

518-312-2263

JAMES OLSON
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SENIOR ENGINEER; AREAS OF EXPERTISE

- Applied Engineering Physics
- Heat Transfer and Fluid Flow
- Applied Cognitive Psychology
- Power Generation Technology Development
- Classroom Instruction
- Curriculum Development
- Engineering Design Process
- Change Management

ENGINEERING EDUCATION

Graduate Student, RPI, Troy, NY 2019-Present

Doctor of Engineering Student, Nuclear Science and Engineering

- Research: Transition of empirical education research into academically rigorous framework
- TA: Aero structures, Thermal Hydraulics Lab, Capstone x2, LINAC Lab

Adjunct Professor: Rensselaer Polytechnic Institute, Troy NY 2019

O.T. Swanson Multi-Disciplinary Design Lab, Capstone

- Project Engineer for 2 Multidisciplinary Capstone Design Projects

Visiting Research Scholar: Rensselaer Polytechnic Institute, Troy NY 2016-2018

GE Volunteer

- 4x project based experimental Heat Transfer curricula to simulate Industry Engineering conditions.

Senior Engineer, GE Power: Schenectady, NY 2008-2019

Team Leader, Engineering Talent Development

- Mentor Program Manager for Early Career Engineers: Developed a system to enable Early Career Engineers to gain leadership experience through volunteer projects. 100% success rate in early promotion of participants relative to their peers.
- Veteran Intern Manager: Developed and managed novel program for engineering student veterans.

Volunteer, Pre-College STEM Education:

- Developed and taught "Introduction to Nuclear Fundamentals" curriculum to 4th/5th students at Shenendehowa Central School District, Clifton Park, NY.
- Developed and taught "Wind Turbine Design Competition" for 9th grade Schenectady High School students.

US Navy Nuclear Propulsion Program (NNPP):

Nuclear Chemistry and Radiological Controls School Technical Leader 2003-2007

- Managed complete revision of Nuclear Chemistry curriculum including certifying staff, incorporating e-Learning methodologies, and implementing \$250,000+ installation of state-of-the-art equipment.
- Responsible for recruiting, training, and certifying ~1,500 US Navy and DOE students annually.

Engineering Laboratory Division Supervisor, *USS ANNAPOLIS*, Groton, CT 1999-2003

- Managed Initial Certification for Laboratory Technicians and Continuing Education Training Program for the Engineering Department of an operational submarine in Chemistry Controls, Radiation Detection and Protection, Dosimetry Monitoring, and Nuclear Emergency Response.

Classroom Instructor, US NAVY, West Milton, NY 1996-1999

- Responsible for Nuclear Power Plant Operational Certification of ~750 military personnel annually. Certification activities include successful completion of specified power plant operations, participation in seminars, and level of knowledge written and oral examinations.

TECHNOLOGY DEVELOPMENT & OPERATIONS

Consultant: Halfmoon, NY 2018-Present

New York State Office of Victim Services

- Developing communication system for Brain Injury Victim that lost vision, voice, fine motor skills, etc.

- Delivered wheelchair with modified wheel locks to be operated by the foot of a TBI Patient at no-incremental cost to client revenue streams and without invalidating insurance / medical certifications

GE Power: Advanced Technology Operations, Schenectady, NY 2007-2019

- **New Product & Services Retrofit Technology Development:** Advanced Technology Design Engineer specializing in developing proprietary solutions for power generation customers including budget proposals and controllership, FMEAs for proposed technology, and procedure development for technology operations. Highlights include 20% reduction in First-Of-A-Kind cost low pressure steam turbine, 80% product cycle reduction, and numerous proprietary technologies and patents.
- **Automated Engineering Design Process Team Member:** Conceptualized, created, validated, and maintained physics-based algorithms that optimized thrust and bearing designs simultaneously to realize a 95% design cycle reduction.
- **Modernized hydrodynamic bearing design process** by researching legacy process. Proposed improvements reduced parasitic losses by up to 75% (1 MW) for new and retrofit units.

US Navy: 1995-2007

- **Technical Leader of Chemistry and Radiological Controls Division.** Managed upgrade of reactor chemistry controls to include state-of-the-art chemistry and radiation detection equipment.
- **Radiation Controls Planner:** Planned, supervised, and performed complex radiological maintenance tasks including reactor coolant purification media replacement, reactor coolant pump replacement, and upgrading two reactor power neutron detectors from analog to digital microprocessor.
- **Mechanical Systems Specialist.** Licensed operator of nuclear power plant mechanical systems and accessories. Routine review of system parameters for trend analysis, troubleshooting and identify out of specification conditions and correct as necessary. Tracked and performed system maintenance as required, including required documentation.

EDUCATION

In Progress: D. Eng., Nuclear Science and Engineering, 2019-Present: RPI, Troy, NY

NX School (National School on Neutron and X-Ray Scattering) 2020 Oak Ridge National Lab, TN

Master of Engineering, Engineering Management, 2013 Clarkson, Schenectady, NY

GE Leadership Development Course, 2011 GE Crotonville Leadership Institute, Crotonville, NY

Six Sigma | Green Belt Lean 2011 GE, Schenectady, NY (#293151-352384-204048685)

Bachelor of Science (BS), Nuclear Engineering & Engineering Physics, 2006 RPI, Troy, NY

How to Plan, Develop, and Evaluate Technical Training 2005 Saratoga Spring, NY

Classroom Training Specialist 1998, West Milton, NY

Navy Nuclear Propulsion Program 1996, US NAVY

APPOINTMENTS, AWARDS, & PUBLICATIONS

"A Practical Method for Improving Diversity, Equity and Inclusion in Nuclear Science" 2022 American Society for Engineering Education Conference, Submitted 2021

"Validation of an Empirically Derived Cognitive Model for Science, Technology, Engineering, and Mathematics Education" Applied Cognitive Psychology, Submitted 2021

"An Economic Cost Assessment of HALEU Fuels for Small Modular Reactors" Science and Technology of Nuclear Installations, Published 2020

Adjunct Professor, Fall 2019, RPI, Troy, NY

Visiting Research Scholar, 2016-2019 RPI, Troy, NY

The Schenectady Foundation STEM Advisory Board, Founding Member 2012-2015 Schenectady, NY

Japan Patent JP2011117600A: System for Controlling Thrust Affecting Shaft: GE, Schenectady, NY

US Patent 8286430: Steam Turbine Two Flow Low Pressure Configuration: GE, Schenectady, NY

US Patent 8926273: Steam Turbine Single Shell Casing Configuration: GE, Schenectady, NY

Founders Award of Excellence, 2006, RPI, Troy, NY