

Bruce A. Wiers, PE

Forensic Engineering Expertise

Mechanical Failure

Over 25 years of investigation of losses to determine root cause of mechanical failure, including industrial accidents, failures, explosions, appliances, HVAC equipment, plumbing, fireplaces, and auxiliary heating products.

Qualifications & Training

- The Duty of Care: Resilience & Ethical Adaptation to Shifting Conditions, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- The Case for AI in Forensic Engineering: Enhancing Expert Testimony and Avoiding Obsolescence, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- How NOT to Serve As an Expert: (aka Why I Retired From Forensic Engineering), National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Responsible Charge: Building/Enclosure Energy Modeling for Forensic Engineering Investigations & Building Assessments Using Electronic Spreadsheets, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Pitfalls of Multi-Jurisdictional Practice for Engineers, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Introduction to Consumer-Based 3D Scanner Apps for Use in Forensic Investigations, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Beyond the Building Code: Expansive Soils, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Barrel Failure in an Over and Under Shotgun, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Forensic Investigation of Bitcoin Mining, Power Transmission, and Vegetation Mismanagement Causing Electrical Faults and Railroad Control System Failures, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- The Importance of Human Perception in Incident Reconstruction and the Potential for Misleading Interactive Reconstructions, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Unreliable at the Boundary: Analysis of Two Sub-Optimum Crossbow Trigger Designs, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Forensic Engineering Evaluation and Quantification of Fire Damage to a Home Under Construction, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Forensic Hydraulic Analysis of a Tow and Barge Vessel Allision with a Lock and Dam, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Discerning Wind-Related Damage to Residential Roofs: A Case Study of Shingle and Tile Roofs, National Academy of Forensic Engineers 2025 Summer Conference, July 2025
- Lithium-Ion Energy Cell Explosions: Investigating the Contribution of Design, Marketing, and Warnings to Consumer Risks, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- FE Evaluation of a Collapsed Factory Roof, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- FE Analysis of a Modular Fireplace Fire with an Improperly Constructed Hearth Extension, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Design Review of TITAN Submersible, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Risk Factors When Predicting Mortality of Burn Injuries of Patients Smoking While Undergoing Home Oxygen Therapy, National Academy of Forensic Engineers 2025 Winter Conference, January 2025

- Using GPR Techniques in Forensic Structural Engineering Investigations, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Delayed Inspection: Determining the Cause of an Electrical Fault One Year After the Incident, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Forensic Analysis of Construction Variances Associated with Cement Plaster (Stucco) Veneer on Wood Framing, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Non-Destructive Evaluation Techniques for Forensic Engineers, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Investigating Solar Fires, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- When the Sun Burns – Technical Investigations of Solar Projects, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Mock Trial: Navigating Expert Testimony as a Forensic Engineer, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Ethics in Engineering: Maintaining Professional Integrity, National Academy of Forensic Engineers 2025 Winter Conference, January 2025
- Forensic Engineering Analysis of Roadway Geometry and Traffic Control, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Forty Years of Advances in Failure Analysis of Polymeric Composite Materials, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Forensic Engineering of a Farm Clevis Failure Through Analysis of Photographs, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Improving Effectiveness of Forensic Engineering Reports, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Forensic Analysis of an Elevated Pool Vault, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Investigating the Effects of Imperfections on an Aluminum Stepladder Using Finite Element Analysis, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Analysis of a UTV Axle Fracture Associated with Rollover, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Innovative Uses of Generative Artificial Intelligence Tools in Fire Investigation, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Wet Arson: Staged Water Losses and the Evolving Face of Insurance Fraud, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Open your wallet and put on the handcuffs – the Corporate Transparency Act, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Diamond Decision Process – Managing Cost and Risk of Metallurgical Forensic Cases, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Preventing Construction Defects: Establishing a Risk Management Program When Your Client is Tired of Being a Defendant, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Collision Analysis Fundamentals, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Investigating the Claims of Blasting and Construction Vibration Damages, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Practical Real-World Ethical Challenges a Forensic Engineer Faces and How to Contend With Those Challenges Ethically, National Academy of Forensic Engineers 2024 Summer Conference, July 2024
- Media Minefields: Guidance on When, Why and How to Engage with the Media, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Storming into the Insurance Industry, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024

- Reading, Researching, and Understanding White Papers, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Contracts with Bite vs. Contracts That Bite, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Engineering Ethics: An Insider's Account of the Space Shuttle Columbia Disaster, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Forensic Engineering Analysis of Abrasive Additives in Painted Walkways Utilizing a Portable Digital Microscope In-Situ as a Tool for Litigation of Slip and Fall Cases, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Forensic Engineering Analysis of a Residential Fire Caused by An Open Neutral, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Beyond the Building Code: A Forensic Approach to Construction Defect Evaluation, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Examples of Using Experimental Design Techniques to Solve Problems in the Field, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Improving the Forensic Engineering Practice for Property Casualty Losses, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Failure of a Climbing Treestand Due to Corrosion and Selective Leaching of Cable's Galvanic Layer: Failure Analysis and Experimental Study, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Applying Reverse Projection Photogrammetry in Forensic Engineering, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Artificial Intelligence in Forensic Engineering: A New Era of Efficiency, Clarity, and Accuracy, National Academy of Forensic Engineers Winter Conference Educational Program, January 2024
- Bullet Proof Your Retention Agreement, National Academy of Forensic Engineers, July 2023
- Expert Witness Report Writing and Testimony, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- The Use of Animation for Deposition and Jury Presentation in Forensic Engineering, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Cutting-Edge Ethics, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Less Is More: The Pleasure and Pain of Running a Solo Forensic Engineering Practice, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Understanding the Applicability and Proper Use of Commonly Available Weather Data in Forensic Engineering, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Investigation and Root Cause Analysis of Transformer Metering Destruction by Arc Flash, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Subject Ability to Characterize g's in Relation to Activities of Daily Living, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Forensic Investigation of Wood Boxcar Flooring, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Distracted Driving: Determining Cell Phone Usage from Forensic Cellular Records, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Utilizing ASCE/SEI 7 to Estimate the Wind Speed Required to Overturn a Structure, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- Forensic Engineering Investigations of Low-Force Type Wheel Separations, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023
- The 2021 Near Catastrophic Failure of the Texas Electrical Grid — Lessons Learned About the Most Complex Machine Ever Developed, National Academy of Forensic Engineers Summer Conference Technical Program, July 2023

