Brian G. Richards

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Summary

- A diligent worker at developing pipelines for data acquisition, storage, and analysis.
- Skilled at creating informative visualizations to present data.
- Skilled at communicating complex topics using both technical and non-technical language.
- Developed R package to solve Physics problems (available at https://github.com/bgrich/starkr).

Skills

Programming Languages: R, LabVIEW, Markdown, LaTeX, Git
R Package Experience: ggplot2, dplyr, tidyr, readr, devtools, rmarkdown, tibble
Computer Programs: RStudio, Microsoft Word, Microsoft Excel, Microsoft Powerpoint
Familiarity with: SQL, Python, Java

Education

Ph.D., Physics, The University of Virginia, Charlottesville, VA 2010—2017
B.S., Physics, The College of William and Mary, Williamsburg, VA 2006—2010

Experience

Graduate Research Assistant, Ultrafast Laser and Atomic Physics Lab 2011—2017
Department of Physics, The University of Virginia, Charlottesville, VA
- Developed data analysis pipelines in R for two studies of dipole-dipole interactions in cold Rydberg gases.
- Developed R package modeling the Stark effect in Rubidium.

Graduate Teaching Assistant, The University of Virginia, Charlottesville, VA 2010—2014
- Led discussion sections and laboratory sections, and evaluated student assignments for introductory and mid-level physics courses.

Summer Undergraduate Research Fellow, Pomeroy Lab 2010
National Institute of Science and Technology, Gaithersburg, MD
- Studied methods for precision resistance measurements
- Assisted in the fabrication and assembly of lab equipment

Undergraduate Researcher, Aubin lab 2009—2010
Department of Physics, The College of William and Mary, Williamsburg, VA
- Studied methods to implement an optical frequency comb using an actively mode-locked diode laser

Summer Undergraduate Research Fellow, Windover Lab 2009
National Institute of Science and Technology, Gaithersburg, MD
- Used R, Python, and genetic algorithms to analyze X-ray reflectometry data.

Publications

- **B. G. Richards** and R. R. Jones, *Phys. Rev. A* 93, 042505 (2016).
- T. Zhou, **B. G. Richards**, and R. R. Jones, *Phys. Rev. A* 93, 033407 (2016).

Presentations and Talks

- **B. G. Richards,** "Dipole-dipole Resonance Line Shapes in a Cold Rydberg Gas." SESAPS, Charlottesville, VA, November 11, 2016

- **B. G. Richards** and R. R. Jones, “Lineshapes of Dipole-Dipole Resonances in a Cold Rydberg Gas.” DAMOP, Columbus, OH, June 10, 2015
- T. Zhou, **B. G. Richards**, and R. R. Jones, “Absence of Collective Decay in a Cold Rydberg Gas.” DAMOP, Columbus, OH, June 10, 2015

Affiliations

American Physical Society	2015—Present
Optical Society of America	2011—Present