Preston Scarber, Jr., Ph.D., P.E.

Principal Consultant

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Background

Dr. Preston Scarber, Jr., has a doctorate in materials engineering from the University of Alabama at Birmingham. Dr. Scarber has over 15 years of experience as a forensic engineer in both materials and vehicle accident reconstructions. Dr. Scarber is currently licensed in five states and has an extensive testimony history. There are currently 16 publications attributed to Dr. Scarber, and he has attended and instructed numerous classes for both materials and vehicle accident reconstructions.

Professional Engagements

- **Vehicle Accident Reconstruction**
  - Truck-Van Accident - Livingston, AL, A truck and passenger van were traveling east on an interstate when they collided in the early morning hours, resulting in one serious injury. Analysis of the truck showed that the driver was not fully alert while driving, which caused the accident.
  - Truck-Car Accident - Kosciusko, MS, A truck and passenger car were traveling north on an interstate when they collided in the early evening hours, resulting in two fatalities. Analysis of the truck and electronic evidence showed that the driver was very distracted while driving, which caused the accident.
  - Car-Car Accident – Berkeley Township, NJ, A pickup truck and passenger car collided at an intersection and the pickup ended up on its side. The pickup driver accused the car driver of speeding and running through the Stop sign. Momentum analysis of the vehicle masses and final rest positions showed that the pickup driver was actually speeding at almost twice the limit, which caused the accident.
  - Truck-Car Accident - Jackson, MS, A truck and passenger car were traveling north on an interstate when they collided in the early evening hours, with the car driver accusing the truck driver of following too closely and speeding. Analysis of the truck and electronic evidence showed that the car driver was driving 30 miles per hour over the speed limit and swerved in front of the truck before impact, which caused the accident.

- **Failure Analysis**
  - Cardboard Factory Explosion - St. Louis, MO, A boiler at a cardboard manufacturing plant exploded and launched itself several hundred feet, resulting in five fatalities. Analysis of the boiler remnants and welds showed improper steam cycle storage techniques and poor weld repairs, leading to accelerated high-temperature corrosion and explosive decompression, which caused the accident.
  - Roof Hatch Injury - Mobile, AL, A hotel maintenance contractor was knocked off the roof access ladder when the roof hatch door collapsed on top of him, resulting in serious injury. Analysis of the roof hatch hinge and

hatch design revealed that a torsion counterweight spring had been removed sometime after hatch installation, which caused the accident.

- Carbon Monoxide Poisoning from Portable Generator – Jacksonville, FL, A family was using a portable generator outside of the front door of their house after a hurricane in 2016 knocked out power. Analysis of exhaust gas flow showed improper warnings and generator placement during operation, leading to accelerated high-concentration of toxic gas levels, which caused the accident.
- Knee-Walker Failure - Montgomery, AL, A patient recovering from knee replacement surgery was using a knee-walker in a parking lot when the walker broke, causing the patient extensive injuries. Analysis of the walker revealed extensive fatigue cracking and an overall poor design, which caused the accident.
- Truck Crane Failure - Brookwood, AL, A mine worker was using a truck-mounted crane to lift a bulldozer engine for replacement when the boom separated from the base, killing the worker. Analysis of the crane base revealed that the main bearing fractured, which should normally never happen. Chemical analysis of the bearing showed that it had the wrong chemistry for a bearing design, good hardness but inadequate yield and tensile strength, which caused the accident.

Forensic Engagements

- **Continuous Casting of Steel – Variance Study for Start-Up**
  - Production Cycle Evaluation – Tuscaloosa, AL (2015), Evaluate statistical drift in mechanical properties during production cycles. Drift was beyond accepted properties for profitability.

- **Pressurized Cooker Design Evaluation**
  - Mechanical Design – Birmingham, AL (2018), Determined that some “Instant Pot” designs were unsafe because the user is not informed of the pressurization level.

Professional Experience

- **Rimkus** **2025 – Present**
  - Principal Consultant
    Principal investigator for civil legal cases for either plaintiff or defense for product liability, engineering design, product labeling, accident reconstruction, and human factors; provides courtroom testimony.

- **ARCCA, Inc.** **2023 – 2025**
  - Senior Forensic Engineer
    Principal investigator for civil legal cases for either plaintiff or defense for product liability, engineering design, product labeling, accident reconstruction, and human factors; provided courtroom testimony.

- **Vista Engineering** **2009 – 2023**
  - Senior Forensic Engineer
    Principal investigator for civil legal cases for either plaintiff or defense for product liability, engineering design, accident reconstruction, and human factors; provided courtroom testimony.