- Forensic Examination of Post Fire Damaged Electrical Conductors by Quantitative Measurement to Increase Reliability of Electrical Fault Evaluations, National Academy of Forensic Engineers, January 2023
- Forensic Engineering Investigation of a Machine-Related Injury, National Academy of Forensic Engineers, January 2023
- FE Investigation of Design and Quality Control Issues of Metal-On-Metal Hip Implant Failures, National Academy of Forensic Engineers, January 2023
- Application of Matchmoving for Forensic Video Analysis of a Pedestrian/Train Collision and Verification with Recorded Event Data, National Academy of Forensic Engineers, January 2023
- Forensic Engineering Investigation of Maintenance and Operational Factors Contributing to the Collapse of a Crane Boom, National Academy of Forensic Engineers, January 2023
- South Florida Condominium Seawall Rotation and Subsequent Parking Structure Failure with Redesign, National Academy of Forensic Engineers, January 2023
- Nondestructive Forensic Investigation of a Scissor Lift Fatality, National Academy of Forensic Engineers, January 2023
- When the Forensic Engineer is Faced with Notifying Occupants to Vacate, National Academy of Forensic Engineers, January 2023
- Putting Daubert Theory into Practice, National Academy of Forensic Engineers, January 2023
- The HIT – the Story Behind the Tony Stewart Incident and How the Experts Stayed in Their “Lanes”, National Academy of Forensic Engineers, January 2023
- Forensic Engineering Analysis, Ethics, and Other Lessons Learned from a Commercial Property Loss, National Academy of Forensic Engineers, January 2023
- Ethics for Engineering, National Academy of Forensic Engineers – 4 hours, January 2022
- Forensic Evaluation and Testing of Existing Site Conditions Related to Personal Injury Claim, National Academy of Forensic Engineers, January 2022
- Borax in a Rail Car resulting in over-turn, National Academy of Forensic Engineers, January 2022
- Self-Loosening Sediment Traps Resulting in Gas Explosions, National Academy of Forensic Engineers, January 2022
- Rules of Thumb for Assessing Engineering Simulation, National Academy of Forensic Engineers, January 2022
- Electric Power Steering and Fault Codes, National Academy of Forensic Engineers, January 2022
- Forensic Inspection of Automotive Braking Systems, National Academy of Forensic Engineers, January 2022
- Pneumatic Brake Force Calculations, National Academy of Forensic Engineers, January 2022.
- Using Finite Element Analysis (FEA) in Forensic Engineering Cases, National Academy of Forensic Engineers, August 2021
- Forensic Investigations of Food Truck Incidents, National Academy of Forensic Engineers, July 2021
- Forensic Engineering Research and Testing of Building Copper Tube Water Piping System Freeze Failures, National Academy of Forensic Engineers, July 2021
- Certified Building Inspection Engineer – Certified by the Building Inspection Engineering Certification Institute
- FE Analysis of a Wheel Spindle Failure due to Pre-Load and Fatigue, July 2019, National Academy of Forensic Engineers
- The Application of Matchmoving for Forensic Video Analysis of a Fatal Sprint Car Accident. Part 1, July 2019, National Academy of Forensic Engineers
- The Application of Matchmoving for Forensic Video Analysis of a Fatal Sprint Car Accident. Part 2, July 2019, National Academy of Forensic Engineers
- FE Analysis of a Crash Caused by Swingout of an Articulated Booster on a Semi-Trailer, July 2019, National Academy of Forensic Engineers

