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Hello,

I am a Ph.D. student at the University of Tennessee with plans to defend late this fall and have been completing my research at the Thomas Jefferson National Accelerator Facility (Jefferson Lab) in Newport News, VA. Completing my research here at the Lab for the last 5 years has allowed me to gain an immense amount of experience with detector systems, data acquisition systems, and data analysis. My time at the lab has been devoted to honing my skills and knowledge in the complete process of being an experimental physicist. Working with the three electron scattering experiments has allowed me to experience constructing spectrometers, refurbishing detectors, building electrical systems for data acquisition, working in DOE-regulated environment, working within range of extreme conditions, and data analysis including Monte Carlo simulations and the processing of large data sets.

My work at Jefferson Lab has allowed me to work on many aspects of an experiment. I was able to work on the refurbishment and maintenance of a large acceptance electron spectrometer for a tritium experiment. Preparing this spectrometer gave me the opportunity to gain experience in the design and construction of the front end electronics. This included designing and testing of a logic trigger built with analog and digital electronics. I refurbished individual detectors, by testing and replacing photomultiplier tubes and scintillating plastics. I also worked on the assembly and testing of the data acquisition system. This work at Jefferson Lab gave me experience with particle scattering systems but also working within the range of extreme conditions, like radiation areas, areas of high magnetic field, and extreme vacuum pressures. I also prepared part of the analysis software and completed analysis for three different experiments by helping maintain the online analysis software and data decoding scripts. I calibrated parts of the detectors, focusing on the beam position monitors and analog to digital converter signals from the Cherenkov and calorimeters. As part of my Ph.D., I have been analyzing electron scattering data. Part of my analysis task has been to compare data results to simulated data. In order to simulate data, I have had to work closely with cross-section models and Monte Carlo simulation packages. Completing this analysis has granted me the ability to learn different coding languages like C++, Fortran, ROOT, and python.

The knowledge and skills I have gained working at Jefferson Lab would make me a great fit to work as a scientific associate at Oak Ridge Nation Laboratory. My skills working with spectrometers and data analysis would allow me to support the staff and users of the SNS and HFIR.

Thank you for your time and attention,
Jason Bane