



Russell L. Anderson – Crash Expert, Impact Biomechanics

15551 FM 362

Navasota, Texas 77868

Phone: 979-595-1233

Web: www.billycoxgroup.com

Email: consultants@billycoxgroup.com

Professional Summary

B.S.E. in Biomedical Engineering with mechanics emphasis

M.S. in Bioengineering with mechanics emphasis

Primary Areas of Consultation:

Motor vehicle crash investigation and reconstruction with emphasis in low speed and high speed impact biomechanics.

Professional Experience:

09/2008 to **Billy Cox Group**, Navasota, Texas

Present Crash Expert – Impact Biomechanics and Crash Reconstruction

Performs accident reconstruction and investigation of low to high speed motor vehicle accidents including on scene investigation, post accident vehicle and site inspection, retrieval and evaluation of data stored on crash data recorders (CDR), biomechanical analyses of occupant kinematics, injury mechanics and restraint effectiveness, including the review and evaluation of accident reports, witness statements, and medical records, and digitization of vehicle and scene data for 3-D modeling.

May 03 - **Collision Analysis & Research**, Tempe, AZ

Present Biomechanical Engineer - Accident Reconstructionist

Performs accident reconstruction and investigation of low to high speed motor vehicle accidents including on scene investigation, post accident vehicle and site inspection, retrieval and evaluation of data stored on crash data recorders (CDR), biomechanical analyses of occupant kinematics, injury mechanics and restraint effectiveness, including the review and evaluation of accident reports, witness statements, and medical records, and digitization of vehicle and scene data for 3-D modeling.

Feb 99 - **Biomechanics Analysis**, Tempe, AZ

Present Engineering Assistant/Technical Reader (part time)

Involved in staged instrumented car-to-car collisions with instrumented live human volunteers. Conducts on-site investigations as well as post accident vehicle and site inspections. Responsible for accident reconstruction and biomechanical analyses as well as the review of file materials, including evaluation of accident reports, vehicle photographs and repair estimates, witness statements, and medical records.

Education:

- Aug 03 - **Arizona State University, Tempe, Arizona**
May 07 M.S. in Bioengineering with mechanics emphasis
Courses include Biomechanics of the Skeletal System, Spinal Biomechanics, Advanced Physiology, Human Systems Neuroscience, Mathematical Modeling, Human Factors and Ergonomics, and Engineering Design of Experiments. Class projects include Dynamic versus Static Anterior Cervical Plates, Pathology of Diffuse Axonal Injury, and Three Factor, Two Level Designed Experiment Measuring Drag Factor During Skid Testing. Thesis project involved the biomechanical analysis of sacral insufficiency fractures using Finite Element Analysis.
- Sept. 99 - **Arizona State University, Tempe, Arizona**
May 03 B.S.E. in Bioengineering with mechanics emphasis
Funded by a grant from the National Science Foundation to design and implement a device to increase privacy for a young individual with cerebral palsy and hydrocephalus by enabling independent toilet use. Conducted project involving testing and comparison of oxygen concentrators.

Professional Societies:

Society of Automotive engineers (SAE)
Southwestern Association of Technical Accident Investigators (SATAI)
American Academy of Forensic Sciences (AAFS)
American Society of Mechanical Engineers (ASME)
National Association of Professional Accident Reconstruction Specialists (NAPARS)
Association for the Advancement of Automotive Medicine (AAAM)

Presentations:

"Occupant Kinematics in Low Speed Motor Vehicle Accidents and Evaluation of Common Analogies," presented at the American Academy of Forensic Sciences 60th Annual Meeting, Washington, D.C., February 2008.

"Motor Vehicle Pitch Associated with Hard Brake Applications," presented at the American Academy of Forensic Sciences 60th Annual Meeting, Washington, D.C., February 2008.

"3-D Digitization for Traffic Accident Reconstruction, Simulations and Animations," presented at the American Academy of Forensic Sciences 60th Annual Meeting, Washington, D.C., February 2008.

"Change in Bumper Height During Hard Braking and Hard Acceleration," presented at the Southwestern Association of Technical Accident Investigators, July Meeting, Phoenix, Arizona, 2007.

"Low Speed Bumper vs. Hitch Barrier Tests," presented at the Southwestern Association of Technical Accident Investigators, July Meeting, Phoenix, Arizona, 2007.

Publications:

Anderson RL, Miller ER & Anderson RD, "Occupant Kinematics in Low Speed Motor Vehicle Accidents and Evaluation of Common Analogies," Proceedings of the American Academy of Forensic Sciences 60th Annual Meeting, Volume 14, 2008.