- Forensic Engineering Analysis of Weapons Incidents, July 2019, National Academy of Forensic Engineers
- Forensic Engineering Investigation of the Catastrophic Breakdown of a Diesel Engine and Emergency Generator Set, July 2019, National Academy of Forensic Engineers
- FE Analysis of a Fatal Overhead Crane Accident, July 2019, National Academy of Forensic Engineers
- Forensic Engineering Investigation of a Self-Unloading Boom Collapse on a Great Lakes Freighter, July 2019, National Academy of Forensic Engineers
- Forensic Engineering Investigation and Analysis of Crack Formation in Acetyl Resin Nuts Used for Water Supply Lines, January 2019, National Academy of Forensic Engineers
- A Forensic Analysis of Braided Supply Line Failure, January 2019, National Academy of Forensic Engineers
- Resolving Schedule Delay Claims with Forensic Analysis, January 2019, National Academy of Forensic Engineers
- Electrocutions and Downed Power Lines, January 2019, National Academy of Forensic Engineers
- 2019 Update on Ethics, Law and Public Policy Affecting Forensic Engineers, January 2019, National Academy of Forensic Engineers
- Insurance Fundamentals for Forensic Engineers, January 2019, National Academy of Forensic Engineers
- Trial Testimony – Direct & Cross Examination of Forensic Engineers, July 2018, National Academy of Forensic Engineers
- Forensic Engineer Photography Techniques, July 2018, National Academy of Forensic Engineers
- Crash Testing for Forensic Engineers, July 2018, National Academy of Forensic Engineers
- FE Analysis of Right Turning Trucks Impacting Bicyclists or Pedestrians, July 2018, National Academy of Forensic Engineers
- Forensic Issues that Arise from Recirculating Hot Water Systems, July 2018, National Academy of Forensic Engineers
- FE Analysis of the Energetic Failure of Plastic Pool Chlorinators, July 2018, National Academy of Forensic Engineers
- Machine Safeguarding Theory, Practice and Case Studies, July 2018, National Academy of Forensic Engineers
- Ethics, Forensic Analysis, Evidence Handling, January 2017, National Academy of Forensic Engineers
- FE Analysis Including Clothes Dryers, Buildings, CT Arc Mapping, January 2017, National Academy of Forensic Engineers
- Ethics, Forensic Engineering, Analytical Techniques, June 2016, National Academy of Forensic Engineers
- Application of Engineering in the Jurisprudence System, June 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of Heating Fuel Consumption and Temperature Setting, June 2016, National Academy of Forensic Engineers
- Two Case Studies on Using Fatigue and Corrosion Analysis in Forensic Engineering, June 2016, National Academy of Forensic Engineers
- Solid Fuel Burning Appliance Fire Investigations, June 2016, National Academy of Forensic Engineers
- Ethics, Forensic Engineering, Analytical Techniques, January 2016, National Academy of Forensic Engineers
- BioMedical Engineering Evidence-Based Analytical Methods, January 2016, National Academy of Forensic Engineers
- Forensic Engineering of Personal Watercraft Off-Throttle Steering Accidents, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of Failed UTV Roll Cages, January 2016, National Academy of Forensic Engineers

- The Sequence of Event Analysis for Accident Reconstruction Computer Assisted, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of Video-Captured Pedestrian Collisions, January 2016, National Academy of Forensic Engineers
- Landfill Operations and Bulldozer Visibility Impairment Defects, January 2016, National Academy of Forensic Engineers
- General Topics in Forensic Engineering, January 2016, National Academy of Forensic Engineers
- Forensic Considerations Regarding Traction and Tribometry of Bathing Surfaces, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of a Sequence of Power Infrastructure Failures atop an Office Building, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Investigation of PVC Piping Failures in Multistory Condominium Building, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of a Shopping Mall Explosion, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of the Instability of a Wheeled Cart Used to Move a Large Sculpture, January 2016, National Academy of Forensic Engineers
- Forensic Engineering Analysis of Unvented Gas Appliances in High Altitudes, January 2016, National Academy of Forensic Engineers
- Application of Engineering in the Jurisprudence System, July 2015, National Academy of Forensic Engineers
- Ethics, Fall Protection, Analytical Techniques, July 2015, National Academy of Forensic Engineers
- Plastics: The Types and Roles it Plays in Investigations, May 2015, International Association of Arson Investigators International Training Conference
- Statistical Validity in Low-Speed Vehicle Impacts, January 2015, National Academy of Forensic Engineers
- Force Deflection and work/Energy Principles for "Missing Stiffness" Vehicle Impact Analysis, January 2015, National Academy of Forensic Engineers
- Vehicle Suspension Design and Related Tire Damage, January 2015, National Academy of Forensic Engineers
- Application of Engineering in the Jurisprudence System, January 2015, National Academy of Forensic Engineers
- Ethics, Rules and Laws, Daubert-Proofing & Unreasonable Dangerous Products, January 2015, National Academy of Forensic Engineers
- Forensic Engineering Technical Presentation, July 2014, National Academy of Forensic Engineers
- General Topics for Forensic Engineers, January 2014, National Academy of Forensic Engineers
- Ethics, Use & Misuse of Standards and Building Codes for Forensic Engineers, January 2014, National Academy of Forensic Engineers
- Advanced Accident Reconstruction Seminar, July 2013, National Academy of Forensic Engineers
- General Topics in Forensic Engineering, July 2013, National Academy of Forensic Engineers
- Failure Analysis: The Science of What Went Wrong - Techniques, Fractography, Polymer Failure, Fire and Explosions, March 2013, American Society of Mechanical Engineers
- General Topics in Forensic Engineering, January 2013, National Academy of Forensic Engineers
- Ethical Considerations for Forensic Engineers, January 2013, National Academy of Forensic Engineers
- Reports, Affidavits, Depositions, Court Test & Ethics, January 2012, National Academy of Forensic Engineers

