

# M. Ryan Clary

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Energy Research Facility  
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Objective: Research oriented employment in the fields of applied physics or engineering.

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Education: **University of Maryland, College Park**  
Doctor of Philosophy in Plasma Physics, exp. 2008  
**University of Maryland, College Park**  
Master of Science Degree in Physics, 2006.  
*Absolute  $H_\alpha$  Measurement System for the Maryland Centrifugal eXperiment*  
**Utah Valley State College**  
Bachelor of Science Degree in Physics, *Summa Cum Laude*, 2004

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Research: **Absolute  $H_\alpha$  Measurement System for MCX**  
University of Maryland, College Park, September, 2004–present.  
Designed, constructed, and tested an array of Hydrogen Balmer-alpha emission line detectors for the Maryland Centrifugal eXperiment. Analyzed  $H_\alpha$  emission data to calculate neutral particle characteristics including charge exchange times and plasma flow damping.  
**Research Experience for Undergraduates**  
Brigham Young University, June, 2003-Aug., 2003.  
Wrote collision simulation code in Fortran 77 for implementation in ultra-cold plasma simulations.

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Employment: **Graduate Research Assistant**, University of Maryland, College Park; September, 2004–present.  
Investigating neutral particle characteristics primarily through  $H_\alpha$  emission in the context of a rotating-plasma confinement experiment. Currently developing a multi-chord array of existing  $H_\alpha$  emission detectors to investigate radial neutral particle profiles.  
**Research Assistant**, Brigham Young University; June, 2003–April, 2004  
Wrote Fortran 77 code to simulate collision effects in dilute gas including a computational study of Monte Carlo and Particle-in-Cell methods. Wrote Fortran 77 code for including collision effects in ultra-cold plasma simulations.

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Publications: *Monte Carlo Simulations of Wave Damping in a Dilute Gas (abstract)*, Clary, R., & Spencer, R. American Physical Society Four Corners Sectional Conference, 2003.

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Skills: Proficient in **Fortran**, **Matlab**, **Mathematica**, **Maple**, and **L<sup>A</sup>T<sub>E</sub>X** programming languages.