

Mr. Higinbotham is the President for 830 Engineering Group LLC. He has over 20 years professional experience with automotive engineering and over 35 years of experience with motorcycles. He has completed research for vehicle manufacturers, component manufacturers and industry consortiums. He has been involved in testing and research for motorcycles, light duty vehicles, vehicle components and novel engine concepts. This work has included dynamometer testing, test riding, data acquisition/analysis and reporting. He has made technical presentations on his research to the Society of Automotive Engineers, Coordinating Research Council and the American Motorcyclist Association. He has investigated crashes involving motorcycles and light-duty vehicles throughout the United States.

AREAS OF EXPERTISE

Motorcycles, three-wheeled motorcycles (trikes), automobiles, all-terrain vehicles (ATVs), scooters, dirt bikes, snowmobiles, bicycles, motorized shopping carts, personal watercraft, gasoline engines, diesel engines, alternative fuel vehicles, aftermarket modified powertrains, aftermarket modified fuel systems, fuel injectors, catalytic converters, vehicle powertrain sensors, emissions control systems, on board diagnostics, motorcycle handling dynamics, motorcycle suspension tuning, motorcycle maintenance, motorcycle component failure, fuel testing equipment, fuel handling equipment, fuel storage, engine dynamometer, chassis dynamometer, powertrain test cell.

Crash reconstruction for motorcycles, automobiles, ATVs, and bicycles. Post-crash analysis of brakes, steering components, lamps, seatbelts and restraints, and airbag systems. Event Data Recorder (EDR) download and data analysis.

Performance blueprinting of motorcycle engines for racing applications. Machining of engine components using mill and lathe operations. Two and four cycle engines. Engine failure diagnosis.

Motorcycle riding and racing experience, performance brake testing on small (150 cc) and large (1800 cc) motorcycles for FMVSS compliance, operation of instrumented motorcycles, on road motorcycle endorsement since 1989, experience with off road motorcycle operation since 1977, licensed roadracer since 2001 with current "Expert" classification. Proper rider technique and rider actions. Instruction and operation of track days on racetracks. Gearing optimization and suspension tuning. Highside and lowside crashes. Dry and wet weather operation. Riding strategies: SEE and SIPDE.



PROFESSIONAL EXPERIENCE

2014 to 830 Engineering Group LLC

present President

Provide technical consulting, reporting and testimony for personal injury and property loss claims for incidents involving motorcycles and light duty vehicles. Consultation includes crash reconstruction, investigation of operator actions, vehicle design, vehicle performance, vehicle maintenance and repairs, failure analysis and defects.

2006 to **Robson Forensic, Inc.**

2014 Associate

Provided investigations, analysis, reports and testimony on personal injury and property loss involving crash reconstruction, failure analysis, vehicle and motorcycle crashes, defects, vehicle and motorcycle engineering, motorcycle operator actions and maintenance.

2003 to **Transportation Research Center, Inc.**

2006 Senior Project Engineer, Emissions and Powertrain Laboratory

Managed programs dealing with research in emissions, fuels, powertrain and alternative fuels. Consulted with clients regarding test component failure and performance. Designed and constructed custom test and data acquisition equipment. Trained technicians on operation of equipment and motorcycle test programs. Completed brake testing and high performance operation of motorcycles.

1995 to **Automotive Testing Laboratories, Inc.**

2003 Project Engineer, Emissions Laboratory

Oversaw research dealing with emissions, vehicle components and alternative fuels. Evaluated automotive technologies. Identified funding opportunities; prepared research proposals. Completed literature searches, presented project data.

1992 to **Electra Form, Inc.**

1995 Service Engineer

Commissioning for domestic and international customers with installation and operation of plastic injection molding equipment. Completed troubleshooting of mechanical, electrical and hydraulic systems. Provided training sessions.

1983 to Harbor Cycle

1986 Bicycle Mechanic / Sales

Performed assembly, mechanical repair and tuning of bicycles. Inspected crashed bicycles and prepared repair estimates. Completed wheel-building and wheel-truing.



EDUCATION

B.S. Mechanical Engineering, The Ohio State University, 1992

Continuing Education:

Crash Data Retrieval Level 1 and Level 2, Collision Safety Institute 2016
Applying Automotive EDR Data to Traffic Crash Reconstruction, SAE 2015
Tire Dynamics, Michigan State University Highway Traffic Safety Program 2014
Lamp Examination, Michigan State University Highway Traffic Safety Program 2014
Engine Failure Investigation and Analysis, SAE 2013

Tire as a Vehicle Component, SAE 2012

Event Data Recorders, Ohio Traffic Accident Reconstruction Association, 2012

Threaded Fasteners and the Bolted Joint, SAE 2011

High Performance Engine Design and Development, SAE 2010

Motorcycle Safety Workshop, Public Health Traffic Safety Institute, 2009

Experienced Rider Course, Motorcycle Safety Foundation, 2009

Dirt Bike School, Motorcycle Safety Foundation, 2009

Basic Rider Course, Motorcycle Safety Foundation, 2008

Vehicle Accident Reconstruction Methods, SAE 2006

Level 1 High Performance Driver Training, Transportation Research Center 2005

National Instruments Labview Programming, 2003

Catalytic Converters, Design and Durability, SAE 2002

Western Eastern Roadracing Association Roadracing School 2001

Motor Fuel: Technology, Performance, Testing and Specifications, SAE 2000

Keith Code's California Superbike School 1997

MEMBERSHIPS

Society of Automotive Engineers

VETMotorsports, Vice President, Board of Directors

American Motorcyclist Association

Competition License #414293

2003 and 2006 AMA National Champion in Clubman class

Western Eastern Roadracing Association

"Expert" Class, Competition License #16642

American Historic Racing Motorcycle Association

East Coast Timing Association

Maxton Mile MPS/F 500cc Record holder – 136.9 mph Ohio Mile MPS/F 500cc Record holder – 146.5 mph Ohio Mile MPS/G 500cc Record holder – 143.7 mph



PROFESSIONAL REGISTRATIONS

Professional Engineer: NCEES, Ohio, Kentucky, North Carolina, South Carolina, Texas, Florida, Louisiana, Georgia, Indiana, Pennsylvania, Wisconsin, Michigan, Tennessee, West Virginia

PUBLICATIONS

Particulate Emissions from a Pre-Emissions Control Era Spark Ignition Vehicle: A Historical Benchmark (SAE #2000-01-2213)

Effect of Selected LPG Fuel Components on Speciated Exhaust Emissions (SAE #961990)

PRESENTATIONS/PARTICIPATIONS

American Board of Trial Advocates, Masters in Trial, 2010, 2012 Central Ohio Association for Justice, March 2009 Society for the Scientific Detection of Crime, February 2009 American Motorcyclist Association, Government Relations Dept., 2002 Coordinating Research Council, On-Road Emissions Workshop, 1997, 1999