- General Topics in Forensic Engineering, January 2012, National Academy of Forensic Engineers
- HVAC 101 – Residential HVAC Systems, December 2011, Indoor Air Quality Association
- CSST Failures/Lightning Webinar, June 2011, NASP
- Reports, Harassment, Contracts & Challenges, January 2011, National Academy of Forensic Engineers
- General Topics in Forensic Engineering, January 2011, National Academy of Forensic Engineers
- Advanced Topics in Accident Reconstruction, July 2010, National Academy of Forensic Engineers
- General Topics in Forensic Engineering, July 2010, National Academy of Forensic Engineers
- Investigation of Gas and Electric Appliance Fires, November 2009, Fire Findings
- Indoor Air Quality with a Focus on New Technologies in HVAC, September 2009, Indoor Air Quality Council
- Geothermal Heat Pumps, October 2007, Red Vector
- Plumbing: Lift Stations, Pipes, Vents, Drain Lines and Septic Systems, October 2007, Red Vector
- Plumbing: Roughing & Repair Information, September 2007, Red Vector
- Electric Motors, August 2007, Red Vector
- Vehicle Accident Reconstruction Methods, August 2007, Society of Automotive Engineers
- HVAC Systems and Indoor Air Quality, February 2007, American Indoor Air Quality Council
- Indoor Air Quality HVAC Systems and Common Measurements, February 2007, Red Vector
- Product Liability, April 2000, Investigative Engineers Association
- Suppression Systems and Extinguishers, April 2000, Investigative Engineers Association
- Traffic Accident Reconstruction, April 2000 and May 2001, Investigative Engineers Association
- Accident Investigation, Speed from Crash and Skid, Computer Reconstruction, March 1999, Investigative Engineers Association
- Accident Reconstruction Using Conservation of Momentum and Energy, December 1998, Society of Automotive Engineers

Fire Investigation

Over 20 years of experience with origin and cause of fire investigations, explosions, fire suppression systems, HVAC equipment, fireplace, and auxiliary heating products. Supervision of fire investigators and technical review of fire investigation reports, along with completing origin and cause investigations.

Qualifications and Training:

- Lightning Fundamentals, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., August 2025.
- Lightning Fire Cause Investigation, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., August 2025.
- Electric & Hybrid Vehicle Fires, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Alternative Fuel Vehicles, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Introduction to Appliances, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Motor Vehicles: Transmission, Exhaust, Brake, and Accessory Systems, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Motor Vehicles: The Engine and the Ignition, Electrical, and Fuel Systems, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Commercial Kitchen Fires 1: Fundamentals, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.

- Commercial Kitchen Fires 2: Investigation, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Introduction to Youth-Set Fires, 3 Hour Tested Training Program, International Association of Arson Investigators, Inc., April 2025.
- Charleston Sofa Super Store Fire, 4 Hour Tested Training Program, International Association of Arson Investigators, Inc., March 2025.
- An Analysis of The Station Nightclub Fire, 4 Hour Tested Training Program, International Association of Arson Investigators, Inc., March 2025.
- IN24ATC, International Association of Arson Investigators, Inc., August 2024, 24 hours (tested)
- Fire Investigation Master Class, Unlocking the Power of AI in Forensic Fire Scene Assessments - The Kirk's Fire Analysis™ Approach, IRIS Fire Investigations, 24 hours, March 2024
- IN 2022 FIC, Completed 23 Hour Tested Training Program, 23rd Indiana Fire Investigation Conference, IAAI – Indiana Chapter
- Computer Fire Modeling and the Law: Application to Forensic Fire Engineering Investigations, National Academy of Forensic Engineers, January 2022
- Nederveld Fire Investigation Team Training – Vehicle Fires, 8 Hour Tested, September 2021
- IN 2021 FIC, 24 Hour Tested Training Program, 22nd Indiana Fire Investigation Conference, including Fire Dynamics, Electricity and Heat, NFPA and Fire Investigation, Improving Fire Investigator Health and Safety, August 2021
- Certified Fire Investigator, Certified by the International Association of Arson Investigators. Certificate No. 05-080331 - Expires: 8/3/2030
- Certified Fire and Explosion Investigator (CFEI), Certified by the National Association of Fire Investigators
- Certified Vehicle Fire Investigator (CVFI), Certified by the National Association of Fire Investigators
- Certified Fire Investigator, Certified by the National Board on Fire Service Professional Qualifications
- NFPA 921: 2021 Updates and Case Study Review tested, October 2020, Nederveld U
- IAAI Indiana Fire Investigation Conference, 24 hours, August 2019
- Fire Investigation Technology (NFPA 1033, #11) and Fire Analysis (NFPA 1033, #9), July 2019, National Academy of Forensic Engineers
- Fire Science (NFPA 1033, #1) and Thermodynamics (NFPA 1033, #3), July 2019, National Academy of Forensic Engineers
- Fire Chemistry (NFPA 1033, #2), Thermometry (NFPA 1033, #4), and Fire Dynamics (NFPA 1033, #5), July 2019, National Academy of Forensic Engineers
- Explosion Dynamics (NFPA 1033, #6), July 2019, National Academy of Forensic Engineers
- Fire Protection Systems (NFPA 1033, #14) and Hazardous Materials (NFPA 1033, #12), July 2019, National Academy of Forensic Engineers
- Electricity and Electrical Systems (NFPA 1033, #16), July 2019, National Academy of Forensic Engineers
- Evidence Documentation, Collection, Preservation (NFPA 1033, #15), July 2019, National Academy of Forensic Engineers
- Failure analysis (NFPA 1033, #13), July 2019, National Academy of Forensic Engineers
- The Status of Arc Mapping, January 2019, National Academy of Forensic Engineers
- Solar Fires, Melted Vinyl Siding and Other Ramifications from Concentrated Reflected Sunlight from Low-E Glass Windows, Skylights and Atrium Glass, January 2019, National Academy of Forensic Engineers
- Pinched Power Cord is Latent Defect Causing Fire When Appliance is Not in Use, January 2019, National Academy of Forensic Engineers
- The Kaprun Ski Train: A Disaster Waiting to Happen, January 2019, National Academy of Forensic Engineers
- Michigan State Police – FIU In-Service, July 2017

