

Edwin N. Barron | Sr. Forensic Mechanical Engineer, P.E., CVFI, ACTAR

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Professional Summary:

Mr. Barron has very diverse work experience successfully conducting and coordinating projects in the areas of design, product development and testing/validation. He has been responsible for mechanical designs, structural analysis, failure mode analysis, developing/managing validation protocols and integration of vehicle powertrain systems. He has conducted forensic investigations of accidents, fires, storm damage, water losses, and product failures at industrial and residential sites. His experience includes vehicles, engines/aftertreatment systems, accident reconstruction, mechanical failures, agricultural implements and equipment, environmental systems including HVAC and plumbing, fire suppression systems, and teaching fundamental engineering courses at the university level.

Area of Expertise:

- Mechanical and structural failure investigations
- Vehicle accident investigations
- Vehicle/equipment fire investigations
- Product failures & accident investigations
- Water intrusion investigations
- Foundation drainage & storm damage investigations
- Plumbing failure investigations
- Agriculture systems & equipment fires, failures, & accident investigations
- Fire suppression system failure investigations
- Personal Injury & accident investigations
- Environmental air collection systems system design/investigations

Licenses and Certifications:

Professional Engineer, Indiana, License # 10300042

Professional Engineer, Illinois, License # 62.059301

Professional Engineer, Michigan, License # 6201054259

Professional Engineer, Missouri, License #2023022908

Professional Engineer, Ohio, License # 72166

Professional Engineer, Kentucky, License # 38167

Certified Fire and Explosion Investigator # 11227-5281

Certified Vehicle Fire Investigator # 11227-5281v

Accreditation Commission for Traffic Accident Reconstruction (ACTAR) Certification # 1706

Project Experience:

Mr. Barron has successfully completed over 700 forensic engineering investigation projects in all areas listed above since 2005

Mr. Barron has 34 years of conducting or managing engineering projects across multiple industries. Projects include software development, air-handling equipment design/evaluation, design & validation of heavy- and medium-duty truck and engine components, new product launch support at manufacturing facilities, vehicle system integration analysis/testing, failure investigations and teaching university engineering courses.

Mr. Barron has over 10 years of successful projects in mechanical/structure engineering design, validation, management of these projects and product launch support. Projects include heavy truck frame/fuel/exhaust system components, engine air compressor and lubrication subsystems and engine aftertreatment systems.

Mr. Barron has over 15 years of experience teaching at the University level. Courses taught are Vector Mechanics I / Statics, Vector Mechanics II / Dynamics and Introduction to Engineering, including basic electricity.

Mr. Barron has over 7 years of experience integrating systems for both heavy and medium duty diesel engines and trucks: cooling, engine/vehicle electrical, engine/vehicle electronic controls, vehicle braking, vehicle steering/suspension, engine air intake, engine/vehicle compressed air, vehicle powertrain, diesel/NG fuel, engine/aftertreatment integration. Projects included system design reviews, conducting and reviewing system testing, failure analysis, conducting/reviewing engineering analyses, troubleshooting control system diagnostic fault codes and design/manufacturing optimization studies/reviews.

Mr. Barron has over 7 years of experience in environmental air quality. Projects include computer software development & maintenance, analysis/design of ventilation systems for air contaminant control, environmental air permit applications, air quality regulatory applicability review

Mr. Barron has over 35 years of troubleshooting, repair and installation of wiring, plumbing, HVAC, refrigeration equipment, appliances, engines, equipment, and automobiles and light trucks.

Court Qualifications/ Depositions:

Litigation CV available upon request.

Professional Experience:

EFI Global Incorporated, Senior Mechanical Forensic Engineer – 2018 to Present
IUPUI and Butler University, Associate Faculty – 2010 to Present
Cummins Engines, Mechanical Development Engineer/Application Engineer – 2007 to 2018
Barron Engineering LLC, Owner/Principal Forensic Engineer – 2009 to 2018
Donan Engineering Incorporated, Senior Forensic Engineer – 2005 to 2007
International Truck and Engine Company, Senior Project Engineer – 1998 to 2005
Earth Tech, Project Engineer – 1995 – 2005
International Technology Corporation, Programmer/Project Engineer – 1991 to 1995

Specialized Education:

SAE Fundamentals of Vehicle Dynamics, Indianapolis, IN 46259
CFI Alternate Fuel Vehicles, Indianapolis, IN 46259
CFI Digital Photography and the Forensic Fire Investigator, Indianapolis, IN 46259
CFI Basic Electricity for Fire Investigators, Indianapolis, IN 46259
CFI Critical Thinking in Solving Cases, Indianapolis, IN 46259
Equipment Contamination Sample Training (EFI Global), Columbus, OH 2024
Forensic Tire Training (Tennent, Winkelman & Associates), Nashville, TN, 2023
Vale Training (Sedgwick) – Advanced Roofing Certification, Arlington, TX, 2022
Barczyk Institute – CrashCon22: Occupant Kinematics, Tire Failures, Low-Speed Crashes, Vehicle Dynamics, Video Analysis for Speed and BioMechanics, May, 2022
NCEES – Mechanical Engineering FE Exam Committee, Remote (Indianapolis, IN), February, 2022
Certified Fire Investigator Training: Arc Mapping Basics, Deposition Modules I & II, Vehicle Engine Ignition (Electrical and Fuel), Motor Vehicle Fires, Online, 2021
Berla, Inc. – Infotainment System Download: Certified Technician and Examiner, Annapolis, MD, 2019
International Association of Arson Investigators – Indiana Arson Fire Investigation Conference, Indianapolis, IN, 2018
NCEES – Mechanical Engineering Certification Exam Committee, Clemson, SC, 2017 and 2018
Applying Automotive Event Data Recorder (EDR) Data to Traffic Crash Reconstruction, Chicago, IL, 2016
National Association of Fire Investigator – CVFI Seminar, Lexington, KY, 2015
Cummins, Inc. – Advanced Application Engineering Training, Columbus, IN, 2011
National Association of Fire Investigators – CVFI Seminar, Lexington, KY, 2009
Cummins, Inc. – Finite Element Analysis for Designers, Columbus, IN, 2009
Cummins, Inc. – Six Sigma Green Belt Training, Columbus, IN 2009
Cummins, Inc. – Fundamentals of Reciprocating Engine Performance, Columbus, IN, 2009
Collision Safety Institute – Crash Data Retrieval (CDR) Operator Certification, Chicago, Illinois, 2007
Collision Safety Institute – CDR Technician Certification, Chicago, Illinois, 2007
Northwestern University Center for Public Safety – Traffic Accident Reconstruction II, Chicago, IL, 2006
Northwestern University Center for Public Safety – Traffic Accident Reconstruction, Chicago, IL, 2005
Public Agency Training Council – Vehicle Fire Investigation, Indianapolis, IN, 2005

Education:

Master of Science, Mechanical Engineering, Purdue University
West Lafayette, Indiana 2003

Bachelor of Science, Mechanical Engineering, University of
Cincinnati, Cincinnati, Ohio 1991

Affiliations:

Society of Automotive Engineers (SAE)
National Association of Fire Investigators (NAFI)

Courses Instructed/ Guest Lecturer:

Vector Mechanics I – “Statics”
Indiana University / Purdue University Indianapolis
Butler University

Vector Mechanics II – “Dynamics”
Indiana University / Purdue University Indianapolis
Butler University

Introduction to Engineering
Indiana University / Purdue University Indianapolis