

## CURRICULUM VITAE

**Lock, James Raymond**  
Collision Research Associates  
College Station, Texas USA

February 2010

**PROFESSION:** Motor Vehicle Crash Investigation and Reconstruction  
Highway Safety Research & Analysis

**TECHNICAL TRAINING AND/OR TEACHING EXPERIENCE and  
SYMPOSIUM PARTICIPATION** (*Partial Listing*):

**1st Joint ITAI – EVU Conference  
and ITAI – EVU Test Day at the MIRA Proving Ground**

The Institute of Traffic Accident Investigators - Europäische Vereinigung für Unfallforschung and Unfallanalyse e.V. (European Association for Accident Research and Analysis), Hinkley, United Kingdom, September 2009.

**High Performance Driving School**

Skip Barber Racing School, Laguna Seca Race Track, California, June 2009.

**Motor Vehicle Accident Reconstruction: Theory and Practice**

Canadian Association of Technical Accident Investigators and Reconstructionists (CATAIR) and, International Association of Accident Reconstruction Specialists, Vancouver, BC, Canada, July 2008.

**2007 HVE Computer Simulation Forum**

Engineering Dynamics Corporation, San Antonio, Texas, February 2007.

**Crash Data Retrieval User's Conference**

Collision Safety Institute and The ARC Network, Houston, Texas, January 2007, January 2008 and January 2009.

**Advanced Vehicle Dynamics for Passenger Cars and Light Truck**

Society of Automotive Engineers Professional Development Program, Troy, Michigan, December 2005.

**Internationale Automobil - Asstallation** (IAA), Verband Automobilindustrie (VDA), Frankfurt/Main, Germany, September 1994 and September 2005.

**Vehicle and Occupant Kinematics in Rollovers**

Society of Automotive Engineers Professional Development Program, Detroit, Michigan, April 2005.

**Accident Reconstruction and Computer Simulation using MSMAC**

McHenry Software, Inc. Cary, North Carolina, April 2003.

***Vehicle Dynamics for Passenger Cars and Light Trucks:***

Society of Automotive Engineers Professional Development Program, Detroit, Michigan, March 2001.

***Private Investigators Continuing Education:***

Connelley and Associates, Bedford, Texas, February 2001, February 2003.

***Skills and Techniques for Advanced Riding:***

College Station, Texas, October 1999, April 2000.

***Passenger Car Rollover TOPTEC: Cause and Prevention:***

Society of Automotive Engineers Topical, Technical Workshop & Professional Development Program, San Diego, California, January 1999.

***Reconstruction Technologies 3rd Annual Advanced Training Seminar:***

Seminar in REC-TEC Software and Accident Reconstruction, Cocoa Beach, Florida, July 1998.

***Perception, Reaction, Conspicuity Seminar:***

Seminar - Human Factor Issues in Accident Reconstruction, University of Iowa, Iowa City, Iowa, November 1997.

***36th Annual Workshop on Transportation Law:***

Participated in a Mock Trial on Tort Issues, Transportation Research Board, Annual Workshop on Transportation Law, Chicago, Illinois, July 1997.

***Low Speed Collision TOPTEC:***

Society of Automotive Engineers Topical, Technical Workshop - Continuing Education Seminar, Richmond, BC, Canada, August 1996.

***Motorcycle Accident Reconstruction:***

Short Course developed and taught for The Texas A&M University System, Texas Engineering Extension Service, College Station, Texas, May 1996 through May 1990.

***Biomechanics of Motor Vehicle Accidents:***

Short Course developed and taught for The Texas A&M University System, Texas Engineering Extension Service, College Station, Texas, July 1994, with D. Lance Bullard and Dr. Patrick B. Mathews.

***Mechanics of Heavy Duty Trucks and Truck Combinations:***

The University of Michigan, Transportation Research Institute, Continuing Engineering Education Professional Development Program. Ann Arbor, Michigan, July 1994.