- Ventilation Flow Paths and Fire Growth: Understanding the Modern Fire Environment, Kalamazoo County Fire Chief's Association and Bureau of ATF Fire Research Laboratory and National Response Team, Kalamazoo Valley Community College, 7 hours, June 2017
- Forensic Engineering Analysis of a Home Fire, June 2016, National Academy of Forensic Engineers
- Recognizing Errors and Crafting Solutions in Fire Investigations, November 2015, International Association of Fire Investigators
- International Association of Arson Investigators International Training Conference, May 2015, Chicago, IL
- The Forensic Engineer's Involvement in Fire Investigation – NFPA 921 and Beyond, July 2014, National Academy of Forensic Engineers
- The Practical Application of the Relationship Between NFPA 1033 and NFPA 921, February 2014, CFI Trainer and International Association of Arson Investigators
- Failure Analysis: The Science of What Went Wrong - Techniques, Fractography, Polymer Failure, Fire and Explosions, March 2013, American Society of Mechanical Engineers
- Investigation of Gas and Electric Appliance Fires, November 2009, Fire Findings
- Expert Witness Courtroom Testimony Course, February 2009, International Association of Arson Investigators
- The Scientific Method for Fire and Explosion Investigation, January 2009, CFI Trainer and International Association of Arson Investigators
- Understanding Fires Through the Candle Experiments, January 2009, CFI Trainer and International Association of Arson Investigators
- Postflashover Fires, December 2008, CFI Trainer and International Association of Arson Investigators
- Geothermal Heat Pumps, October 2007, Red Vector
- Electric Motors, August 2007, Red Vector
- Vehicle Fire, Arson and Explosion Scene, and Technology Seminar, October 2002, National Association of Fire Investigators
- Advanced Fire, Arson, and Explosion Investigation, March 2002, National Association of Fire Investigators
- Vehicle Fire Investigations, May 2001, Investigative Engineers Association
- Product Liability, April 2000, Investigative Engineers Association
- Suppression Systems and Extinguishers, April 2000, Investigative Engineers Association
- Fire Investigation, March 1999, Investigative Engineers Association

Building Pathology

Including work with origin and cause of water determinations, microbial growth and testing, HVAC systems, psychrometric studies, roofs, attics and foundations.

Qualifications and Training:

- CBIE – Certified Building Inspection Engineer, *Certification held under continuing legacy maintenance by the National Academy of Building Inspection Engineers (NABIE)*
- Over 20 years of experience involving inspections of commercial, industrial and residential structures
- Certified Microbial Consultant (CMC), Council-Certified by the American Council for Accredited Certification (ACAC) – Accredited by the Council for Engineering and Scientific Specialty Boards (CESB)
- Certified Microbial Remediation Supervisor (CMRS), Council-Certified by the American Council for Accredited Certification (ACAC) – Accredited by the Council for Engineering and Scientific Specialty Boards (CESB)
- Mold and Health Effects Webinar, October 2014, EMLab P&K
- Mold Investigation Strategies Webinar, September 2014, EMLab P&K
- Vapor Barriers, June 2013, Indoor Air Quality Association Webinar
- Fungal Data Interpretation, June 2013, EMLAB P&K Webinar

- Recent Developments with Mold: Scientific, Medical and Legal, May 2013, Indoor Air Quality Association - Chicago Chapter
- BSCI 104 – Managing Moisture II, December 2011, Indoor Air Quality Association
- BSCI 103 – Managing Moisture I, December 2011, Indoor Air Quality Association
- BSCI 102 – Using the Psychrometrics Chart, November 2011, Indoor Air Quality Association
- BSCI 101 – Introduction to Psychrometrics, October 2011, Indoor Air Quality Association
- CSST Failures/Lightning Webinar, June 2011, NASP
- IAQ/IH Sampling Workshop, April 2011, EMSL Analytical, INC
- Asbestos and Lead Awareness, May 2010, MIOSHA Training Institute
- Basement Waterproofing and Radon Mitigation, December 2009, American Indoor air Quality Council
- Indoor Air Quality with a Focus on New Technologies in HVAC, September 2009, Indoor Air Quality Council
- EPA Mold Web Course, December 2007, American Indoor Air Quality Council
- Building Pathology: Materials Pathology, November 2007, Red Vector
- Building Pathology: Freeze-Thaw Cycling, November 2007, Red Vector
- IICRC S500-2006 Standard and Reference Guide review and exam, July 2007, American Indoor Air Quality Council
- IICRC S520 Standard and Reference Guide review and exam, July 2007, American Indoor Air Quality Council
- HVAC Systems and Indoor Air Quality, February 2007, American Indoor Air Quality Council
- Indoor Air Quality HVAC Systems and Common Measurements, February 2007, Red Vector
- Air, Water and Moisture Management in Building Envelopes, July 2004, American Indoor Air Quality Council
- American Indoor Air Quality Workshops, June and October 2003
- Mold and Indoor Air Quality, May 2001, Investigative Engineers Association

Civil Engineering

Including work with site grading, earth balance, soil stabilization, road design, drainage, hydrology, sanitary sewer, water main and storm sewer systems and pumping stations.