Anderson RL & Anderson RD, "Motor Vehicle Pitch Associated with Hard Brake Applications," Proceedings of the American Academy of Forensic Sciences 60th Annual Meeting, Volume 14, 2008.

Anderson RL, "3-D Digitization for Traffic Accident Reconstruction, Simulations and Animations," Proceedings of the American Academy of Forensic Sciences 60th Annual Meeting, Volume 14, 2008.

Research:

- Sept 08 -- Performed and participated in instrumented barrier crash testing using a United Parcel Service Ford delivery truck in Dallas, TX.
- Aug 08 -- Performed and participated in instrumented car-to-motorcycle rear collision testing using a Mazda 929 and a BMW R1200RT with an instrumented human volunteer in Tempe, AZ.
- June 08 -- Participated in instrumented barrier side-swipe, rear-end impact with a Mitsubishi pickup and wheel fall off using a Dodge Intrepid, broadsides between Yamaha motorcycles and a Honda Civic and a Dodge Ram Van, a pedestrian dummy impact with a Chevrolet Malibu, PIT maneuvers between a Ford Crown Victoria and a Dodge Intrepid, and broadsides between a Ford Crown Victoria and a Honda Civic, an International school bus and a Kia Sephia, and a Dodge Intrepid and a Dodge Ram Van at the Las Vegas Motor Speedway, NV.
Results presented at ARC-CSI conference, June 2-5, 2008, Las Vegas, NV.
- Nov 07 -- Performed and participated in instrumented car-to-car rear collision testing using a Mazda 929 and a Dodge Grand Caravan with an instrumented human volunteer in Tempe, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- Nov 07 -- Performed and participated in instrumented rear-to-curb, seat plopping and seat dropping testing and various daily activities with an instrumented human volunteer in Tempe, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- Oct 07 -- Performed and participated in instrumented car-to-car side-swipe and broadside collision testing using a Toyota Corolla, Chrysler 5th Ave and a Dodge Grand Caravan with instrumented human volunteers in Tempe, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- Oct 07 -- Performed and participated in instrumented rear hitch to barrier and front to barrier tests with airbag deployment using a Toyota Corolla with instrumented human volunteers in Tempe, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- Sept 07 -- Performed and participated in instrumented head drop tests with and without Full 90 Performance Head Gear™ using a Hybrid III dummy head in Tempe, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- Aug 07 -- Performed and participated in instrumented front and rear bumper to barrier tests using a Toyota Corolla with an instrumented human volunteer in Tempe, AZ.
- July 07 -- Performed and participated in instrumented front and rear bumper to barrier tests using a Saturn Ion with an instrumented human volunteer in Tempe, AZ.
- July 07 -- Performed and participated in instrumented dump truck vs. full-sized van and dump truck vs. full-sized pickup broadside tests, with an instrumented live human in Phoenix, AZ.
Results presented at SATAI conference, July 13-14, 2007, Phoenix, AZ.
- July 07 -- Performed and participated in instrumented vehicle pitch and change in bumper height tests during hard braking, hard acceleration, and with the addition of occupants using a Honda Civic, Toyota Sequoia, Dodge Grand Caravan, Toyota Tundra, GMC Sierra, Toyota Tacoma, and Mazda 929 with in Tempe, AZ.
Results presented at SATAI conference, July 13-14, 2007, Phoenix, AZ.
Results presented at Injury Sciences' Annual Conference, Oct 1-3, 2007, San Antonio, TX.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.

(Research Continued)

