

CURRICULUM VITAE

JOHN F. WADE, PH.D., P.E.

6923 Maynardville Pike #362, Knoxville, TN 37918 | 865-456-1997
john.f.wade.pe@gmail.com | <https://www.linkedin.com/in/johnfwadepe>
ORCID: 0000-0002-6493-5070

EDUCATION

University of Tennessee, Knoxville
Doctor of Philosophy, Electrical Engineering – Fire Protection **2020**
Dissertation: “Arc Flash in Single-Phase Electrical Systems”

University of Tennessee, Knoxville
Fire Protection Engineering Certificate **2018**
Enclosure Fire Dynamics, Smoke/Fire Transport, Forensic Engineering

University of Alabama, Huntsville
Master of Science, Electrical Engineering **1992**
Area of Concentration: Advanced and Non-Linear Control System Theory

Tennessee Tech University
Bachelor of Science, Electrical Engineering **1984**
Areas of Concentration: Control System Theory, Digital Electronics
Minor: Mathematics
Honors: Cum Laude, In Cursu Honorum

AWARDS

NASA Mission Manager’s Flight Commendation – ARES 1-X 2009
NASA Innovator of the Year, Outstanding Performance – ARES Virtual Mission 2009
Software of the Year – International Procedure Viewer MSFC Integration Lead 2007
Letter of Commendation – International Partner Training 2007

LICENSES AND CERTIFICATIONS

Licensed Professional Electrical Engineer – Tennessee, Alabama
Certified Fire Protection Specialist
ARRL Approved Volunteer Examiner

TEACHING EXPERIENCE

University of Tennessee – Knoxville
Instructor **2021-2022**
Member of teaching team for ECE-548 – Fundamentals of Radio and Satellite Communications. Developed and presented on-line modules.
ORNL teaching team coordinator for ECE-463 – Data Center Design.
Contributed to syllabus, developed course modules, led in-person instruction.

BWX Technologies – Nuclear Fuel Services

Instructor 2018-2020

Developed Electrical Safety and Arc Flash Safety syllabuses and course materials, conducted training, and administered tests.

Intern Mentor 2016-2020

Coached and directed engineering interns in all aspects of skill and knowledge development.

George C. Marshall Space Flight Center

Instructor 2006-2007

Developed International Procedure Viewer Procedure Authoring Tool syllabus, wrote and maintained training manual, conducted virtual classroom training for international partners, led on-site classes at multiple US NASA facilities.

Instructor 2005-2006

Developed International Procedure Viewer User syllabus and instruction materials, conducted classroom training for MSFC personnel.

RESEARCH EXPERIENCE

University of Tennessee, Knoxville

Doctoral Dissertation 2017-2020

Research of history and work to date on arc flash, arc blast, including effects on the human body. Experimental investigation of arc flash in a single-phase vertical-conductors-in-a-box configuration with measurements of radiated heat, bus voltage and current, and blast pressure wave intensity. Analysis of findings and correlation to past work.

BWX Technologies – Clinch River, LLC

Protection of Diffusion Pumps in High Vacuum Systems 2014

Research on diffusion pump systems and characteristics with emphasis on developing a mechanism for preventing back-flow contamination during unplanned vacuum loss. Prepared prototype concepts and testing methodology.

RELATED EXPERIENCE

Oak Ridge National Laboratory

Senior Electrical Engineer - contractor 2021 – present

Electrical analysis and design in support of Lab Modernization Division. Contractor and Craft point of contact for new construction and remodel/renovation projects, including cross-discipline coordination.

Project-related instrumentation and controls design and commissioning support.

BWX Technologies – Nuclear Fuel Services

Group Lead**2018 – 2020**

Supervised and coached junior electrical engineering staff, interns, designer/drafters, and EE consultants. Provided PE oversight required for professional registration of EE Engineers-In-Training. Coordinated with local Authority Having Jurisdiction to perform safety and compliance oversight per NFPA 70E, IEEE 1584, and NFS procedures.