Education and Certifications

- **Materials Engineering, B.Sc.:** University of Alabama at Birmingham (1992)
- **Materials Engineering, M.Sc.:** University of Alabama at Birmingham (1996)
- **Materials Engineering, Ph.D.:** University of Alabama at Birmingham (1998)
- **Licensed Engineer:** Alabama, Arkansas, Kentucky, Mississippi, and Tennessee
- **Membership:** Society of Automotive Engineers; National Society of Professional Engineers

Continuing Education

- **Driver Research Institute:** Human Factors for Traffic Reconstruction (2017)
- **Institute of Police Technology & Management (IPTM):** Advanced Crash Investigation (2015); At-Scene Traffic Crash/Traffic Homicide Investigation (2014)
- **McKissock:** Fundamentals of Gaskets for Professional Engineers (2024); Fundamentals of Solar Energy (2024); Fundamentals of Valves for Professional Engineers (2024)
- **National Association of Professional Accident Reconstruction Specialists (NAPARS):** Tire Forensics – TJ Tennett (2021); Heavy Vehicle EDR Analysis – Charlotte, NC (2019); Event Data Recorder in Traffic Crash Reconstruction: Update and Advanced Analysis Techniques - Gulf Breeze, FL (2018)
- **National Society of Professional Engineers:** Climate Action for Engineers: ACC Overview (2022)
- **SEAK Expert Witness Directory:** National Expert Witness Conference (2017)

Publications and Presentations

- P. Scarber, Jr., **"Modified Graphitic Iron – Now What?,"** Ductile Iron Society Keith Millis Symposium – Keynote Address, AFS 2008.
- P. Scarber, Jr. and H. Littleton, **"Simulating Macro-Porosity in Aluminum Lost Foam Castings,"** AFS 2008.
- P. Scarber, Jr. and C.E. Bates, **"Simulation of Core Gas Production During Mold Fill,"** AFS 2006.
- P. Scarber, Jr., C.E. Bates, and J. Griffin, **"Effects of Mold and Binder Formulations on Gas Evolution When Pouring Aluminum Castings,"** AFS 2006.
- P. Scarber, Jr., **"Gaseous Defects in Castings,"** Foundry Management and Technology, 2005.
- P. Scarber, Jr. and W. Sun, **"Watching Defects Form,"** Ductile Iron Society Technical and Operators Conference, 2003.
- P. Scarber, Jr., **"Using Gating Design to Minimize and Localize Reoxidation",** SFSA Technical and Operating Conference, October 2002.
- P. Scarber, Jr., **"The Effect of Gating and Pouring Practice on Reoxidation in Steel Castings,"** SFSA Technical and Operating Conference, October 2001.
- P. Scarber, Jr. and G.M. Janowski, **"Finite Element Analysis of Reinforcement Particle Cracking in Al/SiCP Composites,"** Materials Science and Technology, October 2001.
- P. Scarber, Jr., **"Computer-Based Simulations of Liquid Metal Alloy Interactions with Air During Mold Fill of Castings,"** accepted for publication in International Journal of Cast Metals Research, 2001.
- P. Scarber, Jr., **"Using Liquid Free Surface Area as a Predictor of Reoxidation Tendency in Metal Alloy Castings,"** SFSA Technical and Operating Conference, October 2000.
- P. Scarber, Jr., **"Gating Design in Steel Castings,"** SFSA Technical and Operating Conference, November 1999.
- P. Scarber, Jr. and G.M. Janowski, **"The Effects of Reinforcement Shape and Volume Fraction on Residual Stress and Particle Cracking in Al/SiCp Composites"**, Modeling and Composites: Properties and Processing, Edited by Shao Ping Chen and Michael Paul Anderson, TMS-AIME, 1996, pp. 57-75.
- P. Scarber, Jr. and G.M. Janowski, **"The Effect of Reinforcement Particle Cracking on the Matrix Stress and Strain Behavior in Al/SiCP Composites,"** in preparation for Materials Science and Technology.
- P. Scarber, Jr. and G.M. Janowski, **"Finite Element Analysis of the Stress and Strain Distribution in Al/SiCP Composites,"** in preparation for Metallurgical Transactions B.
- Robin D. Griffin, Preston Scarber, Jr., Gregg M. Janowski, and Charles E. Bates, **"Quantitative Characterization of Graphite in Cast Iron,"** A.F.S. Transactions, vol. 96-129, 1996, pp. 977-983.