

## Clark R. Casarella

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### SUMMARY OF QUALIFICATIONS

- Analytical skills: collected and analysed data using statistical analysis, utilized and designed algorithms for data analysis and interpretation over a broad range of programming languages.
- Technical skills: implemented nuclear radiation detection arrays, trained in nuclear physics accelerator operations, and worked in handling radioactive materials.
- Communication skills: numerous conference appearances to brief international science community on analysis results.

### EDUCATION

*University of Notre Dame, Notre Dame, IN*

**Ph.D. Physics, Nuclear Physics**

August 2016

*University of Notre Dame, Notre Dame, IN*

**M.S. Physics**

December 2014

*University of North Georgia, Dahlonega, GA*

**B.S. Physics**

May 2011

Cum Laude

### TECHNOLOGICAL EXPERIENCE

- Linux & Windows operating systems, L<sup>A</sup>T<sub>E</sub>X typesetting
- Mathematica, GNUPlot, Python3, FORTRAN77

### PROFESSIONAL EXPERIENCE

**University of Notre Dame, Notre Dame, IN** Graduate Student Researcher, 2011 - 2016

- Deployed radiation detection equipment for nuclear physics applications across multiple operating facilities.
- Trained in the proper handling of radioactive materials.
- Preparation of focused summaries related to nuclear detection and presented results at national scientific conferences.
- Implemented schedules and techniques to ensure efficient data analysis across multiple experiments.

**University of Notre Dame, Notre Dame, IN** Laboratory Teaching Assistant, 2011 - 2014

- Supervised students' progress in the basic skills of nuclear research and experimental methods.
- Instructed students in various data gathering techniques and analysis methods for modern physics experiments.
- Reinforced good science practices, such as documented note-taking and clear scientific writing.

**LEADERSHIP & OUTREACH SERVICE****Graduate Physics Student Assistant - Joint Institute for Nuclear Astrophysics PAN (Physics of Atomic Nuclei) Program***University of Notre Dame 2012-2013*

- Directed High School students on the basics of nuclear instrumentation and data acquisition.
- Assisted individual & group tutoring throughout duration of week-long science program.

**Private Tutor for Radiation Dosimetrist***University of Notre Dame 2014*

- Oversaw intermediate nuclear physics materials and concepts for Medical Dosimetry Certification Board exam.
- Implemented teaching techniques and skills needed for Radiation Dosimetry.

**SELECTED AWARDS**

- Outstanding Senior Physics Graduate, (University of North Georgia 2011)  
*Recognized for exceptional performance in coursework and independent research.*

**SELECTED TALKS AND POSTERS**

- “Lifetimes Measurements in  $^{162}\text{Dy}$ ,” 2015 Annual Fall Meeting of the Division of Nuclear Physics, Santa Fe, NM (October 2015).
- “Lifetimes of Levels in  $^{160}\text{Gd}$ ,” 2013 Fall Meeting of the Division of Nuclear Physics, Newport News, VA (October 2013).
- “Measurement of the  $^{187}\text{Re}(n,2n\gamma)^{186m}\text{Re}$  Cross-Section,” 2010 Fall Meeting of the Division of Nuclear Physics, Santa Fe, NM (November 2010).

**SELECTED PUBLICATIONS**

- “Collectivity of  $0^+$  states in  $^{160}\text{Gd}$ ,” Phys.Rev. C 91, 054317 (2015).
- “ $(\alpha,\gamma)$  Cross Section Measurements In The Region of Light  $p$  Nuclei,” Phys.Rev. C 92, 045805 (2015).
- “Scintillation Efficiency Measurement of Na Recoils in NaI(Tl) Below the DAMA/LIBRA Energy Threshold,” Phys.Rev. C 91, 015807 (2015).
- “First Application of the  $\gamma$ -summing Technique in Inverse Kinematics,” Nucl.Instruments and Methods A 757, 62-66 (2014).
- “Measurement of the  $\text{Ni-58}(\alpha,\gamma)\text{Zn-62}$  Reaction and its Astrophysical Impact,” Phys.Rev. C 89, 054611 (2014).