Matthew **Halstead, Ph.D.**

Personal Website: https://matthalstead2.netlify.com

Active Interim **Top-Secret Clearance**

Motivated, *energetic* nuclear engineer and radiation effects in electronics physicist with a passion for team-driven, empathetic leadership. Experienced with experimental- and simulation-based scientific research and strong interpersonal skills. Lifelong desire to continue learning and expand *worldview*.

Key Tenets:

Integrity: I endeavor to do the right thing, all the time, no matter who is watching.
Reliability and Dedication: I put forth maximum effort toward any project or job – all day, every day – and do so with enthusiasm and perseverance.
Innovation: I strive to push boundaries in order to provide new solutions.
Respectfulness: I strive to treat team members with the utmost respect in all interpersonal relationships; disagreement is okay, as it can lead to innovative thinking, but contempt is not.

Work Experience:

Naval Surface Warfare Center (NSWC) Crane: 300 Hwy 361
08/2014 - Present Crane, IN 47522
Radiation Sciences Engineer
Series: 0855 Pay Plan: ND Grade: 04 Supervisor: Matthew Bedel

Research Engineer:

- As Principal Investigator and lead researcher, executed two Internal Research & Development (IR&D) projects for $350K+.
- Developed collaboration partnership teams made up of internal and external world-class personnel. Organizations include Sandia National Laboratory, Vanderbilt University, MIT, The Aerospace Corporation, and many others.
- Collected, analyzed, and presented findings at 3 unique technical conferences and numerous Technical Interchange Meetings over multiple years.

Lead, Microelectronics Radiation Survivability Support to Missile Defense Agency:

- Principal Subject Matter Expert (SME) leading team of 5 exceptional individuals that provided radiation survivability support to the Missile Defense Agency (MDA) Redesigned Kill Vehicle (RKV) program.
- Proposed and executed plan to obtain local classified (SIPR) terminal access by interfacing with division funding, base physical security, and base communications security personnel.

Study Manager, Radiation Test Infrastructure:

- Coordinated directed inquiry of projected radiation test requirements compared against national radiation test infrastructure capacity.
- Interfaced directly with strategic missile system programs (Navy, Air Force, and MDA), as well as national radiation test facilities.
- Direct result of study was initiation of multimillion dollar construction project aiming to support future radiation testing of strategic electronic components at NSWC Crane.

Chair, Strategic Systems Hardware Working Group (SSHWG):

- Provided interface between NSWC Crane and strategic customers' S&T/R&D programs.
- Standardized WG process to review, score, and stratify yearly IR&D proposals.

Lead, Modeling & Simulation for Radiation Sciences:

- Revitalized high-performance scientific computing capability for NSWC Crane Flight Division, which included classified and unclassified, Linux-based Rocks (CentOS) cluster assets. Expanded user base every year.
- Coordinated team of scientific, security, and system administration personnel to build unclassified system from 3 disconnected machines with <40 cores to an HPC cluster with>500 cores.

Responsible Technical Authority, Radiation Survivability SME:

- Provided subject-matter expertise to assess new and emerging technologies as candidates for radiation-hardened applications.
- Wrote technical requirements and derived contract documentation for $20M/year Basic Ordering Agreement with industrial partner for the sustainment of critical manufacturing capability in support of OSD Title III critical infrastructure investment to ensure national ability to procure rad-hard microelectronics for defense applications.

Air Force Institute of Technology: 2950 Hobson Way
09/2009 – 08/2014 Wright-Patterson AFB, OH 45433
Graduate Student Research Advisor: Dr. James Petrosky

Strategic Systems Programs Office: 2521 South Clark Street
09/2007 – 06/2009 Arlington, VA 22202
Engineer, Reentry Branch (SP2804) Supervisor: Hal Skoog

Reentry Engineer, Advanced Reentry Systems Branch:

- Attended training courses to learn about Trident II D5 strategic missile packages, sub-systems, and overall system.
- Contributed to numerous interdisciplinary teams of Navy, prime contractor, and subcontractor personnel.

Education:

Ph.D. Nuclear Engineering, Awarded September 2014
U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, OH United States

- Dissertation: Investigating time and spectral dependence in neutron radiation environments for. semiconductor damage studies
- GPA: 3.9 of a maximum 4.0 (72 Quarter Hours)
- Relevant Coursework, Licenses and Certifications: Solid State Physics, Quantum Mechanics, Electricity & Magnetism, Computational Techniques in Radiation Transport, Electromagnetic Pulse Effects

Master's Nuclear Engineering, Awarded March 2011
U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, OH United States

- Thesis: Characterization of the Neutron Spectrum at the Indiana University NREP Neutron Source
- GPA: 3.7 of a maximum 4.0 (36 Quarter Hours)
- Relevant Coursework, Licenses and Certifications: Physics of nuclear explosions, Prompt & Delayed Nuclear Weapon Effects, Radiation Effects on Electronics (lab), Nuclear Fuel Cycle

Dual Bachelor's in Nuclear & Mechanical Engineering – Awarded May 2007
The Pennsylvania State University, State College, PA United States

- GPA: 3.4 of a maximum 4.0 (182 Semester Hours)
- Minor: Military Sciences
- Relevant Coursework, Licenses and Certifications: Nuclear reactor design, health physics, Air Force ROTC leadership training

Job Related Training:

- Leading from Within, Crane Division University – 2016
- DAWIA S&T Manager Level III Certification – Nov 2016
- Developing Emerging Leaders for Tomorrow's Challenges – 2015
- DAWIA Engineering Level II Certification – Nov 2014

Technical Competencies:

- Data analysis tools: MATLAB, Excel, R, Python
- Radiation Transport: MCNP, GEANT, SRIM
- OS: Windows, Linux (Ubuntu, CentOS, RHEL), Mac
- Programming languages: Python, Fortran, C++, Java, HTML

References Available Upon Request