



Shawn P. Capser, Ph.D., P.E., PStat, CRE

Owner of and Consultant with
Praxis Reliability Consulting, LLC.
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Education

Doctor of Philosophy in Engineering <i>University of Toledo</i> <ul style="list-style-type: none">Reliability EngineeringDecision Theory and Value of InformationBayesian Statistics	Aug 2015 – May 2018 <i>Toledo, Ohio</i>
Master of Science in Statistics <i>University of Toledo</i> <ul style="list-style-type: none">Mathematical StatisticsProbability TheoryStatistical Inference	Aug 2015 – May 2020 <i>Toledo, Ohio</i>
Master of Science in Industrial & Systems Engineering <i>University of Michigan – Dearborn</i> <ul style="list-style-type: none">Quality Engineering	Jun 2001 – Dec 2006 <i>Dearborn, Michigan</i>
Master of Science in Mechanical Engineering <i>University of Toledo</i> <ul style="list-style-type: none">Fluid MechanicsHeat Transfer	Sep 1995 – Aug 1997 <i>Toledo, Ohio</i>
Bachelor of Science in Mechanical Engineering <i>University of Toledo</i>	Sep 1990 – Aug 1995 <i>Toledo, Ohio</i>

Licenses, Accreditations, Certifications

Licensed Professional Engineer <i>State of Michigan</i>	License #6201069773 <i>Expires January 2025</i>
Accredited Professional Statistician (PStat®) <i>American Statistical Association</i>	amstat.org - roster <i>Expires July 2026</i>
Certified Reliability Engineer (CRE) <i>American Society for Quality</i>	Certificate #36906 <i>Expires December 2028</i>
Operational Six Sigma Master Black Belt <i>International Quality Federation</i>	Certificate #SC190MBB <i>Since February 2004</i>
Design for Six Sigma Master Black Belt <i>International Quality Federation</i>	Certificate #SC190DMBB <i>Since March 2009</i>
Certificate Program for Using R <i>The Institute for Statistical Education (TISE)</i> <small>TISE is certified through the State Council of Higher Education for Virginia (SCHEV).</small>	<i>Received August 2015</i>

Professional Experience

Praxis Reliability Consulting, LLC.

December 2012 – (present)

Owner, Consultant

Monroe, Michigan

- Reliability Management for New Product Development
 - Integration of structured reliability management process within existing product development programs
 - Provide leadership in the application of key reliability tools and methods on product development efforts
- Provide support in developing design validation plans for components, assemblies, and complex, repairable systems
 - Design of Accelerated Life Testing (ALT) for components and assemblies
 - Development of Reliability Growth (RG) test plans for repairable systems
- Warranty Analysis and Forecasting
- Customer Usage Profiling
- Consulting in Applied Statistics
 - Statistical Inference, Design of Experiments, Regression, Categorical Data Analysis, and Logistic Regression
- Expert witness in litigation matters
 - Use data analysis and statistical methods to develop opinions with a reasonable degree of engineering and statistical certainty regarding likelihood of failure, potential cause(s) of failure, forecasting, and quantifying the “at-risk” population.
- Six Sigma Training and Certification
 - Certification of Green Belts, Black Belts, and Master Black Belts

Engineering Systems, Inc.

May 2017 – June 2021

Sr. Consultant

Ann Arbor, Michigan

- Expert witness in litigation matters

University of Toledo

May 2018 – (present)

Adjunct Professor, Department of Mechanical Engineering

Toledo, Ohio

- Probability & Statistics I (MIME4000)
- Probability & Statistics II (MIME4980)
- Design for Six Sigma (MIME4980/5980)
- Design of Experiments (GNEN6980/MIME6980)
- Reliability (MIME4690/5690)

International TechneGroup, Inc.

February 2010 – February 2013

Sr. Reliability Engineering Consultant

Milford, Ohio

- Consultant for reliability management in new product development

AVL Powertrain Engineering, Inc.

