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January 3, 2020

Dear NIA Hiring Manager,

I write to apply for the Postdoctoral Research Scholar position in numerical analysis. I successfully defended my dissertation "The EMC Effect in A=3 Nuclei" under the direction of Nadia Fomin, at the University of Tennessee for a PhD. in nuclear physics. My dissertation research brought me to Thomas Jefferson National Laboratory in Newport News, VA. My time at the lab has been devoted to honing my skills and knowledge in the complete process of being an experimental physicist. I experienced constructing spectrometers, refurbishing detectors, building electrical systems for data acquisition, analyzing large data sets, and collaborating with a diverse community while working with three electron scattering experimental groups.

My research at Jefferson Lab has allowed me to work on many aspects of an experiment. I collaborated with a diverse group of scientists to construct, maintain, and operate three electron spectrometers to extract the electron-nucleus inclusive cross section. A large portion of my research has consisted of extracting the experimental measured cross section from electron scattering data which required data-intensive analysis. Using this data, I measured the performance of the individual detectors by organizing the data and identifying the source of any outlying signals. I use quantitative and qualitative analysis techniques to remove background events. I used Monte Carlo simulations to study the acceptance probability of the spectrometer. I modeled data using mathematical and analytical models to make comparisons between simulation and detector response. I used HPC to efficiently analyze millions of events to determine the precision of detector responses. These experiences in data analysis have allowed me to learn many coding techniques and languages like Python, C++, FORTRAN, ROOT, and Java. All of these analysis tasks have required me to think critical about the task at hand, and I have had to adapt my problem solving skills to deal with solving algorithms, studying uncertainties, and debugging my code and the code of others.

The knowledge and skills I have gained working at Jefferson Lab would make me a great fit to work as a numerical analyst. My mixture of problem solving and software skills will allow me to quickly step into the roles needed to develop and implement CFD models. I strive to learn more and have a strong desire to share what I have learned with others.

Thank you for your time and attention,
Jason Bane