
Jason Bane

18 Morrison Ave. • Newport News, VA 23601
(931) 239-0611 • jbane@jlab.org

Experience

- **University of Tennessee, Department of Physics and Astronomy** **Knoxville, TN,**
Graduate Research Assistant *May 2014 – Present*
 - Designed and constructed front end electronics for an electron spectrometer.
 - Created module layouts and cable maps for efficient reuse of products.
 - Used Oscilloscopes to test signals, debug logic modules, and map inconsistent signals.
 - Maintained and refurbished individual detector components of a spectrometer including checking the quality of Photo Multiplier Tubes and plastic scintillators.
 - Worked in DOE-regulated environment within range of high magnetic field and extreme pressure areas.
 - Calibrated detectors and used online analysis tools in Java to control the quality of data during an experiment.
 - Performed analysis on a large set of data involving multiple nuclear targets using Python, C++ , ROOT, and fortran.
 - **University of Tennessee, Department of Physics and Astronomy** **Knoxville, TN,**
Graduate Teaching Assistant *August 2012 – May 2015*
 - Designed and implemented observational and planetarium based astronomy labs.
 - Educated students on the use of refracting telescopes and equatorial mounts.
 - Instructed students in laboratory exercises to help conceptualize physics topics.
 - Tutored students for homework assistance and test prep.
 - **Clay County Tennessee Education Department** **Celina, TN**
Secondary Educator & Football Coach *August 2010 – May 2012*
 - Created lesson plans that included interactive, creative thinking, and discussion driven curriculum for a diverse body of geometry students.
 - Constructed lessons that used hands-on lab activities, demonstrations, and interactive computer lessons to instruct high school Juniors and Seniors in algebra-based physics.
 - Used discussion-based problem-solving lessons to help remedial math students to improve their algebra, geometry and trigonometry skills for post-secondary education.
 - Provided an equitable and inclusive atmosphere for diverse students.
 - Math and reading focused tutoring.
-

Education

- **University of Tennessee** **Knoxville, TN**
Ph.D. in Nuclear Physics *August 2012 – Planned December 2019*
Thesis: The EMC Effect in $A=3$ Nuclei *Advisor: Nadia Fomin*
 - **University of Tennessee** **Knoxville, TN**
Secondary Education Certification in Math and Science *August 2009 – May 2010*
 - **University of Tennessee** **Knoxville, TN**
Bachelor of Science, Physics & Minor in Education *August 2004 – May 2009*
-

Core Technical Skills

Hardware: Detector maintenance and wiring, front end electronics design and implementation, logical trigger design and testing
Languages: C, C++, L^AT_EX, Python, shell script, SQL
Monte Carlo Simulation Packages
Example scripts located at <https://github.com/jbane11/examples>
Software: Microsoft Office, Libre Office, Textstudio, vim, atom
Operating Systems: Linux(Red Hat), Windows, MacOS

Publications

- H. Dai, [et al. including **J. Bane**], "First Measurement of the $\text{Ar}(e,e')\text{X}$ Cross Section at Jefferson Lab," Phys. Rev. C 99, 054608 May 2019
 - R. Cruz-Torres, [et al. including **J. Bane**], "Comparing proton momentum distributions in $A=3$ nuclei via ^3He and $^3\text{H}(e,e'\text{p})$ measurements," in preparation, (2019)
 - S. N. Santiesteban, S. Alsalmi, D. Meekins, **J. Bane**, et al., "Density Changes in Low Pressure Gas Targets for Electron Scattering Experiments" NIM A 940, 2019
 - H. Dai, [et al. including **J. Bane**], "First Measurement of the $\text{Ti}(e,e')\text{X}$ Cross Section at Jefferson Lab," Phys. Rev. C 98, 014617 July 2018
 - P V. Pandey, [et al. including **J. Bane**], "Probing electron-argon scattering for liquid-argon based neutrino-oscillation program," preprint arXiv:1711.01671
-

Honors

- Jefferson Science Associates graduate fellowship award (2018)
 - Chancellor's honors for extraordinary professional promise (2016)
 - DOE Office of Science Graduate Student Research program award (2015)
 - Dean's List 2009 Academic Year (2010)
-

Conference Presentations

- "EMC in A=3 from MARATHON," 2nd Workshop on Quantitative Challenges in SRC and EMC Research, MIT, Cambridge MA, March 2019
- "Ratios in A=3 nuclei from MARATHON," American Physical Society's Division of Nuclear Physics' yearly meeting, HA, October 2018
- "Measurement of the spectral function of Argon and Titanium through the(e,e'p) reaction," American Physical Society's Division of Nuclear Physics' yearly meeting, HA, October 2018
- "Status of the MARATHON experiment." American Physical Society's Division of Nuclear Physics' yearly meeting, Pittsburgh PA, October 2017
- "Searching for the Origin of the EMC effect." American Physical Society's Division of Nuclear Physics' yearly meeting, Sante Fe NM, October 2016

Poster Presentations

- "The impetus in the EMC effect, a EMC simulation." Gordon Research Conferences, Holderness, NH. August 2018
- "Searching for the Origin of the EMC effect." SURA Board of Trustees Meeting, Newport News, VA. April 2018

References

Nadia Fomin, Professor
Department of Physics and Astronomy
University of Tennessee at Knoxville
(865) 974-1509, nfomin@utk.edu

Cynthia Keppel, Hall A and C Leader
Jefferson Lab Accelerator Facility
(757) 584-7580, keppel@jlab.edu

Douglas Higinbotham, Staff Scientist
Jefferson Lab Accelerator Facility
(757) 584-7851, doug@jlab.edu

Evan McClellan, Post-doctoral Fellow
Jefferson Lab Accelerator Facility
randallm@jlab.org

Interests

Football, coaching, programming, boating, traveling,