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CASEY A. ANDERSON

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Executive Summary

Nuclear engineer, physicist, and programmer with over six years of experience involving scientific computing, critical thinking, and analytical problem solving. Leader in student organizations, strong collaborator in diverse work environments, demonstrated history delivering products, and effective at communicating and publishing results.

"Put in a quote right here from someone, and its okay if it goes over a few lines thats okay"
Quote Person

Professional Experience

Los Alamos National Laboratory

Los Alamos, New Mexico

Graduate Research Assistant/Post Master's	<i>NEN-5, Systems Design & Analysis</i> ¹	2016-Present
Graduate Research Assistant/Post Master's	<i>ISR-1, Space Science & Applications</i> ²	2011-2012
Summer Intern	<i>W-13, Advanced Engineering Analysis</i> ³	2010
	<i>XCP-3, Monte Carlo Codes</i> ⁴	

- Implemented new features in MCNP6 through writing code, developing benchmarks, publishing reports, and presenting the new features at various conferences [Pubs: ??,??,??,??]
- Gained significant knowledge and experience in the design, modeling, simulation, and analysis of a variety of radiation detectors for the **Nuclear Detection Figure of Merit (NDFOM)** project²
- Transitioned NDFOM from version 2.0 to 3.0 by modularizing and refactoring the backend Python code and through developing a cleaner, more intuitive HTML user interface for the customer²
- Managed the deployed server of NDFOM, including SQL database²
- Assisted in the development, testing, validation, and verification of the combined radiation transport and finite-element analysis multi-physics capability for the **Engineering Campaign-7 Nuclear Survivability** project³
- Developed unstructured mesh human phantoms for health physics applications with MCNP6 [Pub: ??]³
- Acquired DOE Q-level security clearance and Sigmas 1-10,11,12,13,15 and performed analysis on the W-88 system³
- Utilized the high performance computing (HPC) systems and utilities for advanced physics simulations and analysis^{1,2,3,4}
- Created a software visualization package for finite element geometries in MCNP simulations⁴

Medical College of Wisconsin

Milwaukee, Wisconsin

Graduate Research Assistant	<i>Department of Biophysics</i>	2012-2016 ¹
Biophysics Representative, IT Liason	<i>Graduate Student Council</i>	2014-2016 ²

- Conducted background research, provided the preliminary results, and co-authored a successful **R21** National Institute of Health (NIH) grant, funding my graduate studies¹
- Patented a segmented reconstruction technique for artifact reduction in Magnetic Resonance Imaging [Pat: ??]¹
- Collaborated with a diverse group of professionals, including medical doctors and imaging technologists, to perform clinical research, meet deliverables, and submit the findings to various international conferences [Pubs: ??,??,??]¹
- Interacted with clinical patients and subjects to collect patient data for clinical studies
- Provided technical leadership and guidance on Information Technology (IT) needs to all MCW Graduate students as the system Liason²

University of Wisconsin - Madison

Madison, Wisconsin

Student Research Assistant	<i>Department of Medical Physics</i>	2008-2011
Chapter President	<i>American Nuclear Society (ANS)</i>	2010-2011

- Assisted in research, modeling, and analysis of brachytherapy seed quality assurance methods
- Managed the American Nuclear Society organizational duties, including activities such as recruiting guest speakers to present at meetings, organizing conference travel, and arranging
- Mentored and taught a variety of students through volunteering in public outreach events, such as Science Olympiad, middle and high school science fairs, and teaching local Boy Scout chapters to achieve their merit badges

Areas of Expertise

Physics/Engineering

- Nuclear Engineering
- Fourier Analysis
- Monte Carlo Methods
- Signal Processing
- Magnetic Resonance Imaging
- Regularization Methods
- Radiation Detectors
- Multi-physics coupling
- Computer Aided Engineering
- Finite Element Analysis

Software

- MCNP
- Abaqus/CAE
- Linux
- Matplotlib
- Matlab
- MacOS
- Windows
- Microsoft Office
- VisIt
- RELAP

Programming

- Python
- Bash
- \LaTeX
- Unit Testing
- Matlab
- Mercurial
- Git
- C/C++
- Fortran
- Java

Other Skills

- Technical Writing
- Presentations
- Leadership
- Version Control
- File I/O
- Scripting
- Data Visualization
- Debugging
- Validation & Verification
- HPC Server Management

Key (Skill Level)

- Expert ● Intermediate ○ Beginner

Funding Sources

- General Electric / National Football League (GE/NFL) concussion study grant
- Department of Homeland Security (DHS) Department of Nuclear Detection Office (DND)
- DHS Nuclear Detection Figure-of-Merit (NDFOM)
- Engineering Campaign 7, Nuclear Survivability

Awards & Honors

SPOT Award	Los Alamos National Laboratory	August, 2017
<i>Magna Cum Laude</i> Abstract	ISMRRM	2016

Affiliations

- American Nuclear Society (ANS)
- American Association of Physicists in Medicine (AAPM)
- International Society of Magnetic Resonance in Medicine (ISMRRM)

Education

M. Sc	Biophysics	<i>Medical College of Wisconsin</i>	3.80/4.0	2016
M. Sc	Nuclear Engineering & Engineering Physics	<i>University of Wisconsin - Madison</i>	3.44/4.0	2011
B. Sc	Nuclear Engineering	<i>University of Wisconsin - Madison</i>	3.24/4.0	2011

Thesis: ["Quantitative Susceptibility Mapping: Exploratory Development and Initiation of Processing Pipelines"](#)

Classes & Trainings

- I "MCNP6 Intermediate Workshop", (Los Alamos New Mexico). May, 2016
- II "CPR Certification Training", (Milwaukee, Wisconsin). May, 2015
- III "General Electric MR Programming Workshop", (Madison, Wisconsin). Oct, 2014
- IV "Dale Carnegie Training", (Los Alamos, New Mexico). August, 2011
- V "Introduction to Abaqus", (Minneapolis, Minnesota). June, 2011
- VI "Introduction to Python Programming", (Los Alamos, New Mexico). July, 2010
- VII "MCNP5 Beginner Workshop", (Los Alamos, New Mexico). May, 2010