

Mr. Thobe has over 30 years of experience in engineering, which includes working with powertrain, construction, marine, locomotive, power generation, and medical devices. He has been involved in the design, analysis, testing, and manufacturing of engineered products, as well as having extensive involvement in the application of statistical methods. His capabilities include data analysis, Failure Mode and Effects Analyses (FMEA), Design of Experiments (DOE), and statistical modeling.

Prior to joining ESI in 2020, Mr. Thobe worked in the medical device industry where he created study designs and performed statistical analysis for design quality assurance, including work with gage R&R studies and process capability. He also trained employees in statistical methods and software tools.

In addition, Mr. Thobe has been deeply involved with customer support, working as an application engineer and technical liaison on an overseas assignment. He has also been a team leader and project manager.

Licenses & Certifications

- State of Michigan Professional Engineer (PE) License No. 6201308995
- State of Indiana Engineer in Training (EIT) No. ET00920543
- American Society of Quality (ASQ) – Certified Reliability Engineer (CRE) No. 34156
- American Society of Quality (ASQ) – Certified Quality Engineer (CQE) No. 101166
- American Society of Quality (ASQ) – Certified Six Sigma Green Belt (CSSGB) No. 22187

Positions Held

Engineering Systems Inc., Ann Arbor, Michigan

- Senior Staff Consultant, 2020 – Present

Terumo Cardiovascular Group, Ann Arbor, Michigan

- Statistician II, 2019 – 2020
- Statistician I, 2015 – 2019

Federal-Mogul Corp., Ann Arbor and Plymouth, Michigan

- Senior Application Engineer, European Project Support, 2009 – 2015
- Team Leader, 1995 – 2001
- Application Engineer, 1999 – 2006

Keith R. Thobe

Senior Staff Consultant

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ESi – Ann Arbor

1174 Oak Valley Drive
Ann Arbor, MI 48108

Education

MA, Applied Statistics. University of Michigan. 2008

BS, Mechanical Engineering.
Purdue University. 1992

Areas of Specialization

Applied Statistics

Reliability Analysis

Product Design and Development

Study Design

Six Sigma

Manufacturing Process Validation
and Continuous Improvement

Caterpillar, Inc., Large Engine Center, Lafayette, Indiana

- Design Engineer, 1996 – 1999
- Test and Reliability Engineer, 1994 – 1996
- Designer, 1993 – 1994

Publications

Sensitivity Analysis of Virtual Crash Simulation Software Using Design of Experiments (DOE)

J.M. Roberts, N.E. Civitanova, J.A. Stegemann, D.A. Buzdygon, and K.R. Thobe, SAE International, SAE Technical Paper, 2025-01-8693, doi:10.4271/2025-01-8693, 2025

Accuracy of Flight Parameters Calculated from Radar and Automated Dependent Surveillance-Broadcast (ADS-B) Data

T.P. Jung, K.M. Greene, K.R. Thobe, M.K. Bauer, and A. Moen, American Institute of Aeronautics and Astronautics, SciTech Forum, AIAA-2025-1623, 2025

Flip-Flops: A Survey of Risk Perception and Acceptance

D. Fortenbaugh, P. Shibata, M. Meza-Arroyo, K. Thobe, and T. Welch, In Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Sage CA: Los Angeles, CA: SAGE Publications. 2022, September, Vol. 66, No. 1, pp. 513-517, doi:10.1177/1071181322661160, 2022

Case Study

ESi Major Pipe Recall

A.M. Pettinger, K.R. Thobe, E.E. Wright, A.R. Pruitt, "The Statistical Significance of Your Case," presentation to the North Dakota Defense Lawyers Association, September 2021

- Statistical analysis of the production and test records associated with the manufacturing process's capability to manufacture pipe consistent with the technical specifications.
- <https://www.engsys.com/work/major-pipe-recall-engineering-analysis-of-production-data-justifies-replacement/>

Continuing Education

- **Cartography (onGEO-CART424)** – Michigan State University, 2024
- **Spatial Statistics (onGEO-SPST324)** – Michigan State University, 2024
- **Introduction to Geospatial Technologies (onGEO-IGT224)** – Michigan State University, 2024
- **Event Data Recorder Update and Analysis** – Ruth Consulting, 2023
- **A Crash Course in Causality: Inferring Causal Effects from Observational Data** - Coursera (University of Pennsylvania), 2021
- **Traffic Signal Timing Records Interpretation and Analysis** – Traffic Signal Academy, University of Tennessee, 2020
- **Preparing to be an Expert Witness** - American Statistical Association, 2020
- **Modeling Count Data** - Statistics.com, 2016

- **Reliability Analysis Methods** - Integral Concepts, 2014
- **Categorical Data Analysis** - Statistics.com, 2013
- **Introduction to Bayesian Statistics** - Statistics.com, 2012
- **Reliability Analysis (IMSE 567)** - University of Michigan-Dearborn, 2012
- **Advanced Reliability** - Minitab, 2011
- **Introduction to Reliability** – Minitab, 2011
- **Applied Survival Analysis** - University of Michigan CSCAR, 2009
- **Statistical Quality Analysis** - Minitab, 2008
- **Basic Statistics** – Minitab, 2008
- **Introduction to Minitab** – Minitab, 2008
- **Using ArcGIS** - University of Michigan CSCAR, 2008
- **Introduction to SPSS** - University of Michigan CSCAR, 2008
- **Six Sigma Green Belt Training (DMAIC)** – Caterpillar University College of 6 Sigma, 2006
- **TRIZ Problem Solving Methodology** – Federal-Mogul, 2004
- **Techniques in Problem Solving (TIPS/8D)** - Federal-Mogul, 2004
- **Geometric Dimensioning & Tolerancing (GD&T)** – Federal-Mogul, 2000
- **Design of Experiments (DOE)** – Caterpillar, 1997
- **Strain Gage Training** – Micro Measurements, 1996
- **Fundamentals of Metallurgy** – Caterpillar, 1995
- **Introduction to ANSYS** – ANSYS, 1995
- **Pro/E Sheet Metal** - Parametric Technology Corp., 1995
- **Pro/E Surfaces** - Parametric Technology Corp., 1994
- **Pro/E Basic** - Parametric Technology Corp., 1993

Professional Affiliations/Honors

Society of Automotive Engineers (SAE)

- Member, 2024 – Present

Engineering Society of Detroit

- Member, 2020 – Present

American Society for Quality (ASQ)

- Member, 2016 – Present

American Statistical Association (ASA)

- Member, 2006 – Present
- Ann Arbor Chapter Vice President, 2011 – 2013

Pi Tau Sigma Honor Society (Mechanical Engineering)

- Member, 1991 – Present



Keith R. Thobe
Senior Staff Consultant

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Project Experience

Quality Management System Assessment – Manufacturing Sector

- Performed extensive interviews, research, and plant visits to document client's historical and current state.
- Performed analysis of client's internal risk assessment and FMEA effectiveness.
- Presented recommendation for corporate prioritization.