



John Meyer, Ph.D., PE

Principal Engineer, Edison Engineering
Engineering Consultant, Solution Engineering Group

Profile: Selected Practice Areas

- **Mechanical Engineering:** Analyzes the mechanical design and performance of equipment and structures. Examines forces, mechanics, kinematics and thermodynamics to evaluate a design relative to structural integrity, strength, durability, vibration, fatigue and wear.
- **Failure Analysis:** Investigates and analyzes failures of mechanical systems and components. Evaluates the effects of loading, stress concentrations, vibrations, fatigue, material properties and human interaction to identify the root cause of a failure.
- **Accident Investigation and Reconstruction:** Utilizes scientific methodologies to accurately reconstruct and explain the circumstances of an accident. Inspects accident sites, evaluates condition of equipment, conducts testing and engineering analysis to understand the speeds, forces, timing, and human actions and performance relative to an incident.
- **Machine Design:** Applies mechanical engineering principles to evaluate the design and safety of equipment manufactured for personal-use and industrial applications. Evaluates the design intent, design considerations and tradeoffs, usage, warnings and safety messages, maintenance and compliance with government regulations and industry standards to assess overall design.
- **Photographic, Optical and Visual Analysis:** Obtains quantifiable data from photographs using photogrammetric analysis techniques. Assesses environments in terms of lighting, contrast perception and visibility, visual conspicuity, pedestrian safety and other lighting-related issues.

Education: Academic Degrees

- **Ph.D., Massachusetts Institute of Technology,** Mechanical Engineering, 1994
- **M.S., Massachusetts Institute of Technology,** Mechanical Engineering, 1990



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- **B.S., Bethel College, Physics, *summa cum laude*, 1987**

Experience: Applications and Areas

Failure Analysis	Industrial Equipment	Mechanical Testing
Machine Design	Heavy Machinery	Machine Guarding
Risk & Hazard Analysis	On- & Off-Road Vehicles	Accident Reconstruction
Photogrammetry	Aircraft	Metal Fatigue
Visibility & Conspicuity	Railroad	Vibration
Human Factors	Consumer Products	Automatic Control Systems
Warnings	Machine Safety	Patent Infringement

Instruction: Selected Teaching

- **Lewis University**, 47-390-05: Applied Aircraft Accident Investigations, "Mechanical and Materials Investigations," 2010 – 2012
- **EPIC School of Evidence Photography and Imaging**, Evidence Photographers International Council, Inc., "Accident and Crime Scene Investigation for Re-creation," 2006
- **Northwestern University**, Robert R. McCormick School of Engineering and Applied Science, adjunct professor & course developer, CIV-ENG 395: Engineering Forensics, 2006
- **Stanford University**, AA 252: Techniques of Failure Analysis, "Elements of Complex Vehicular Accident Reconstruction," 1996 – 1999, 2001
- **Purdue University**, Tech 525: Applications in Forensic Engineering, "Vehicular Accident Reconstruction in Forensic Engineering," 1999

Licenses: Professional Registration

- **Illinois**, Licensed Professional Engineer, License No. 062-0583
- **NCEES**, Registration No. 33563

Affiliations: Professional & Technical Memberships

- American Society of Mechanical Engineers (ASME)
- American Society of Safety Engineers (ASSE)
- Human Factors & Ergonomics Society (HFES)
- Illuminating Engineering Society of North America (IESNA)

- Society of Automotive Engineers (SAE)
- American Society of Photogrammetry & Remote Sensing (ASPRS)
- Sigma Xi

Honors: Awards and Honors

- Listed in Marquis Who's Who in Science & Engineering, Millennium Edition, 2000
- Bethel College Presidential Scholar, 1984 – 1987
- Gertrude Nyborg Memorial Scholarship, 1984 – 1987
- First Banks Minneapolis Scholarship, 1984
- Hopkins Elks Lodge Scholarship, 1984
- NSP Scholarship, 1984

Studies: Continuing Education

- **Advances in Imaging**, Massachusetts Institute of Technology, 2013
- **Assessing Risk Factors in Machinery**, PDH Center, 2011
- **Hydraulics and Pneumatics**, American Society of Mechanical Engineers, 2009
- **Fracture Mechanics Approach to Life Prediction**, American Society of Mechanical Engineers, 2009
- **Aircraft Accident Investigation**, University of Southern California, Aviation Safety and Security Program, 2007
- **Injuries, Anatomy and Biomechanics**, Society of Automotive Engineers, 2000
- **Photogrammetry in Accident Reconstruction**, Society of Automotive Engineers, 1998

Employment: Roles and Responsibilities

Edison Engineering – Saint Charles, Illinois

2014 to

Present

Principal

Responsible for the engineering investigation and analysis of accidents, incidents, mishaps, and failures of all varieties. Specialize in accident investigation and reconstruction; failure analysis; computer-aided modeling and simulation; testing; and analysis of machine design, usage and safety. Extensive experience involving a widely diverse range of items, including aircraft, industrial equipment and machinery, automobiles and other vehicles, as well as consumer products.