***Traffic Accident Investigation and Reconstruction Training:***

Two week course developed and presented to the Dubai Police General Headquarters, Dubai, United Arab Emirates, September 1993.

***The Acquisition and Utilization of Tire-Pavement Friction in the Reconstruction of a Motor Vehicle Collision:***

An invited lecture given at the Second Traffic Symposium, Dubai, United Arab Emirates, February 1993.

***Personal Injury Insurance Fraud Investigation and Expert Witness Requirements and Laws:***

Texas Association of Accident Reconstruction Specialist, Houston, Texas, October 1991.

***Tools and Techniques for Motorcycle Collision Reconstruction:***

Short Course developed and taught for the University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1991.

***International Motorcycle Safety Conference, The Human Element:***

Orlando, Florida, November 1990.

***Tire/Roadway Friction & Drag Sled Testing:***

Texas Association of Accident Reconstruction Specialist, College Station, Texas, November 1990.

***Tire Pavement Friction - an Overview of Properties and Relationships:***

Short Course developed and taught for the University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1990.

***Special Problems in Traffic Accident Reconstruction:***

University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1990.

***Tire Failure Seminar:***

Criminal Justice Academy, The Texas A&M University System, College Station, Texas, January 1990.

***Investigation of Motorcycle Accidents:***

Institute of Police Technology and Management, University of North Florida, Grand Prairie, Texas, March 1989.

***Brakes: Design and Safety:***

Society of Automotive Engineers Continuing Education Seminar, Orlando, Florida, October 1988.

***Inspection of Commercial Vehicles in Accidents:***

Institute of Police Technology and Management, University of North Florida, Tucson, Arizona, March 1988.

***Investigation of Commercial Vehicles Accidents:***

Institute of Police Technology and Management, University of North Florida, Tucson, Arizona, March 1988.

***Accident Reconstruction and Analysis:***

Institute of Transportation Engineers and Northwestern University, Dallas, Texas, November 1985.

***National Accident Sampling System Update:***

Southwest Research Institute, San Antonio, Texas, November 1981.

***Advanced Accident Reconstruction:***

University of Michigan, Highway Safety Research Institute, Ann Arbor, Michigan, May 1979.

***Special Interest Accident Reconstructions -***

***Motorcycles Collisions and Automobile Side Impact Collisions:***

University of Michigan, Highway Safety Research Institute, Ann Arbor  
Michigan, April 1978.

***Management of Accident Research Teams:***

Allen Corporation and NHTSA, Washington, D.C., March 1978.

***Advanced Motor Vehicle Accident Investigation:***

U.S. Department of Transportation, NHTSA, Washington, D.C., February  
1978.

***Accident Investigation Field Techniques:***

Indiana University, Institute for Research in Public Safety and NHTSA,  
Bloomington, Indiana, December 1977.

***National Accident Sampling System Introductory Accident Investigation  
Training:***

Allen Corporation and the National Highway Traffic Safety Administration,  
U.S. Department of Transportation, Washington, D.C., November 1977.

***High Performance Vehicle Operation Training:***

Texas Transportation Institute, Texas A&M University System, August 1975.

***Automotive Service Short Courses:***

Toyota, Mazda, General Motors, Ford, various dates and locations, 1971 -  
1975.

**PARTICIPANT IN SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)  
TECHNICAL TRAINING, SHORT COURSE and INTERNATIONAL  
SYMPOSIUM:**

*Accident Investigation and Reconstruction, Detroit, April 2005.*

*Accident Reconstruction Technology and Animation XI, Detroit, March 2001.*

*Truck & Bus Meeting and Exposition, Indianapolis, November 1998.*

*Accident Reconstruction Technology and Animation VII, Detroit, March 1997.*

*Accident Reconstruction Technology and Animation V, Detroit, March 1995.*

*Accident Reconstruction Technology and Animation, Detroit, March 1993.*

*Vehicle Dynamics and Rollover Propensity Research, Detroit, February 1992.*

*Accident Reconstruction: Technology and Animation, Detroit, February 1991.*

*Motor Vehicle Accident Reconstruction, Review and Update, Detroit,  
February 1989.*

