

David M. Riser

RESEARCH ASSISTANT · GRADUATE STUDENT

2011 Genevieve Trail, Williamsburg VA, 23185

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Research Interests

Nucleon Structure

1-Dimensional Structure Functions in DIS, Transverse Momentum Distributions from SIDIS, Generalized Parton Distribution functions from DVCS

Education

University of Connecticut

MASTERS OF SCIENCE, PHYSICS

- General Exams & Coursework Completed August 2015
- Relevant Coursework - Electrodynamics, Relativistic Quantum Mechanics

Storrs, Connecticut

August 2015

Delaware State University

BACHELORS OF SCIENCE, PHYSICS

- Relevant Coursework - Undergraduate core physics classes, Scientific programming, Optical electronics

Dover, Delaware

May 2013

Skills

Programming and Software

C/C++, FORTRAN, JAVA, PERL, tcsh, \LaTeX , Mathematica

Operating Systems

Windows, Macintosh OS, Linux (Ubuntu, RHEL7, Mint)

Hardware

Basic electronics & circuitry, Frequency stabilization systems

Languages

English (Fluent), Spanish (Intermediate-Advanced)

Experience

Thomas Jefferson National Accelerator Facility & University of Connecticut (Dr. Kyungseon Joo)

Newport News, VA

RESEARCH ASSISTANT - EXPERIMENTAL NUCLEAR PHYSICS

June 2015 - Present

- Monte Carlo Simulations of CLAS12 background, optimization of beamline shielding
- GEMC Detector factory development → implementing detectors into geometry database
- Analysis of SIDIS process in E1F run, construction of absolute cross section

University of Connecticut (Dr. Phillip Gould)

Storrs, CT

SUMMER RESEARCH ASSISTANT - EXPERIMENTAL ATOMIC PHYSICS

June 2014 - September 2014

- Construction of high voltage power supply
- Construction of photodetector circuits

Delaware State University (Dr. Gour Pati)

Dover, DE

UNDERGRADUATE RESEARCH ASSISTANT - EXPERIMENTAL ATOMIC PHYSICS

January 2012 - August 2013

- Construction & optimization of rubidium vapor cell based frequency standard using a pulsed Raman-Ramsey technique
- Utilization of various electronic components including infrared diode lasers, oscilloscopes, photodetectors, lock-in amplifiers (SRS), various other electronics used in frequency locking/stabilization circuits

Delaware State University (Dr. Essaid Zerrad)

Dover, DE

UNDERGRADUATE RESEARCH ASSISTANT - THEORETICAL & COMPUTATIONAL ATOMIC PHYSICS

August 2011 - January 2012

- Numerical solutions to the integro-differential Schrodinger equation which arises in low energy electron scattering from Hydrogen and Helium atoms
- Extended Singular Value Decomposition (SVD) technique to improve convergence with fewer iterations
- Used FORTRAN 77 with IMSL package

Honors & Awards

Spring
2015

Teaching Excellence Award, Office of Provost

University of
Connecticut

Presentation

CLAS Collaboration Meeting, Deep Processes Working Group

Jefferson Lab, Newport News, VA

CLAS12 BEAMLINE BACKGROUND STUDIES WITH GEMC

Spring 2016

- Shared results from a Monte Carlo study aimed at increasing operating luminosity for CLAS12 by reducing background coming from beamline elements.

Emerging Researchers National Conference

Washington DC

OPTICAL SQUEEZING BASED ON A 4 WAVE MIXING TECHNIQUE

Spring 2013

- Presented details of an experimental setup under construction to produce “squeezed light”