Analyze loads, forces, assess mechanical design and perform risk analyses.

Evaluate issues such as machine guarding, warnings, and human behavior. Examine vision and lighting issues related to accidents, including contrast perception, visual conspicuity, and visibility. Evaluate and assess human behavior and performance. Perform photogrammetric and image analysis to obtain quantifiable data from photographs.

ITC Experts – Sugar Grove, Illinois
2014

2010 to

Vice President, Mechanical Engineering

Conducted engineering investigation of accidents, incidents, mishaps, and mechanical failures. Specialized in accident investigation and reconstruction; failure analysis; computer- aided modeling and simulation; testing; and analysis of machine design, usage and safety. Technically diverse scope of analysis and subject matter, ranging from small and simple devices to large, complex, multifaceted machines, including products from the aviation, construction, transportation, and consumer product industries.

Professional Analysis and Consulting, Inc. – Sugar Grove, Illinois
2010

2008 to

Mechanical Engineer

Provided consulting engineering services, including accident investigation and reconstruction; failure analysis; mechanical system analysis; testing; computer- aided simulation and analysis; machine design, usage and safety; and issues related to mechanical system failure.

Packer Engineering – Naperville, Illinois
2008

2004 to

Vice President

Responsible for accident investigation and reconstruction; failure analysis; mechanical system analysis; testing; computer- aided simulation and analysis; machine design, usage and safety; and issues related to mechanical system failure. Also served in various management and leadership roles.

ProAnalysis – Atlanta, Georgia
2003

2002 to

Consulting Engineer

Responsible for accident investigation and reconstruction; failure analysis; mechanical system analysis; testing; computer- aided simulation and analysis; machine design, usage and safety; and issues related to mechanical system failure.

Exponent, Failure Analysis Associates – Menlo Park, California & Atlanta, Georgia
2002

1994 to

Managing Engineer

Performed accident investigation and reconstruction related to vehicles of all types, including on- and off-road vehicles, heavy equipment, lifts, cranes, ATVs, motorcycles, and bicycles.

Performed accident recreation and analysis through computer-aided modeling and simulation; inspection, evaluation, and testing of vehicular subsystems and components; and conducted full- scale vehicle crash testing. Investigated issues related to visibility and conspicuity as well as evaluated human behavior. Also conducted mechanical system design analysis related to mechanical system failure.

Charles Stark Draper Laboratory – Cambridge, Massachusetts
1994

1990 to

Research Assistant

Researched, developed and experimentally implemented a novel control methodology for the active vibration damping of complex, interconnected structures maximizing the use of known spatial information while not requiring a detailed mathematical model of the system for the control compensator.

Massachusetts Institute of Technology – Cambridge, Massachusetts
1990

1988 to

Research Assistant

Investigated the correlation between automobile seat design and physical driver fatigue. Conducted instrumented driving tests and analyzed in comparison to subjective evaluations of fatigue using multi-dimensional scaling techniques.

3M – St. Paul, Minnesota
1987

1986 to

Technical Aide

Measured and investigated surface properties of magnetic media and associated manufacturing equipment using custom-designed state-of-the-art laser interferometer.

Technical: Selected Publications and Presentations

Publications

1. D. Curry, W. Ringeisen, P. Antezana, and J. Meyer, "When and Why a Lack of Warning May Not Equal a 'Failure to Warn,'" For The Defense, Vol. 57(11), pp. 72–83, November 2015.
2. D. Curry and J. Meyer, "Industrial Ergonomics," in Manufacturing Engineering Handbook, 2nd Edition, H. Geng (ed.), New York: McGraw-Hill Education, 2016.
3. D. Curry, J. Meyer, and A. Jones, "Driver Distraction: Are We Mistaking a Symptom for the Problem?" Society of Automotive Engineers 2013 World

Congress, Detroit, MI, SAE, April 2013.

