Hisham Al-Bataineh

B.S. Physics – Yarmouk University – Jordan.
M.S. Theoretical Particle Physics – Aligarh Muslim University – India
M.S. Experimental Nuclear Physics – New Mexico State University – NM, 2005
Ph.D. Experimental Nuclear Physics – New Mexico State University, 2009

Prior to joining TAMUK in June 2011 as director for research and graduate studies at the Frank H Dotterweich College of Engineering where he started teaching nuclear/mechanical engineering classes, Dr. Albataineh had been involved in different research groups. He did the first measurement of a transverse single spin asymmetry of open heavy flavor at the PHENIX experiment using polarized proton-proton collisions at center-of-mass energy 200 GeV at Brookhaven National Laboratory, Long Island, NY. As a member of the sub-atomic group at Los Alamos National Laboratory, he worked on designing and building pixel planes for the silicon vertex detector for the PHENIX experiment; this work took place at Fermi National Laboratory, Patavia, IL. For his post-doc, Dr. Albataineh worked for the Laboratoire de Physique Corpusculaire (Universite Blaise Pascal, France) and Thomas Jefferson Laboratory on the second generation of the Deep Virtual Compton Scattering (DVCS) experiment.

Dr. Albataineh joined the physics program at Texas A&M University–Kingsville (TAMUK) in Fall 2014. Currently, he is working with other collaborators on the Deeply Virtual Compton Scattering experiment at Thomas Jefferson Laboratory in Newport News, Virginia. The physics topics of interest are aligned with an important goal of JLab to provide a detailed, there-dimensional picture of the nucleon in terms of its quark and gluon constituents, and to understand how this complex structure leads to its well-known properties such as mass, spin and magnetic moment. A promising theoretical framework of this task is provided by general parton distributions (GPDs), which are hybrids of the usual form factors and parton distributions, but in addition include correlations between states of different longitudinal and transverse momenta. The simplest process that allow extraction of GPDs from data and provide the cornerstone for their exploration are Deeply Virtual Compton Scattering (DVCS).

Selected Papers:

"Rosenbluth separation of the π0 electrodroduction cross section," M. Defurne et al. (The Jefferson Lab Hall A Collaboration) e-Print arXiv: 1608.01003v1 [hep-ex] 2 august 2016

"Probing the Repulsive Core of the Nucleon-Nucleon Interaction via the $^4He(e,e'pN)$ Triple-Coincidence Reaction," I. Korover *et al*. (The Jefferson Lab Hall A Collaboration) Phys. Rev. Lett. 113, 022501 (2014)

"Measurement of the Neutron Radius of ^{208}Pb through Parity Violation in Electron Scattering," S. Abrahamyan, *et al*. (PREX Collaboration) PRL 108, 112502 (2012).

"New Measurement of the Transverse Beam Asymmetry for Elastic Electron Scattering from Selected Nuclei," S. Abrahamyan *et al.* (HAPPEX and PREX Collaborations) PRL 109, 192501 (2012).

"Scaling properties of fractional momentum loss of high-pT hadrons in nucleus-nucleus collisions at $\sqrt{s_{NN}}$ from 62.4 GeV to 2.76 TeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. C 93, 024911 (2016)

"Transverse energy production and charged-particle multiplicity at midrapidity in various systems from $\sqrt{s_{NN}}$ = 7.7 to 200 GeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. C 93, 024901 (2016)

"Measurement of higher cumulants of net-charge multiplicity distributions in Au+Au collisions at $\sqrt{s_{NN}}$ = 7.7−200 GeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. C 93, 011901 (2016)

"Centrality-dependent modification of jet-production rates in deuteron-gold collisions at $\sqrt{s_{NN}}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. Lett. 116, 122301 (2016)

"φ meson production in *d*+Au collisions at sqrt(*s_NN)*=200GeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. C 92, 044909 (2015)

"Measurements of elliptic and triangular flow in high-multiplicity 3He+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration) Phys. Rev. Lett. 115, 142301 (2015)