

Carrie Elliott

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EDUCATION

Bachelor of Science in Physics

University of Tennessee, Knoxville, TN

Concentration: Academic Physics

Minors: Astrophysics, Mathematics

GPA: 3.7 (Physics), 3.3 (overall)

Dec. 2017

TEST SCORES

Verbal Reasoning: 159/170

General GRE Quantitative Reasoning: 160/170

Analytical Writing 5.0/6.0

SKILLS

Languages and Software: L^AT_EX, C/C++, HTML, Fortran, Perl, Python; GIT, Matlab, CSS, Microsoft Office, Google Suite, LabVIEW, virtual machines/VMWare, ROOT, and EDM interface development.

Research and programming: Secure shell (SSH) programming, shell programming, data analysis, data modeling and visualization, graphical user interface development, use of open source tools, High Performance Computing, use of large data (GALEX libraries, MATLAB, and HDF5), version control and collaboration with Git, EPICS, and accelerator operations support experience. Preferred OS: Linux — Preferred programming language: Python

PUBLICATIONS

“First Measurement of the EMC Effect in ^{10}B and ^{11}B (Preprint)” A. Karki, D. Biswas, F.A. Gonzalez, .. **C. Elliott**, et. al. arXiv:2207.03850 (nucl-exp)

WORK EXPERIENCE

Control Room Accelerator Specialist

April 2021 - present

Oak Ridge National Lab / Spallation Neutron Source, Oak Ridge, TN

- Safely operate the SNS 1 GeV superconducting linear proton accelerator and associated subsystems to enable the NScD neutron scattering science program.
 - Engage in personal projects: Automated Beam Loss Tuner project (2022). Create, modify, and maintain Operations software used to run the accelerator.
 - Participate in accelerator operations support activities, including troubleshooting, performing installation, maintenance and upgrades to accelerator subsystems, and supporting beam development activities.
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Certified Mathematics Teacher**September 2019 - December 2020***Richard Yoakley School, Knoxville, TN*

- Led courses of Algebra I, Algebra II, Geometry, and Bridge Math.
- Reshaped structure of the classroom and created an open, interactive curriculum.

Research Specialist II**June 2018 - June 2019***Department of Physics and Astronomy, University of Tennessee, Knoxville, TN*

- Studied the EMC effect in different targets using deep inelastic scattering methods, under Dr. Nadia Fomin.
- Served as a Target Operator in Hall C, assisting the Beam Operator for Jefferson Lab's 12 GeV Continuous Electron Beam Accelerator Facility (CEBAF). Managed alarms, cryogenic levels, and adjusted targets safely on-site during beamtime in Hall C in Spring 2019.
- Analyzed the Spring 2019 runs using ROOT; Optimized the analysis GUI used on shift (all coded in C++).

Department Tutor**Fall 2015 - Spring 2019***Department of Physics and Astronomy, University of Tennessee, Knoxville, TN*

- Tutored students in the tutorial center on introductory mechanics, optics, and electricity and magnetism.

Student Researcher**Summer 2015 - Spring 2017***Department of Physics and Astronomy, University of Tennessee, Knoxville, TN*

- Studied nucleosynthesis of elements during core-collapse supernovae with the CHIMERA team at Oak Ridge National Lab, under Dr. Raphael Hix. Awarded a Summer Research Fellowship from the UTK Department of Physics and Astronomy in Summer 2015 to support this work.
- Rendered visualizations of nuclear astrophysical theories and interpolated density values throughout the star using nearest-neighbor algorithms to accurately describe the process of nucleosynthesis in core-collapse supernovae in 2D.
- Wrote code in parallel in Matlab, and made significant progress in cutting run time. Created images and videos of results from open-source visualization software, SPLASH.

Astronomy Teaching Assistant/ Lab Assistant**Fall 2014 - Fall 2018***Department of Physics and Astronomy, University of Tennessee, Knoxville, TN*

- Proctored and graded exams for AST 151, AST 152.
- Calibrated, operated, troubleshooted telescopes and CCD cameras.

LEADERSHIP

Learning and Development Committee Chair**Fall 2021 - present***Women in Neutron Sciences, Neutron Sciences Directorate, Oak Ridge National Lab*

- Position held: Committee Chair
- Elected project lead for the Learning and Development project in WiNS. Responsible for organizing opportunities to encourage curiosity and discussion on various topics through presentations for employees across the directorate.

Physics Journal Club**Fall 2016 - Fall 2017***University of Tennessee, Knoxville, TN*

- Position held: Co-Director
- Founding member. Organized and led meetings discussing fundamental and/or current physics research papers and articles over various topics. Sought to improve research skills of undergraduate students through exposure to more research papers.