Qualifications and Training:

- 15 years of experience in design engineering and project management including work with road design and site design with hydrology, earth balance and utility design permitting.
- Gas Well Integrity and Associated Gas Migration Investigations in the Marcellus Shale, January 2016, National Academy of Forensic Engineers
- Design of Small Diameter Sanitary Sewer Systems, 1990, University of Wisconsin
- Design and Hydraulic Analysis of Bridge and Culverts, 1991 Lansing, Michigan
- Design and Modeling Storm Water Detention Basins, 1992, University of Wisconsin
- Slip and Fall Investigations, April 2000, Investigative Engineers Association

Education

Bachelor of Science in Mechanical Engineering
University of Michigan, Ann Arbor, MI
December 1987

Licenses & Certifications

PE – Professional Engineer

Licensed by the State of Michigan – Number 6201038288
Licensed by the State of Colorado – PE.0058077
Licensed by the State of Illinois – Number 062-057414
Licensed by the State of Indiana – Number PE10403502
Licensed by the State of Iowa – Number P21732
Licensed by the State of Kentucky – Number 28914

Licensed by the State of Minnesota – Number 54247
 Licensed by the State of Missouri – Number 2014023037
 Licensed by the State of New York – License 111566-01
 Licensed by the State of Ohio – Number 68872
 Licensed by the State of Pennsylvania – Number PE088344
 Licensed by the State of Tennessee – Number 117139
 Licensed by the State of West Virginia – Number 21728
 Licensed by the State of Wisconsin – Number 39419-006

NAFE – National Academy of Forensic Engineers, Senior Member, Board Certified Diplomate in Forensic Engineering by NAFE, a (CESB) Council of Engineering and Scientific Specialty Boards Member Board
 CBIE – Certified Building Inspection Engineer, *Certification held under continuing legacy maintenance by the National Academy of Building Inspection Engineers (NABIE)*
 CFI – Certified Fire Investigator, Certified by the International Association of Arson Investigators, Inc.
 CFEI – Certified Fire and Explosion Investigator, Certified by the National Association of Fire Investigators
 CVFI – Certified Vehicle Fire Investigator, Certified by the National Association of Fire Investigators
 NBFSPQ – Certified Fire Investigator, Certified by the National Board of Fire Service Professional Qualifications
 CMC – Certified Microbial Consultant, Council-Certified by the American Council for Accredited Certification (ACAC) – Accredited by the Council for Engineering and Scientific Specialty Boards (CESB)

Employment History

President, Board Chair, Senior Principal, and Senior Forensic Engineer
 Nederveld, Inc.
 2003 – Present

Serve on the Board of Directors; Director of Forensic Engineering and Fire Investigation Department; Conduct Forensic Engineering and Fire Investigations

Vice President, Senior Principal
 Nederveld, Inc.
 1998 – 2003

Serve on the Board of Directors; Director of Engineering Department; Oversee and Conduct Forensic Engineering and Fire Investigations.

Vice President, Senior Principal
 Nederveld, Inc.
 1992 – 1998

Serve on the Board of Directors and as the lead engineer with expertise in geometric design, road design, site design, grading, culverts, hydrology, sanitary sewer systems, storm sewers, and pumping stations.

Project Engineer
 Nederveld, Inc.
 1987 – 1992

Duties included surveying and land mapping, geometric design, design of roads, culverts, sanitary sewer systems, water mains, storm sewers, and pumping stations.

Part-Time Employment
 Nederveld, Inc.
 1980 – 1987

Gained experience as mortgage survey crew chief and with topographical mapping, drafting, map generation, and site civil engineering.

Professional Affiliations

Member: National Society of Professional Engineers
 Member: Senior - National Academy of Forensic Engineers
 Director: BOD - National Academy of Forensic Engineers (Treasurer)
 Member: American Society of Mechanical Engineers
 Member: International Association of Arson Investigators
 Member: National Association of Fire Investigators, International
 Member: National Fire Protection Association
 Member: American Indoor Air Quality Association
 Member: Executive level Member of the National Academy of Building Inspection Engineers
 Member: ASTM E-58 Forensic Engineering Technical Committee
 Past Member: American Society of Civil Engineers
 Past President, Vice President, and Treasurer of Western Michigan Branch

Expert Witness Experience

Trials

April 2016

Scottsdale Insurance Company a/s/o Basketball America, Inc. vs Charter Township of Orion, All Building Services, LLC, William Mathisen, and Unknown Claimants and Owners
 Expert Witness for All Building Services, LLC, and William Mathisen on behalf of Law Offices of Catherine Gofrank
 Oakland County Circuit Court Case # 2013-134852-CZ

April 2015

Livingston Center of Allergy, Sinus, and Asthma, PC, Dranna, LLC, and Pediatric Associates of Livingston, PLLC vs Village and Country Water Treatment, Inc dba Clearwater Systems, and Ibdan Plumbing Company
 Expert Witness for Ibdan Plumbing Company on behalf of Law Offices of Catherine Gofrank
 Livingston County Circuit Court # 13-27478-ND

November 2012

Access-Ability Inc, vs Farm Bureau General Insurance Company of Michigan
 Expert Witness for Farm Bureau on behalf of Stertz & Weaver
 Michigan 42nd Judicial Circuit Court Case 11-7701-CZ-1

June 2006

John Edward Willett vs Dale and Beth Corlew
 Expert Witness for John Edward Willett on behalf of Kraayeveld Law Offices
 Ottawa County Circuit Court # 02-44032-CK

October 2003

Brian Tuttle vs Knoll Construction Inc, James Knoll and Rycenga Homes
 Cynthia Groom et al vs Knoll Construction Inc, James Knoll and Rycenga Homes
 Expert Witness for Rycenga Homes on behalf of Thomas P. Murray
 Ottawa County Circuit Court # 01-39926-CH and # 01-41216-CH

January 1995

Charter Township of Grand Haven vs. D&U Development
 Expert Witness for D&U Development on behalf of James Bidol
 Ottawa County Circuit Court # 9318578CC

Arbitration

January 2008

Frederick Wolfgang Industries LLC vs AJ Veneklasen Inc.

