# Matthew **Halstead, Ph.D.**

Personal Website: https://matthalstead.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, 812-854-2042

*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.

Strategic Systems Programs Office: 2521 South Clark Street
09/2007 – 06/2009 Arlington, VA 22202

*Engineer, Reentry Branch (SP2804)* Supervisor: Hal Skoog, 202-433-5872
Series: 0801, Pay Plan: YD, Grade: 01 (NSPS-Scientific & Engineer Career Group)

*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