- July 07 -- Performed and participated in instrumented rear bumper to barrier and rear hitch to barrier tests using a Dodge Grand Caravan with an instrumented human volunteer in Tempe, AZ.
Results presented at SATAI conference, July 13-14, 2007, Phoenix, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- June 07 -- Participated in a skid testing using vehicles with and without ABS brakes on new dry and wet rubberized asphalt in Mesa, AZ.
- June 07 -- Participated in instrumented head-on crash between a Ford Crown Victoria and a Chevrolet Lumina, broadsides between a Jeep Grand Wagoneer and a Toyota Tercel, a Chevrolet Malibu and Ford Aspire, Ford Crown Victoria and a trailer pulled by a Jeep Cherokee, and wheel fall offs with a Chevrolet Cavalier at the Las Vegas Motor Speedway, NV.
Results presented at ARC-CSI conference, June 4-7, 2007, Las Vegas, NV.
- June 07 -- Performed and participated in instrumented bumper-to-bumper and bumper-to-hitch impacts with instrumented live human subjects in a Chevrolet Cavalier and a Jeep Cherokee in Las Vegas, Nevada.
Results presented at ARC-CSI conference, June 4-7, 2007, Las Vegas, NV.
Results presented at SATAI conference, July 13-14, 2007, Phoenix, AZ.
Results presented and published at AAFS conference, Feb, 18-23, 2008, Washington D.C.
- May 07 -- Performed and participated in instrumented motorcycle and passenger motor vehicle hard braking demonstrations in Chandler, AZ.
- May 07 -- Performed and participated in instrumented ramp-vault testing using a Ford Crown Victoria with instrumented live humans in Mesa, AZ.
- May 07 -- Performed and participated in instrumented Isuzu Hombre 5 and 10 mph rear-to-barrier impacts with an instrumented live human in the 5 mph barrier impact in Tempe, AZ.
- Dec 06 -- Performed and participated in instrumented hard braking, side-to-side steering, curb strikes and sudden door opening demonstrations with an instrumented live human in Tempe, AZ.
- Nov 06 -- Performed and participated in instrumented force-deflection bumper testing on a Ford Ranger, in Tempe, AZ.
- Aug 06 -- Performed and participated in instrumented sudden door opening demonstrations with an instrumented live human in Tempe, AZ.
- Aug 06 -- Performed and participated in instrumented Mart Cart/Mart Mate scooters emergency stop demonstrations as well as instrumented automobile hard braking and curb strike events using an instrumented live human subject in Scottsdale, AZ.
- July 06 -- Performed and participated in instrumented car-to-car crash tests between a Infiniti G35 and a Mitsubishi Expo LRV in Tempe, AZ.
- June 06 -- Participated in instrumented head-on crash test between an Establishment motor home and a Chevrolet Astrovan and a multiple vehicle crash test in which a Thomas school bus rear-ended a Hyundai Elantra, which rear-ended a Winnebago motor home. The motor homes were occupied by three instrumented Hybrid III dummies at the Las Vegas Motor Speedway, NV.
Results presented at ARC-CSI conference, June 5-8, 2006, Las Vegas, NV.
- April 06 -- Performed and participated in instrumented car-to-barrier crash tests with a Chrysler PT Cruiser in Mesa, AZ.
- Mar 06 -- Performed and participated in instrumented car-to-car crash tests with a Chevrolet Malibu and Impala, and idle rollout tests using a Jaguar S-type, Chevrolet Malibu and Impala in Seal Beach, CA.

(Research Continued)

- Jan 06 -- Performed and participated in instrumented car-to-barrier crash tests with a Mercury Grand Marquis in Mesa, AZ.
- Jan 06 -- Performed and participated in instrumented car-to-car crash tests between a Lincoln Towncar and a Mercury Grand Marquis in Tucson, AZ.
- Dec 05 -- Performed and participated in instrumented car-to-car crash tests between a Mercury Grand Marquis and a Buick LeSabre in Tempe, AZ.
- Oct 05 -- Performed and participated in Jaguar XJ8 seat belt pre-tensioner deployment demonstration in Phoenix, AZ.
- July 05 -- Performed and participated in instrumented top speed and deceleration tests of Mart Cart/Mart Mate scooters in Scottsdale, AZ.
- April 05 - Performed and participated in instrumented car-to-car impacts and ABS and non-ABS skid tests with a Chevrolet Cavalier and a Buick LeSabre in Tempe, AZ.
- Jan 05 -- Participated in instrumented in-line braking and steering-braking tests with a Toyota Land Cruiser pulling a loaded 12 foot U-haul trailer with and without trailer surge brakes at KARCO Engineering, Adelanto, CA.
- Nov 04 -- Performed and participated in instrumented escalator tests and daily activity testing with an instrumented live human subject in Phoenix, AZ.
- Nov 04 -- Performed and participated in instrumented car-to-car impact, skid, curb impact, speed hump and swerving tests with a Ford Taurus and a Buick LeSabre in Tempe, AZ.
- Oct 04 -- Performed and participated in instrumented acceleration tests with a Freightliner tractor and loaded side-dump trailer in Phoenix, AZ.
- Oct 04 -- Performed and participated in instrumented bicycle braking deceleration tests and visibility demonstration in Surprise, AZ.
- Oct 04 -- Performed and participated in instrumented head drop tests onto soil and onto asphalt with a Hybrid III dummy head in Phoenix, AZ.
- Jun 04 -- Participated in instrumented Ford Bronco II rollover stability tests at Bandimere Speedway, CO.
- May 04 -- Performed and participated in instrumented vehicle-to-vehicle bumper crash tests on a Dodge Grand Caravan and a Ford Taurus in Tempe, AZ.*
- Feb 04 -- Participated in instrumented in-line braking, impulse steering, and steering-braking tests with a Ford Explorer Sport and 14 foot U-haul truck with and without a Dodge Stratus on a U-haul tow dolly at KARCO Engineering, Adelanto, CA.
- July 03 -- Participated in instrumented FMVSS 216 Roof (windshield) Crush Resistance testing of a Jeep CJ-7 and a Jeep Wrangler at KARCO Engineering, Adelanto, CA.
- April 03 - Participated in instrumented in-line braking, impulse steering, and steering-braking tests with a Ford Explorer and 14 foot U-haul truck with and without a Dodge Caravan on a U-haul tow dolly at KARCO Engineering, Adelanto, CA.
- July 02 -- Participated in instrumented Ford Explorer and Isuzu Rodeo rollover stability tests, at Bandimere Speedway, CO.
- Mar 01 -- Participated in instrumented Ford Explorer rollover stability tests, including delamination, at Bandimere Speedway, CO.