Expert Witness for AJ Veneklasen Inc. on behalf of Smith Haughey Rice & Roegge

American Arbitration Association Number 54 110 01269 06

March 2006

Thalia A Bohlen, personal rep. for the estate of Clinton M Bohlen, deceased vs. Annette P Lopo and Genevieve V Klamert

Expert Witness for Genevieve V Klamert on behalf of Battalucco Hughes and Brasic

Alcona County Circuit Court # 05-465-NI

Depositions

October 2021

Meemic Insurance Company, as Subrogee of Katie Valasek vs Alan Wallace, Luma Insulation, Inc., Morris Heating and Cooling, and Buzby Builders.

Expert Witness for Hastings Mutual Insurance Company on behalf of Hewson & VanHelleMont, PC, Video Deposition

State of Michigan, 39th Circuit Court, Case No. 20-6473-NZ

February 2019

The Cincinnati Insurance Company a/s/o George Lewis vs Nugent Maintenance Service, LLC, and Water Clinic Pool & Spa Center, Inc., and Nye Plumbing and Heating

Expert Witness for The Cincinnati Insurance Company on behalf of Law Offices of Robert A Stutman PC

United States District Court Civil Action # 1:17-CV-1039

January 2017

EMC Insurance Companies a/s/o Madison Academy vs Total Fire Protection, Inc. dba Reliable Fire Protection, Inc.

Expert Witness for Total Fire Protection, Inc. on behalf of Law Offices of Catherine GoFrank

Genesee County Circuit Court Case No. 14-10317-NZ

Video Deposition for Trial

November 2016

Christy Whitt Galford, as Personal Representative of The Estate of Thomas Howard Galford, Deceased vs R&R Drywall & Insulation, Inc.

Expert Witness for the Defense

Clare County Circuit Court # 15-900462-NO

April 2016

John Ray Walker, Administrator of the Estate of James Daniel Walker, Deceased vs Bagshaw Trucking, Inc. Jonathan Denning, and The Goodyear Tire and Rubber Company, Inc.

Expert Witness for Bagshaw Trucking, Inc. on behalf of Gwin Steinmetz & Baird, PLLC

United States District Court Case # 3:14-CV-14

December 2015

Scottsdale Insurance Company a/s/o Basketball America, Inc. vs Charter Township of Orion, All Building Services, LLC, William Mathisen, and Unknown Claimants and Owners

Expert Witness for All Building Services, LLC, and William Mathisen on behalf of Law Offices of Catherine Gofrank

Oakland County Circuit Court Case # 2013-134852-CZ

December 2015

Rick J Pesta vs Farm Bureau Insurance Company
Expert Witness for Farm Bureau Insurance Company on behalf of Willison Hellman PC
Muskegon County Circuit Court Case # 14-49775-CZ

October 2015
Forbes Management, Inc. vs Powierski Plumbing and Heating Contractors, Inc.
Expert Witness for Forbes Management, Inc. on behalf of Law offices of Catherine GoFrank
Wayne County Circuit Court # 14-015393-CZ

September 2015
John Ray Walker, Administrator of the Estate of James Daniel Walker, Deceased vs
Bagshaw Trucking, Inc. Jonathan Denning, and The Goodyear Tire and Rubber Company,
Inc.
Expert Witness for Bagshaw Trucking, Inc. on behalf of Gwin Steinmetz & Baird, PLLC
United States District Court Case # 3:14-CV-14

August 2015
Salem Dekhou and Vivian Dekhou vs Allstate Property and Casualty Insurance Company
Expert Witness for Allstate Property and Casualty Insurance Company on behalf of Patrick,
Johnson & Mott, PC
United States District Court Case # 2:15-cv-10465

October 2014
Livingston Center of Allergy, Sinus, and Asthma, PC, Hartford Casualty Insurance Company
a/s/o Livingston Center of Allergy, Sinus, and Asthma, PC, Dranna, LLC and Sentinel
Insurance Company a/s/o Penny S Baumeier, DO, PLLC, dba Pediatric Associates of
Livingston, LLP vs Village and Country Water Treatment, Inc dba Clearwater Systems, and
Ibdan Plumbing Company
Expert Witness for Ibdan Plumbing Company on behalf of Law Offices of Catherine Gofrank
Livingston County Circuit Court # 13-27478-ND

July 2014
Citizens Insurance Company of America a/s/o David Cochrell vs Lane Pritchard d/b/a Lane
Co Services
Expert Witness for Citizens Insurance Company of America on behalf of Black & Moss PC
Kent County Circuit Court # 13-11576-NZ

January 2014
Eastern Avenue Church of Christ vs Guideone Elite Insurance Company
Expert Witness for Eastern Avenue Church of Christ on behalf of Bolhouse, Baar & Lefere
PC
Kent County Circuit Court # 12-11549-CZB

