nuclei and A-A, and briefly present future experiments aimed at further illuminating these exotic components of nuclear structure.

¹Supported by the U.S. DOE under contract DE-AC02-06CH11357