

EDUCATION

- 1991 **Bachelor of Aerospace Engineering**
Auburn University, Auburn, Alabama
- 2001 **Master of Engineering, Mechanical Engineering**
University of South Carolina, Columbia, South Carolina

ASM International Certifications

- 2012 **Applied General Metallurgy**
Welding Metallurgy
- 2013 **Ferrous Metallurgy**
- 2019 **Corrosion – Chemical and Elevated Temperature**

EXPERIENCE

- June 1995
to Present **Engineering Design & Testing Corp.**
Columbia, South Carolina
- Consulting Engineer*
Vehicle Analysis Group Coordinator (November 2004 – Present)
District Engineering Manager (July 2005 – October 2010)
Laboratory Manager (August 2013 – Present)
- Engineering Analysis of mechanical systems including fracture and failure of analysis of machinery components and systems. Metallurgical analysis and processing including physical and mechanical testing. Failure analysis of materials, metals and ceramics. Supervision of materials testing and metallurgical laboratory facility.
- Specialized consulting in the reconstruction of vehicle accidents involving light and heavy vehicles, mechanical evaluation of hydraulic and pneumatic braking systems, analysis of vehicle and occupant dynamics, and analysis of reportedly stolen vehicles. Specialized consulting in the area of failure of mechanical components and mechanical systems. Analyses include analytical investigations, acceleration and deceleration of vehicles, failure of vehicle components, analysis of collision speed, and motion analysis of vehicles and occupants, as well as the determination of the origin and cause of vehicle and machinery fires. Analyses also include failure analysis of mechanical components and mechanical systems.
- January 1992
to May 1995 **American Koyo Bearing Manufacturing Corporation**
Orangeburg, South Carolina
- Project Engineer*
- Experience in the layout of production lines and placement of machines at a new production facility. Assisted in the sizing and placement of all support equipment including compressed air, coolant, power, and scrap handling. Responsibilities also included supervision of facility wide projects for improved parts handling, process expansion or modification and plant expansion. Also rendered technical drawings in support of these projects. Experience in the design of machinery utilized in the handling of in process bearing components.

Manufacturing Engineer

Experience in maintaining and improving bearing manufacturing processes. Responsibilities included testing new grinding wheels and stones for grinding processes, testing new tooling for forging processes, testing new machinery to evaluate its effectiveness, establishing processes and procedures for the manufacture of bearing components, and developing new manufacturing techniques for bearing components including new equipment design and equipment modification.

June 1990
to September 1990

Ethyl (Albemarle) Chemical Corporation
Research and Development Department
Orangeburg, South Carolina

Summer Intern

Experience in process design for the manufacture of products used in the manufacture of gasoline additives and pharmaceuticals.

May 1988
to December 1991

Firestone Tire and Rubber Company
Albany, Georgia

Experience in the adjustment of damaged tires, mounting and balancing of tires, vehicle maintenance and repair.

REGISTRATIONS and CERTIFICATIONS

National Council of Examiners for Engineering and Surveying (#17-068-02)

Registered Professional Engineer in Alabama (#22569-PE)

Registered Professional Engineer in California (#M 39390)

Registered Professional Engineer in Florida (#53097)

Registered Professional Engineer in Georgia (#PE024768)

Registered Professional Engineer in Missouri (#2018000462)

Registered Professional Engineer in North Carolina (#024138)

Registered Professional Engineer in South Carolina (#18911)

Registered Professional Engineer in Tennessee (#123770)

Registered Professional Engineer in Texas (#135968)

Registered Professional Engineer in Virginia (#38478)

Registered Professional Engineer in West Virginia (#18494)

PROFESSIONAL ORGANIZATIONS

American Institute of Aeronautics and Astronautics (AIAA)

American Society of Mechanical Engineers (ASME)

ASM International (ASM)

ASTM International (ASTM)

PUBLICATIONS

Case Studies in Graphitic Corrosion of Cast Iron Pipe, Journal of Failure Analysis & Prevention, Volume 21, Issue 2, April 2021, pp. 376-386 and online <https://rdcu.be/ccX3F>, January 2021, with Tim A. Jur, Anthony A. Yurko III, Ronald L. Windham, James R. Grey Jr.