*Accident Reconstruction, State-of-the-Art, Detroit, February 1988.*

*Automatic Occupant Protection Systems, Detroit, February 1988.*

*Automobile Collision Analysis, and Accident Reconstruction: Automobiles,  
Tractor/Semi-trailers, Motorcycles and Pedestrians, Detroit, February 1987.*

*Field Accidents: Data Collection, Analysis, Methodologies and Crash Injury  
Reconstruction Symposium, Detroit, February 1985.*

*Advances in Belt Restraint Systems: Design, Performance and Usage,  
Detroit, February 1984.*

*Pedestrian Impact Injury and Assessment, Side Impact Protection, Detroit,  
February 1983.*

*Accident Investigation and Reconstruction Practices Committee, Detroit,  
February 1977 – 2005.*

**FORMAL EDUCATION:**

**Texas A&M University - 1987**

Bachelor of Science in Political Science

General Engineering Minor

**EXPERIENCE:**

***Traffic Accident Reconstruction and Highway Safety Expert:***

**Collision Research Associates, January 1991 - Present.**

**Scientific Inquiry, Inc., January 1982 - June 1994.**

*Activities include:* Heavy truck, motorcycle, and passenger vehicle traffic collision investigation and reconstruction. Crash scene and vehicle documentation. Vehicle maintenance and defect investigation. Crash investigation, reconstruction and analysis for governmental entities, insurance companies, law firms, trucking and transportation carriers and vehicle component manufacturers. Airbag deployment and school bus collision investigations for U.S. DOT NHTSA. Develop and teach collision reconstruction short courses.

Qualified as an Expert Witness in accident reconstruction (vehicle, environment and human factors), roadway safety and analysis, vehicle defects, and transportation safety in many State and Federal Courts.

***Texas Transportation Institute, Texas A&M University 1975 – 1992***

***Various Positions Listed Below***

***Assistant Research Scientist:***

**Texas Transportation Institute, Texas A&M University System,**

**October 1986 - June 1992.**

*Activities included:* Collision investigation, reconstruction, research and reporting for the federal government, state agencies and private sponsors. Research in vehicle defect investigation, heavy truck fuel system integrity (during collisions), and heavy truck braking. Traffic accident data base research and analysis, motorcycle crash reconstruction, research and analysis of tire/pavement friction, research and evaluation of highway design

and maintenance related to accident frequency and causation. Provide detailed technical assistance and policy analysis to the Federal Government and the State of Texas in the area of highway safety. Research proposal and report preparation. Development and presentation of accident reconstruction training courses for various sponsors.

***Program Manager:***

**Accident Investigation and Reconstruction Program, Accident Analysis Division, Texas Transportation Institute, Texas A&M University System, September 1983 - October 1986.**

*Activities included:* Engineering evaluation of traffic safety components and programs. Development and evaluation of traffic safety programs. Budgetary and financial preparation and research activity reporting. Traffic crash data analysis. Hiring, development and oversight of research staff. Research proposal and report preparation. Conduct contract research in the area of highway safety and traffic crash reconstruction for various federal and state agencies, and for private industry.

***Research Associate:***

**Texas Transportation Institute, Texas A&M University System, September 1980 - September 1983.**

*Activities included:* Principal Investigator on U.S. Department of Transportation (DOT) National Accident Sampling System (NASS) crash investigation/reconstruction projects. Research over-represented geographic accident locations for the FHWA and develop procedures for identifying and documenting roadway geometry, pavement and roadside conditions that cause or contribute to accident occurrence. Motorcycle safety research and accident data collection. Evaluation of traffic safety programs.

Technical and financial research proposal preparation. Preparation of written reports on highway safety research project operation. Occasional lecturer in traffic accident investigation and reconstruction technology for the Texas A&M University Engineering Extension Service and Law Enforcement Academy.

