
DEAN POETH, PHD, P.E., C.MFG.E.

Curriculum Vitae

EDUCATION

PhD in Industrial and Manufacturing Systems Engineering

PENN STATE UNIVERSITY, University Park, PA

Dissertation: The Development of the Methodology for the Optimization of Neutron Opaque Penetrants for Use in the Evaluation of Manufacturing Damage in Monolithic and Composite Materials (1993)

Master of Science in Industrial and Manufacturing Systems Engineering

PENN STATE UNIVERSITY, University Park, PA

Thesis: The Application of a Silicon Dioxide Coating to Polymeric Armor (1990)

Bachelor of Science in Industrial and Manufacturing Systems Engineering

THE OHIO STATE UNIVERSITY, Columbus, OH

AWARDS AND RECOGNITION

- Dean Poeth Exposé, Knolls Operations Community Newsletter, December 2017.
 - Award from Admiral Bowman, a four-star admiral and the Director of the Naval Nuclear Propulsion Program, US Navy (2001).
 - Discrete-event simulation model and analysis for a Corporate Manager. \$300 recognition award (2014).
 - Patent award (Method of Fabricating Reactor Core Components) on August 20, 2013 (\$400 award)
 - Ten patent disclosure awards (1995-2013)
 - 2005 Department of Energy certificate of recognition.
 - 2005 NOVA Chairman's Award.
 - 2005 Kermis Board of Directors.
 - 2004 Team Award.
 - 2002 - 2004 NOVA Board of Directors.
 - 2001 Team Award.
 - 1999 Recognition Award. \$500 award.
 - 1994 Critical skill hire, Knolls Atomic Power Laboratory.
 - National Engineering Honors Society (Tau Beta Pi).
 - Industrial Engineering Honors Society (Alpha Pi Mu).
 - Honors Society (Phi Kappa Phi).
 - Two Varsity Letter Awards, The Ohio State University Athletic Department.
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ACADEMIC SERVICE

- Invited Panelist, 50th Anniversary Statistics Conference, Penn State University, May, 2018
- Member of a team of Clarkson faculty (with A. Bowman, P. Otto, J. Oppenlander, J. Carlson, N. Doganakosoy) who outlined a master's degree program in analytics (2012)
- Teamed with Jane Oppenlander and Phylise Banner to convert MBA 506 into an online course
- Implemented the use of a round table in MBA 506 and MER 573 to obtain actionable student feedback mid-course
- Contributed to a Union Graduate College article on my MER 573 course

TEACHING

- IS 647 Statistical Methods for Data Analytics
- HC 647 Statistical Foundations of Data Analytics
- MBA 506 Statistical Models for Management
- MER 507 Design for Manufacturing
- MER 573 Case Studies in Failure and Ethics in Engineering
- Reactor Plant Design and Analysis Program (at Knolls Atomic Power Laboratory) since 1995
- Discrete-Event Simulation (at Knolls Atomic Power Laboratory and other Naval Nuclear Propulsion Program sites) since 2008

SELECTED PRESENTATIONS

- Knolls Atomic Power Laboratory 2017 Innovation Expo, *Radioactive Materials Laboratory Cellular Manufacturing Assessment*.
- Electronic Conference on Teaching Statistics, 2014 *Teaching the Ethics of Big Data*.
- Electronic Conference on Teaching Statistics, 2014 (with J.E. Oppenlander) *Integrating Writing in the Statistics Curriculum*.
- Electronic Conference on Teaching Statistics, 2012 *Challenger Disaster; a Case Study Examining High-Consequence Statistical Data*.
- Invited Speaker, ASM / TMS Spring Symposium, 2006 *A Method for Evaluating Manufacturing Damage in Monolithic and Composite Materials*.
- Invited Speaker, 2nd Annual Tech Valley Engineering Symposium, 2006 *Manufacturing Management Strategies for the Small Business Competing in an Offshoring Economy*.