CONTINUING EDUCATION

- 2019 *Welding Inspection and Quality Control*, ASM International (ASM International Education Department)
Human-Machine Interfaces, EDT Technical Session, Charlotte, North Carolina
Construction Engineering: A Focus on the Use of Cranes in Construction Operations, EDT Technical Session, Charlotte, North Carolina
- 2018 *Industrial Plant Process Controls*, EDT Technical Session, Orlando, Florida
Metallurgy for the Non-Metallurgist and Its Use in Root Cause/Damage Assessments, EDT Technical Session, Orlando, Florida
Basic Fatigue Analysis, EDT Technical Session, Orlando, Florida
- 2017 *Corrosion*, ASM International (ASM International Education Department)
Technologies Review of Unmanned Aerial Vehicles (UAVs) and Their Uses, EDT Technical Session, Albuquerque, New Mexico
- 2015 *3D Laser Scanner Operational Training*, FARO Technologies, Lake Mary, Florida
Materials Science & Technology (MS&T) Conference 2015, Columbus, Ohio
- 2014 *Advanced Metallographic Techniques*, ASM International (ASM International Education Department), Metals Park, Ohio
Understanding Stress and Strain within Induction Heating Applications, ASM International (ASM International Education Department)
- 2013 *Introduction to Heat Treating*, ASM International (ASM International Education Department)
Stainless Steel, ASM International (ASM International Education Department)
- 2012 *Intermediate SMAW*, Midlands Technical College (Continuing Education Department), West Columbia, South Carolina
Metallurgy of Welding and Joining, ASM International (ASM International Education Department), North Charleston, South Carolina
- 2011 *Applied Vehicle Dynamics*, SAE International, Society of Automotive Engineers, Inc., Duncan, South Carolina
Basic SMAW, Midlands Technical College (Continuing Education Department), West Columbia, South Carolina
Fractography, ASM International (ASM International Education Department), Materials Park, Ohio
- 2009 *Basic Fatigue Analysis Design*, EDT Technical Session, Birmingham, Alabama
- 2007 *CDR Data Analyst*, Collision Safety Institute, Largo, Florida
Microstructure and Performance of Heat-Treated Steel, ASM/AIST Course, Birmingham, Alabama
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- 2005 *Principles of Failure Analysis*, ASM International
- 2004 *NFPA 921, the Daubert Challenge and Expert Testimony: The New Rules SCIAAI*, Columbia, South Carolina
Vehicle Fire Investigation Seminar, SCIAAI, Columbia, South Carolina
- 2003 *Metallurgy for the Non-Metallurgist*, ASM International, Columbia, South Carolina
NFPA 921, the Daubert Challenge and Expert Testimony: The New Rules SCIAAI, Columbia, South Carolina
- 2001 *Tire & Wheel Safety Issues*, SAE International, Greenville, South Carolina
- 2000 *Investigation of Vehicle Fires Seminar*, Lee S. Cole & Associates, Inc., Charleston, South Carolina
- 1999 *Brakes and Design Safety*, SAE Seminars, Lexington, Kentucky
Vehicle Fire Investigation Seminar, SCIAAI, Columbia, South Carolina
- 1998 *Commercial Vehicle - Accident Investigation and Prevention Workshop*, J.J. Keller & Associates, Inc., Charlotte, North Carolina
Vehicle Fire Investigation Seminar, SCIAAI, Columbia, South Carolina
- 1997 *Arson/Fire Origin Investigation and Arson Case Management*, Columbia, South Carolina
Bendix HVS Training Program in the Operation and Maintenance of Heavy-Duty Vehicle Air Components and Brake Systems, Atlanta, Georgia
- 1995 *Accident Reconstruction I*, The Traffic Institute, Northwestern University, Evanston, Illinois