January 2006 – February 2010

Technical Specialist in Statistical and Reliability Methods

Plymouth, Michigan

- Reliability Engineering consultant for powertrain development

Ford Motor Compnay/Visteon Corporation

May 1997 – December 2005

Design Engineer, Six Sigma Master Black Belt

Dearborn, Michigan

Note: Visteon Corporation was an enterprise of Ford Motor Company between September 1997 and June 2000.

- Corporate Six Sigma Master Black Belt
- Reliability Engineer - Powertrain division (Fuel Storage & Delivery)
- Product Design and Release Engineer - Chassis Division

American Axle & Manufacturing

October 1996 – May 1997

Test Engineer

Rochester Hills, Michigan

Publications

“*Early Life Reliability Growth Testing with Non-Constant Failure Intensity*”. Haselgruber, Nikloaus, Capser, Shawn P., Vignati, Giorgio I., International Conference on Industry 4.0 and Smart Manufacturing, Procedia Computer Science, Volume 180, 2021, Pages 608-617, <https://doi.org/10.1016/j.procs.2021.01.283>.

“*Compliance Testing for Locomotive LED Headlights and Auxiliary Lights, Phase II*”. Meza-Arroyo, Manuel, Shibata, Peggy A., Sprague, James K., Capser, Shawn, U.S. Department of Transportation, Federal Railroad Administration, Publication/ Report Number: DOT/FRA/ORD20/42. 2020.

“*Sensitivity Analysis of Various Vehicle Dynamic Simulation Software Packages Using Design of Experiments (DOE)*”, R. Matthew Brach, Shawn Capser, Emmanuel Jay Manuel, Joshua Rogers, Robert Bailey, Paper 2020-01-0639, SAE International, Warrendale, PA, 2020.

“*The Kinematic Analysis of Occupant Excursions and Accelerations during Staged Low Speed Far-Side Lateral Vehicle-to-Vehicle Impacts*”. Shibata, P., Roberts, J., Sprague, J., Light, A., and Capser, S., SAE Technical Paper 2019-01-1030, 2019, <https://doi.org/10.4271/2019-01-1030>.

Assessing the Value of Information for Comparing Multiple, Dependent Design Alternatives. Capser, Shawn P. 2018. University of Toledo, Doctoral dissertation. OhioLINK Electronic Theses and Dissertations Center http://rave.ohiolink.edu/etdc/view?acc_num=toledo1520689318651851

“*Value of Information for Comparing Dependent Repairable Assemblies and Systems*”. Capser, S.P. and Nikolaidis, E., SAE Technical Paper 2018-01-1103, 2018, doi:10.4271/2018-01-1103.

“*Assessing the Value of Information for Multiple, Correlated Design Alternatives*”. Capser, Shawn and Efstratios, Nikolaidis, SAE 17IDM-0020 (2017).

“*Sensitivity Analysis of Simulated Postimpact Vehicle Motion Using Design of Experiments (DOE)*”. Brach, R. and Capser, S., SAE Technical Paper 2018-01-0526, 2018, <https://doi.org/10.4271/2018-01-0526>.

“*THE-71G, 2007 AIAG Truck and Heavy Equipment Reliability Methods Guide, Reliability Program Implementation Plan and Report*”. Version 1, Joe Anderson, John Bair, Doug Berg, Mark Braun, Shawn Capser, et al. Issued 12/2006.

“*The Influence of the Steering Gear Design into the Steering Wheel Nibble*”. Capser, Shawn and Massera, Sergio, SAE Technical Paper 2003-01-3643, doi:10.4271/2003-01-3643, November 18, 2003.

Presentations

“*Making Conservative Estimates of Demonstrable Reliability When Model Parameters Are Unknown*”. Capser, Shawn, Applied Reliability Symposium, San Diego, 2009.

Programming Languages

Python: intermediate

R/R Studio: proficient

L^AT_EX: advanced

Awards & Honors

Outstanding Leadership Team Award

Automotive Industry Action Group (AIAG)

2012

Excellence in Oral Presentation Award

Society of Automotive Engineering (SAE), World Congress

2017