Advisory Engineer**2015 – 2021**

Supported capital improvements, modernization, production and plant operations with electrical and I & C analysis and design including remediating legacy issues, equipment specification for plant power distribution systems, configuration management and documentation, design reviews, and oversight of new installations. Participated in facility development planning.

Developed and maintained EasyPower models of plant electrical distribution for breaker coordination and arc flash studies.

BWX Technologies – Clinch River, LLC

Advisory Engineer**2009 – 2015**

Primary contact for rotor balancing instrumentation and controls, and electrical engineering for all aspects of power distribution, thermal, vacuum, pneumatic, fluid flow, pumps, and pressure. Prepared design improvements and re-engineering yielding over \$1.1M in projected savings and cost avoidance.

Instituted operations and infrastructure improvements such as electronic procedures system, electronic console logging and anomaly reporting, operator training plan and coursework, and team data repository.

Teledyne Brown Engineering, Huntsville, AL

ARES 1 Flight Operations Liaison**2008 - 2010**

Performed flight operations coordination and integration support and interface between First Stage Project and higher-level teams, including Vehicle Systems Management, Test Verification Requirements, and Integrated Mission Timeline Planning.

iPV Project Group Lead**2006 – 2008**

Led and participated in implementation of Space Station International Procedure Viewer (iPV) electronic procedure creation / viewing system at MSFC. Coordinated multiple teams across various NASA centers, trained authors and users, and managed schedule and reporting. Wrote authoring tool user manual used at all NASA centers and by international partners.

Developed and provided computer-based and classroom instruction for authors and procedure viewer users, both local and remote.

Space Station Payload Operations Control – Operations Controller **2003 - 2006**

Led three other cadre positions plus international science payload teams to ensure successful implementation of the payload operations timeline. Coordinated and performed payload research, document preparation, and safety reviews.

Directly supported on-orbit operations in the ground control center, including real-time communication with science partners and astronauts.

Created and deployed web-based Payload Anomaly Report system used by MSFC and payload science teams

Space Station Payload Operations Control – Payload Rack Officer **2000 - 2003**

Monitored and controlled real-time resources to Space Station U.S. Laboratory equipment racks and science experiments. Supported on-orbit science payload research from the ground control center by tracking and controlling power, thermal, and communication resources.

Created operations documentation, procedures, and performed procedure reviews.

United Controls Corporation, Huntsville, AL

Senior Systems Engineer, Technical Lead **1987 - 2000**

Engineering, field support, and training for I&C systems in water, wastewater treatment, natural gas distribution, electric power distribution, and HVAC.

Oversaw technical work of the engineering team, fabrication and field technicians, and CAD drafting team in industrial instrumentation and control system group. Designed and implemented PLC and RTU software for SCADA and DCS applications. Created user interface systems, specified instrumentation.

Supervised and performed mechanical and electrical fabrication, field commissioning and troubleshooting. Oversaw in-house compliance with U.L. 508A and 698A standards, including Class 1 Div. I / II / III explosive environments. Enforced National Electrical Code, thermal design requirements, and human factors considerations.

PUBLICATIONS AND PAPERS

<i>“Lithium-Ion UPS Battery Research and Commentary”</i> Oak Ridge National Laboratory	2023
<i>“Continued investigation of Arc Flash in Single Phase Systems”</i> IEEE IAS Annual Meeting	2022
<i>“Investigation of Arc Flash in Single-Phase Vertical Conductors in a Box”</i> IEEE IAS Open Journal	2021

<i>“Utilizing Virtual Missions to Achieve Real Operations Savings”</i> IEEE Aerospace Conference	2011
<i>iPV Procedure Authoring Tool User and Training Manual</i> NASA MSFC	2006-2007
<i>“Modern Control Systems”</i> AWPCA Conference	1997
<i>“Rapid Implementation of a 16 County Natural Gas SCADA System”</i> ENTELLEC Conference	1992

MEMBERSHIPS

IEEE
National Academy of Forensic Engineers
ARRL
Alabama Society of Professional Engineers (past)
Tau Beta Pi
Eta Kappa Nu
Alpha Lambda Delta
Phi Kappa Phi
Boy Scouts – Eagle Scout, Wood Badge, Scouter’s Key