***Highway Safety Specialist:***

**Texas Transportation Institute, Texas A&M University System,  
September 1977 - August 1980.**

*Activities included:* Accident Investigation and Reconstruction Team Manager for two U.S. DOT sponsored NASS teams. Team Leader for U.S. DOT sponsored NASS collision investigation/reconstruction team. Test supervisor for Environmental Protection Agency automotive emissions compliance and road-load horsepower determination testing. Preparation and dissemination of motor vehicle research test reports. Testing and data analysis supervisor for motor vehicle dynamics and tire property research conducted for and sponsored by the U.S. Department of Transportation.

***Instructor:***

**Texas Transportation Institute, Texas A&M University System, August  
1975 - August 1977.**

*Activities included:* Chief Instructor for High Performance Driver Development Program. Hire, train and supervise instructors for the high performance driver training program. Develop, promote, schedule and conduct one and two week short courses for police officers and oil company chauffeurs. Perform maintenance and repair on vehicles and equipment used in short courses. Testing supervision, data analysis and reporting on tire-pavement/vehicle handling and dynamics research projects for the U.S. DOT. Data acquisition, analysis and reporting on tire-pavement coefficient of

friction calibration-correlation studies.

***Automobile Service Manager and Mechanic:***

Several domestic and import automobile dealerships, 1970 - 1975.

*Activities included:* General automotive repair, vehicle defect repair, new dealer start-up, customer liaison, parts sales, scheduling of automotive service and warranty repair claim processing.

***Automotive Paint and Body Service Technician:***

Several domestic automobile dealerships, 1969 – 1970.

***Motorcycle Mechanic:***

Honda/BMW/Triumph dealer, 1966 - 1969 (Part-time during High School).

**SOCIETY AND COMMITTEE MEMBERSHIP, AND LICENSING INFORMATION:**

**Member - *Society of Automotive Engineers (SAE) (1977 - Present )***

- Member - Accident Investigation and Reconstruction Practices Committee (SAE)
- Member - Various SAE Task Groups

**Member - *Institute of Transportation Engineers***

**Associate Member – *American Society of Civil Engineers***

**Member – *European Association for Accident Research and Analysis***

**Member - *Texas Association of Accident Reconstruction Specialists***

**Texas Commission on Private Security - *Private Investigations Company (Class A) under license number A09712.***

**Fellow: The American Board of Forensic Examiners**

- Board Certified Forensic Examiner (1994 – 2004)

**Member - National Research Council (1983 - 1992)**

- Transportation Research Board
- *Motorcycle and Moped Committee, TRB A3B14*

**TECHNICAL PAPERS, PRESENTATIONS and REPORTS (partial listing):**

***Collision Reconstruction Reports***

Prepared for a variety of clients on individual public roadway collisions investigated and reconstructed to determine how and why the collision occurred, Collision Research Associates, 1991 – Present.

***Occupant Restraint Systems; Design and Function***

Developed for and presented at the Biomechanics of Motor Vehicle Accidents Short Course, Law Enforcement and Security Training Division, Texas Engineering Extension Service, Texas A&M University, July 1994.

***Traffic Accident Investigation and Reconstruction***

Prepared for and presented to the Dubai Police General Headquarters, Dubai Police College, Dubai, United Arab Emirates, with D. Lance Bullard, September 1993.

***The Acquisition and Utilization of Tire-Pavement Friction in the Reconstruction of a Motor Vehicle Collision***

Prepared for and presented to the Dubai Police General Headquarters, Research & Studies Center. The Second Traffic Symposium, Dubai, United Arab Emirates, February 1993.

***Texas Skid Initiated Accident Reduction Program***

Research Report 910-1F, Skid Accident Reduction Program Safety Recommendations H-87-2, Prepared for the Texas State Department of Highways and Public Transportation, with Don L. Ivey, D. Lance Bullard and Lindsay I Griffin, III., August 1992.

***Tools and Techniques for Motorcycle Collision Reconstruction***

Developed for and presented to the Special Problems in Accident Reconstruction Seminar, Institute of Police Technology and Management, University of North Florida, Jacksonville, April 1991.