TECHNICAL SKILLS

*Licensed Professional Engineer (PE), State of Ohio ▪ Certified Manufacturing Engineer (CMfgE)
Certified Lean Six Sigma Black Belt ▪ Qualified Prosci Change Management Practitioner*

- Expert in reducing costs and improving productivity in government and industry.** Successful career applying business knowledge and data analytics to develop, recommend, and communicate timely and actionable insight to support business decisions and increase productivity and competitive advantage.
 - Recognized subject matter expert in discrete-event simulation modeling and analysis.** Effectively visualize analytical results to improve business decision making and thereby reduce costs and risk.
 - Skilled in planning and ensuring the on-time delivery of key programs.** Strength in partnering with clients, teams, and management to identify needs, resolve issues, and facilitate the design of quality products and systems.
 - Published author, instructor, and invited speaker** on manufacturing best practices.
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|--|---|
| <input type="checkbox"/> Productivity Improvement and Cost Reduction | <input type="checkbox"/> Advanced Statistical Modeling and Analysis |
| <input type="checkbox"/> Discrete-Event Simulation Modeling and Analysis | <input type="checkbox"/> Operations Management |
| <input type="checkbox"/> Operations Research | <input type="checkbox"/> Business Case Analysis |
| <input type="checkbox"/> Predictive Analytics | <input type="checkbox"/> Business Metrics |
| <input type="checkbox"/> Design for Manufacturability (DFM) | <input type="checkbox"/> Consulting |
| <input type="checkbox"/> Engineering Ethics | <input type="checkbox"/> Six Sigma |

PROFESSIONAL EXPERIENCE

KNOLLS ATOMIC POWER LABORATORY – Schenectady, NY

1994-2018 [Retired]

Built an impressive record of achievements through a dedicated 24-year career with the Naval Nuclear Laboratory (NNL), a contractor-operated government laboratory.

- **Identified and designed 11 key inventions, resulting in 10 patent disclosure awards and 1 patent award (\$400 award).**
- **Completed a discrete-event simulation** model as the recognized Subject Matter Expert (SME). Superior Performance Outstanding Teaming (SPOT) award (\$300 award).
- **Selected to deliver technical presentations to General Manager and staff, Advisory Committee, and Subcontractor** on automated manufacturing technologies, automated fabrication and simulation modeling methods, and successful cost reduction methods for small-volume manufacturing.

Operations Research Principal Engineer, (2014-2018 [Retirement])

Chosen to execute an approved multi-million dollar program across multiple directorates with multiple, diverse stakeholders. Created conceptual layouts for stakeholder review using discrete-event simulation software. Tracked stakeholder progress to plan.

Challenges: To ensure the successful and on-time delivery of this program to reduce costs and improved business productivity.

SELECTED ACCOMPLISHMENTS:

- **Responsible for building predictive models** using statistical analysis, optimization, operations research methods including discrete-event simulation, and analytics to devise solutions to business problems. Applied analytic curiosity to identify multiple solutions and translate those solutions into actionable insight.
- **Championed the use of discrete-event simulation** modeling to reduce costs, improve designs, facilitate data-driven trade decisions, and create robust, fact-based cost estimates.

Principal Engineer, (2006-2014)

Full accountability for researching and identifying new technologies, inventing new methods and systems, designing and delivering training to new engineers, and resolving all design and deliverable issues.

Challenges: To evaluate, recommend, and implement new processes, methods, and tools to minimize costs associated with designing new systems for power plants.

SELECTED ACCOMPLISHMENTS:

- **Identified a commercial manufacturing technology and invented new automated manufacturing system product**, which has the potential to improve performance and reduce costs.
- **Successfully completed scoping studies on the use of Electrochemical Machining (ECM) and High-Speed Machining (HSM) processes** to reduce costs for an advanced technology application.
- **Discovered a non-contact automated visual inspection technology** to examine an advanced technology product. A vendor evaluation of this technology on an unclassified part was completed with positive results.

Principal Engineer, NASA Space Program (2004-2006)

Scope of responsibilities spanned evaluating and reviewing designs for manufacturability and cost effectiveness; conducting investigations on design flaws and issues; and recruiting, training, and mentoring new hires.

Challenges: To ensure the successful and on-time design of components for the build-out of a nuclear power plant in support of a NASA deep space probe.

SELECTED ACCOMPLISHMENTS:

- **Granted Department of Energy Award for superior technical reports.**
- Led 2 technical programs to evaluate lithium hydride utilizing atomistic modeling and experimental methods, **reducing forecasted lithium hydride fabrication costs by \$180K.**

Principal Engineer, Electronic Technician Maintenance School (2000-2003)

Evaluated needs and issues, created realistic project schedules, negotiated deliverables with client, and led teams in successfully executing projects to ensure the appropriate delivery of electronics maintenance and troubleshooting training to enlisted personnel. Directed all aspects of multiple, simultaneous projects, from initial inception through completion. Defined scope, costs, and deliverables. Designed and delivered status reports to commanding officers, senior officers, and senior enlisted personnel. Led cross-functional team of 30 to ensure the on-time deployment of new technologies, standards, and best practices across 5 technical schools globally.