May 2013
David Herriott vs Arlington Pointe, LLC et al
Expert Witness for David Herriott on behalf of Colley, Shroyer & Abraham
Franklin County Court of Common Pleas # 12CV-04-4432

April 2013
Citizens Insurance a/s/o Asheesh Goel vs Advanced Building and Construction LLC
Expert Witness for Citizens Insurance on behalf of Blake, Kirchner, Symonds, Larson,
Kennedy & Smith PC
Allegan County Circuit Court # 12-50232 CZ

September 2012

Auto Owners Insurance a/s/o Michael & Valerie Feehan vs Lameyer Plumbing Inc et al
Expert Witness for Lameyer Plumbing on behalf of Michigan Insurance/Attorney Henry
Emrich, Secrest Wardle
Kent County Circuit Court # 11-09371-CZ

September 2012
Ruth Walkotten and Catherine Prenkert vs Mark Beegel dba Beegle Excavating
Expert Witness for Beegle Excavating on behalf of Smith Haughey Rice & Roegge
Muskegon County Circuit Court Case# 10-47552-CH

August 2012
USAA v JCS Fireplace Inc
Expert Witness for JCS Fireplace Inc on behalf of Secrest Wardle Michigan 43rd Judicial
Circuit Court Case 09-000005-NZ

May 2012
Hartford, Subrogee of Earnest and Sheila Christian v Michael Fisher Builders LLC d/b/a
Dream Maker Kitchen and Bath
Expert Witness for Michael Fisher Builders LLC on behalf of Bodwin and Associates, PC
Ingham County Circuit Court Case# 11-296-CK

January 2011
Donald Hayati et al v Zeigler Construction et al
Expert Witness for Plaintiff/Central Insurance Company on behalf of Munck Carter, LLP
Fulton County Ohio Court of Common Pleas Case # 09CV000032

May 2010
James P. Avink, Sr., Estate of James P. Avink, Jr., v SMG, Electric Power Door, Inc., and
Overhead Door Company of Grand Rapids
Expert Witness for Electric Power Door, Inc. on behalf of Bensinger Cotant & Menkes, PC
Kent County Circuit Court Case # 06-10850-NO

May 2010
Steven S. Bibbee and Luanne Bibbee v State Farm Insurance Company, Richard Rykens,
Paul Davis Restoration, Inc., and Belfor USA
Expert Witness for Paul Davis Restoration, Inc. on behalf of Bodwin & Stover, PC
Livingston County Circuit Court # 09-24135-ND

November 2008
Auto-Owners, Subrogee of Thomas and Kimberly Stotts vs Bel-Aire Heating & Air
Conditioning of South Haven
Expert Witness for Thomas and Kimberly Stotts on behalf of Early, Lennon, Crocker &
Bartosiewicz, PLC
Van Buren County Circuit Court # 07-56-240-CZ

May 2008

George McLain and Laurie McLain v Michael Luma dba Luma Insulation and Hastings Mutual Insurance Company
Expert Witness for Michael Luma on behalf of Bodwin & Stover, PC
Jackson Circuit Court # 07-2266-CH

December 2007

Frederick Wolfgang Industries LLC vs AJ Veneklasen Inc.
Expert Witness for AJ Veneklasen, Inc., on behalf of Smith Haughey Rice & Roegge
American Arbitration Association Number 54 110 01269 06

November 2006

Borgman v Carteng
Expert Witness for Martin Carteng on behalf of Thomas P. Murray
Kent County Circuit Court # 05-12479-NI

November 2006

Christopher Richmond vs Allied Insurance Company
Expert Witness for Allied Insurance Company on behalf of Hopkins Curran & Smith, PLLC
Jackson County Circuit Court # 04-3029-NZ

September 2006

Auto-Owners Insurance Company a/s/o Oscar & Glenna Schumacher vs Patriot Homes Inc. and Fremont Homes, Inc.
Expert Witness for Auto-Owners Insurance Company on behalf of Strain, Murphy & VanderWal, PC
Newaygo County Circuit Court # 05-18958-CZ

December 2005

Thalia A Bohlen, personal rep. for the estate of Clinton M Bohlen, deceased vs. Annette P Lopo and Genevieve V Klamert
Expert Witness for Genevieve V Klamert on behalf of Battalucco Hughes and Basic
Alcona County Circuit Court # 05-465-NI

November 2005

Fink vs Cliffs on the Point Phase III Associates et al
Expert Witness for Margaret and James Fink on behalf of Mancini, Schreuder, Kline, and Conrad, PC
Washtenaw County Circuit Court # 03-1152-NO

October 2005

Hastings Mutual Insurance Company vs William D Snyder et al
Expert Witness for Hastings Mutual Insurance Company on behalf of Logan & Associates
Grand Traverse County Circuit Court # 05-24484-CZ

June 2005

Askren et al vs Sunset Landings Apartments
Expert Witness for Askren et al on behalf of Conybeare Law Offices
Berrien County Circuit Court # 2004-3299

April 2004

Bidwell and Boley Inc. vs Bradley Environmental, et al
Expert Witness for Bidwell and Boley, Inc. on behalf of Thomas P. Murray, Jr. and Associates

Calhoun County Circuit Court # 02-4802-CH

September 2002

Kedo, Elser, Otto and Wirebaugh vs Bidwell and Boley, Inc.

Expert Witness for Bidwell and Boley, Inc. on behalf of Thomas P. Murray, Jr. and Associates

Calhoun County Circuit Court #00-4389-CH

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