***Proposed Program to Reduce Skid Initiated Accidents in Texas***

Program Development Report 9100-1, Skid Accident Reduction Program Safety Recommendations H-87-2, Prepared for the Texas State Department of Highways and Public Transportation, with Don L. Ivey and Lindsay I Griffin, III., August 1990.

***Motorcycle Accident Reconstruction***

Developed for and presented to the Law Enforcement and Security Training Division, Texas Engineering Extension Service, Texas A&M University, May 1990 - May 1996.

***Tire-Pavement Friction: An Overview of Properties and Relationships***

Developed for and presented to the Special Problems in Accident Reconstruction Seminar, Institute of Police Technology and Management, University of North Florida, Jacksonville, April 1990.

***Rollover Caused by Concrete Safety Shaped Barrier: Volume II***

Final report on contract DTFH61-85-00129, for the Federal Highway Administration, U.S. Department of Transportation, with K.K. Mak and D.L. Sicking, January 1989.

***A Survey of Selected 1986 Motorcycle Fatalities in the State of Texas***

With Sandra L. Parsons. TTI Report Number: TARE-82, January 1989.

***Heavy Truck Fuel System Integrity Study***

Clinical In-Depth Case Study Reports generated for each investigated heavy truck crash with fuel loss or post-crash fire collision. Prepared for and presented to the Motor Vehicle Manufacturers Association, 1987 – 1988.

***Accident Investigation and Reconstruction of Air Bag Equipped Vehicles***

Reports prepared for the National Highway Traffic Safety Administration, U.S. Department of Transportation, 1987-1992.

***In-Depth Investigation and Documentation of Vehicles with Alleged Safety Defect***

Investigations conducted and reports prepared for the U.S. Department of Transportation National Highway Traffic Safety Administration's Office of Defects Investigation, 1987-1992.

***Research, analysis and preparation of Highway Safety Technical Reports***

Research and production on an annual basis for the State of Texas, 1984-1992.

***NHTSA Heavy Truck In-Depth Accident Investigation: A Recommended Protocol For Program Initiation***

Prepared for and presented to the U.S. DOT, National Highway Traffic Safety Administration, January 1988.

***Multidisciplinary Accident Investigation Teams - A Feasibility Study  
Volume I Technical Report, Volume II Data Collection Forms and  
Manuals***

Prepared for the Texas State Department of Highways and Public Transportation, with King K. Mak, August 1985.

***Pavement Condition Measurements for Safety Improvements***

Final Report FHWA under Contract DTFH 61-82-C-00056, with Don L. Ivey, Alan S. Jones, Kirk E. Barnes, Olga J. Pendleton, and Ted Chira-Chavala, June 1985. (Volume 1 and 2).

***Evaluation of Selective Traffic Enforcement Programs (STEPs) in Waco and Irving, Texas***

Prepared for the Texas State Department of Highways and Public Transportation, with Olga J. Pendleton, November 1983.

***Surveys of Motorcycle Traffic at Selected Locations in Houston and Dallas, Texas***

Prepared for the Motorcycle Safety Foundation, with Nancy Hatfield, December 1982.

***Evaluation and Documentation of the Procedures Generated by the State Accident Statistical System (SASS)***

Prepared for the Texas State Department of Highways and Public Transportation, with Joseph La Belle and Sara Seely, April 1982.

***Documentation of Accident Investigation and Reconstruction on NASS Selected Cases***

Approximately 300 collision reconstructions provided to the U.S. DOT, NHTSA. 1977-1981. *Technical Oversight provided on over 1200 NASS collision investigations, 1980-1986.*

***Establishment of a National Accident Sampling System Team in Ashley,  
Chicot, Desha, Drew and Lincoln Counties, Arkansas***

Prepared for the U.S. Department of Transportation, National Highway  
Traffic Safety Administration, with John Cook, September 1980.

***Student's Guide to the Texas Transportation Institute School for High  
Performance Driving***

Texas Transportation Institute, February 1976.



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