Challenge: To define turnaround strategy for 2-year behind U.S. Navy Program.

SELECTED ACCOMPLISHMENTS:

- **Completely turned around program and achieved high success program ratings.**
- **Designed a mission-critical Navy system**, currently being deployed throughout the sub-surface fleet. Constructed the operational microprocessor-based system prototype, utilizing VME-64 technology.
- **Directed the standardization and conversion of training materials to MS PowerPoint format**, improving professionalism and productivity.
- **Managed the research, design, development, contract manufacturing, and testing of multiple electronic cabinets.**
- **Championed the introduction of COTS components, saving \$160K across 3 years.**

Senior Engineer, Manufacturing Group (1996-2000)

Chosen to evaluate, recommend, and implement new processes, methods, and tools to enhance the manufacturing of ceramic materials. Reviewed drawings to improve manufacturing productivity and reduce costs. Created training guides and delivered training to production personnel on new tools and processes.

SELECTED ACCOMPLISHMENTS:

- **Created Design for Affordability and Introduction to Manufacturing Processes training modules, which have been subsequently adopted into the corporate training curriculum.** Trained new employees on newly developed modules utilizing both classroom and online methods.
- **Developed and implemented new methods and tools, improving productivity by 400%.**
- **Led a research subprogram to develop a surface residual stress improvement method to reduce stress corrosion cracking (SCC) susceptibility for a multimillion-dollar component** produced from a high-nickel (Inconel) superalloy. Success was verified utilizing X-ray diffraction analysis.
- **Oversaw a manufacturing cost reduction team in developing plan to save \$3 million** on multimillion-dollar project.

Engineer, Non-Destructive Testing Group (1994-1996)

Recruited as a critical skill hire to invent new systems to enhance overall quality of product.

SELECTED ACCOMPLISHMENT:

- **Designed an in-situ ultrasound thin film measurement system** for a test loop that is currently in operation.

**** ADDITIONAL EXPERIENCE ****

ADJUNCT PROFESSOR, CLARKSON UNIVERSITY
CONSULTING ENGINEER, MANUFACTURING ENGINEERING CONSULTING
GRADUATE STUDENT / TEACHING ASSISTANT, PENNSYLVANIA STATE UNIVERSITY
PRODUCT DESIGN ENGINEER, INVENSYS, INC.
MANUFACTURING ENGINEER, DP PRECISION MOLDING
RESEARCHER, BATTELLE MEMORIAL INSTITUTE

SELECTED ACCOMPLISHMENTS:

- As Adjunct Professor, teach Statistical Methods for Data Analytics (IS 647), Statistical Foundations of Data Analytics (HC 647), Statistical Models for Management (MBA 506), Design for Manufacturing (MER 507), and Case Studies in Failure and Ethics in Engineering (MER 573).
- As Consulting Engineer, provided manufacturing productivity improvement and cost reduction expertise to Peebles-Herzog, Inc. client.
- As Graduate Student, conducted advanced machining research and inspection methods research.
- As Teaching Assistant, taught Ethics for Engineers and X-ray Laboratory for a Materials Evaluation course; lectured on metal forming, plastic injection molding, welding, brazing, and machining.
- As Product Design Engineer, reduced overall costs while improving performance of a production valve.
- As Manufacturing Engineer / Owner, designed, developed, tested, and manufactured injection molding dies for an injection molding machine, and over 15,000 precision nylon and polyethylene components.
- As Researcher, set up an electronic system evaluation and testing program, wrote maintenance and troubleshooting manuals, created test plans and maintenance schedules, and conducted electrical safety analysis for a fully automated manufacturing cell.

SOFTWARE

- JMP
- Arena
- OptQuest
- Minitab
- Python
- Spyder IDE
- Camtasia

RECENT TRAINING

- Applying the Quality Matters Rubric (APPQMR) 8/2018
- Python 4/2018
- Requirements Management for Project Managers 8/2017
- Prevention Through Design 1/2017
- Prosci Change Management – Delivering Project Results 1/2017
- Project Management Simulation 7/2016
- Project Management Systems Engineering 8/2016
- Making Decisions Using Earned Value 4/2016