4. D. Curry, J. Meyer, and J. McKinney, "Seeing versus Perceiving: What You See Isn't Always What You Get," Professional Safety, Vol. 51(6), June 2006.
5. "Spatial Compensator Design for the Active Vibration Damping of Interconnected Flexible Structures," Doctoral Thesis, Massachusetts Institute of Technology, 1994.
6. J. Meyer, S. Burke and J. Hubbard, "Distributed and Discrete Transducer Spatial Design for Finite- Element-Modeled Flexible Structures," Smart Structures and Materials 1994: Smart Structures and Intelligent Systems, Proceedings, SPIE Smart Structures and Materials Conference, N. Hagood (ed.), Vol. 2190, pp. 369-380, Orlando, FL, 1994.

7. J. Meyer, S. Burke and J. Hubbard, "Extension of Sliding Control Theory to the Model- Independent Active Vibration Damping of Flexible Structures," Adaptive Structures and Material Systems, Vol. 35, pp. 339-345, 1993.
8. S. Burke, J. Hubbard, and J. Meyer, "Distributed Transducers and Colocation," Mechanical Systems and Signal Processing, Vol. 7(4), pp. 349-361, 1993.
9. S. Burke, J. Hubbard, and J. Meyer, "Colocation: Design Constraints for Distributed and Discrete Transducers," Symposium on Intelligent Structural Systems, American Society of Mechanical Engineers 13th Biennial Conference on Mechanical Vibration and Noise, Miami, FL(1991).
10. J. Meyer, T. Sheridan, et al, "Physiological and Psychological Evaluations of Driver Fatigue During Long-Term Driving," Paper 910116, Society of Automotive Engineers International Congress and Exposition, Detroit, MI, 1991.
11. "The Measurement of Automobile Driver Fatigue," Master's Thesis, Massachusetts Institute of Technology, 1990.
12. J. Meyer, G. Robinson, et al., "The 3M-Bethel College Differential Laser-Scanning Interferometer," 3M Technical Report, April 1988.

Presentations

1. "Advanced Accident Investigation Strategies," National Business Institute, Advanced Issues in Person Injury Litigation, Indianapolis, IN, December 2014 (with D. Curry).
2. "Advanced Accident Investigation Strategies," National Business Institute, Advanced Issues in Person Injury Litigation, Indianapolis, IN, December 2013 (with D. Curry).
3. "New Technology in Evidence Preservation and Scene Documentation," Invited Presentation, National Association of Railroad Trial Counsel, 2008 Winter Meeting, Phoenix, AZ, March 2008 (with T. Long).
4. "Accident Scene Investigation and Documentation," Invited Presentation, Union Pacific Law/Claims Meeting, Devils Head, WI, May 2007 (with T. Long).
5. "Human Factors in Aviation: Errors & Aging," Seminar, Aviation Insurance Association Annual Conference, Palm Springs, CA, April, 2007 (with D. Curry).
6. "Accident and Crime Scene Investigation for Re-creation," EPIC School of Evidence Photography and Imaging, Evidence Photographers International Council, Inc., Long Beach, CA, November 2006.
7. "Accident Reconstruction: A Primer," Invited Seminar for Westfield Insurance Company Claims Adjusters, Westfield Center, OH, October 2006.
8. "From Black Boxes to Black & Blue—Reconstruction Pitfalls That Can Leave You

Seeing Red," Invited Seminar, FDCC Winter Meeting, Transportation Session,
Las Vegas, March 2006.

9. "Engineering Perspective: Reconstruction Analysis of Heavy Equipment Accidents," Invited Seminar, DRI Product Liability Conference, ACMIE Breakout Session, Los Angeles, CA, February 2005.
10. "Failure Analysis," Invited Seminar for West Bend Mutual Insurance Company Claims Adjusters, West Bend, WI, September 2004.
11. "Capturing the Facts," Invited Seminar for West Bend Mutual Insurance Company Claims Adjusters, West Bend, WI, September 2004.
12. "Hidden Implications of Black-Box Data," Invited Seminar for West Bend Mutual Insurance Company Claims Adjusters, West Bend, WI, September 2004.
13. "Classification of Accidents: Vehicular Damage and Occupant Outcomes," Seminar for Atlanta Area Claims Adjusters, October 2001 (with K. Kennett).
14. "Vehicular Accident Reconstruction: Tools and Methods," Invited Presentation, State Farm 2000 Causation Seminar, Rohnert Park, CA, November 2000.
15. "Differential Temperature Measurements within an RF-induced, Cold Plasma," Presentation, The Minnesota Association of Physics Teachers, Northfield, MN, October 1987.