SELECTED PUBLICATIONS

- D.F. Poeth, Radioactive Materials Laboratory Capacity Improvement, Knolls Operations Community News, June/July 2017
- D.F. Poeth, "Op-ed: Let your competitors teach you," Sunday, March 18, 2012, Daily Gazette, Schenectady, NY
- D.F. Poeth, "Op-ed: Public misbehavior illustrates need to revive ethical standards," Sunday, April 3, 2011, Daily Gazette, Schenectady, NY
- D.F. Poeth, "Op-ed: What employers need," Sunday, December 5, 2010, Daily Gazette, Schenectady, NY
- D.F. Poeth, "Op-ed: Manufacturers must cut waste and inefficiency to survive," Sunday, June 6, 2010, Daily Gazette, Schenectady, NY
- D.F. Poeth, "Op-ed: Can you imagine?," Sunday, December 6, 2009, Daily Gazette, Schenectady, NY

- D.F. Poeth, " Op-ed: It's all about fundamentals ," Sunday, May 10, 2009, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: New York manufacturing," Sunday, January 11, 2009, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: Collapse of the World Trade Center's Twin Towers a warning for the future," Sunday, September 7, 2008, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: Manufacturers take heart in the falling dollar," Sunday, May 18, 2008, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: Not made in USA," Sunday, January 27, 2008, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: Time-tested practices show environmental sense is good business," Sunday, November 18, 2007, Daily Gazette, Schenectady, NY
- D.F. Poeth, " Op-ed: U.S. manufacturers can turn offshoring to their advantage," Sunday, July 15, 2007, Daily Gazette, Schenectady, NY
- D.F. Poeth, "An Introduction to Surface Mount Devices", April 2003, CQ Amateur Radio
- D.F. Poeth, "The Pocket Metronome", October 1999, Popular Electronics
- D.F. Poeth, "Solid-State Soldering-Gun Switch", December 1998, Electronics Now
- D.F. Poeth, "Make Your Own Shunts", May 1998, Electronics Now
- D.F. Poeth, "Electronic Lighthouse", August 1997, Poptronix Experimental Handbook
- D.F. Poeth, "How to Get Your Ham License", February 1997, Radio Control Modeler
- D.F. Poeth, "Electronic Lighthouse", August 1996, Electronics Now
- D.F. Poeth, "The Design of a Zero Force Switch for use in Industrial Soldering Guns", 1996, International Journal of Industrial Engineering
- D.F. Poeth, "How to Measure Large Direct Currents Using Common Meters", January 1996, QST Amateur Radio.
- D.F. Poeth, "Build a Solid-State Penlight", April 1996, Popular Electronics
- D.F. Poeth, "The Experimental Determination of the Neutron Cross Section for Selected Solvents", 1996, Journal of Nondestructive Evaluation
- D.F. Poeth, C.O. Ruud, "The Measurement of Neutron Cross Sections for Contrast-Enhancing Penetrant Fluids," 1996, Research in Nondestructive Evaluation
- D.F. Poeth, "The Experimental Determination of the Neutron Cross Section for Selected Solvents (Final Report)", August 1993, Radiation Science and Engineering Center 38th Annual Progress Report U.S. Department of Energy
- D.F. Poeth, "The Experimental Determination of the Neutron Cross Section for Selected Solvents (Interim Report)", August 1992, Radiation Science and Engineering Center 37th Annual Progress Report U.S. Department of Energy
- D.F. Poeth, "Application of Liquid Penetrants to Neutron Radiographic Inspection of Metal Matrix Composites", July 1992, Internal Report
- D.F. Poeth, "Telephone Ring Converter", April 1992, Popular Electronics
- D.F. Poeth, "Solid State Penlight", February 1991, Popular Electronics
- D.F. Poeth, "Evaluation of Adhesive Strength of CVD Polycrystalline Diamond Coatings Deposited on Sialon Substrates", January 1991, Nondestructive Characterization of Materials IV, Plenum Press New York
- D.F. Poeth, "Evaluation of Adhesive Strength of CVD Polycrystalline Diamond Coatings Deposited on Sialon Substrates", December 1990, IMSE Working Paper
- D.F. Poeth, "The use of Neutron Radiography to Nondestructively Investigate Internal Damage in Metal Matrix Composites", December 1990, Internal Report
- D.F. Poeth, "Options in Nondestructive Testing of Components and Printed Circuit Boards", March 1990, Electronic Manufacturing
- D.F. Poeth, "Finding the Source of Computer Generated Interference", September 1989, Ham Radio Magazine
- D.F. Poeth, "The Evaluation of Mechanical Flaws Found in Electrodes used in Extracorporeal Shock Wave Lithotripsy", April 1989, Internal Report
- D.F. Poeth, "The Smoke Tester", January 1989, Radio Electronics