(Research Continued)

- July 97 -- Performed and participated in instrumented vehicle-to-vehicle rear-end and frontal impacts with a Dodge Shadow and Pontiac Bonneville and with an instrumented live human subject at The Auto Shop, Phoenix, AZ.
Results presented and published in Paper number 980298 at SAE's International Congress & Exposition, February 23-26, 1998, Detroit, MI.
Results presented: "Recent Research on Low Speed Collisions" at the Society of Forensic Engineers and Scientists, Santa Barbara, Ca, October 1997.
- July 96 -- Performed and participated in instrumented 15 vehicle-to-vehicle rear-end and frontal impacts with a Dodge Shadow and Chevrolet Nova and an instrumented live human volunteer occupant at The Auto Shop, Phoenix, AZ.
Results summarized in Nielsen, Gough, Little, West, and Baker, "Human Subject Responses to Repeated Low Speed Impacts Using Utility Vehicles," SAE 970394.
Results summarized in Accident Reconstruction Journal, Sept/Oct 1996: "Low Speed Impact Test Summary - Human Test Subjects"

Continuing Education:

- Feb 08 -- American Academy of Forensic Sciences 60th Annual Meeting, Engineering Sciences Section
Topics included occupant kinematics and modeling, pedestrian impacts, partial and complete ejection of restrained occupants, rollover testing and injury analysis, crashworthiness, seat back strength, testing and safety, seat belt failure, discomfort glare quantification, and event data recorders.
- Oct 07 -- 51st Stapp Car Crash Conference
Addressed topics including head, spinal, thoracic, abdominal and lower limb biomechanics, occupant kinematics, restraint system performance, crashworthiness, lateral impacts, cadaver and human surrogate testing and modeling, seat geometry and anthropometry, pedestrian impacts, and human injury tolerances and criteria.
- Oct 07 -- 35th International Workshop on Human Subjects for Biomechanical Research
Addressed topics including head, spine, thoracic and abdominal injury mechanics, modeling and simulation, motorcycle helmet analysis, cadaver research, injury criteria, biological material properties, and instrumented helmet impact studies.
- June 07 -- ARC-CSI Crash Conference
Topics included: accident reconstruction, crash testing and demonstrations, traffic signal timing and phases, seat belt injuries and effectiveness, and airbag injuries and effectiveness nighttime pedestrian collisions, skid testing and human factors.
- May 07 -- Engineering with Finite Element Analysis by Phoenix Analysis & Design Technologies, Inc.
Topics include: 2D, 3D and axisymmetric models, techniques, procedures, and use of finite element analysis in engineering industry, structural and thermal modeling using beam, shell and solid elements, evaluation of models and results.
- April 07 -- Biomechanics of High-Impact Injuries by National Transportation Safety Board & Association for the Advancement of Automotive Medicine
Topics included: injury criteria, injury scales, seat belt and airbag design, performance and effectiveness, head, neck, thoracic, abdominal, thoracolumbar, upper and lower extremity anatomy, injury mechanics and tolerances, occupant kinematics, use of human cadavers and anthropomorphic test devices, pedestrian impacts and protection, child passengers and restraints, aviation injury cause and analysis, and case studies.

(Continuing Education Continued)

Feb 07 -- American Academy of Forensic Sciences 59th Annual Meeting, Engineering Sciences Section

Topics included traumatic brain injury, use of HIC, traumatic causes of loss of consciousness, traumatic amnesia, disc injury, crushing and closed head injuries, pedestrian night time visibility, critical speed formula, car-to-car and car-to-barrier impacts, narrow object impact damage patterns, inertial buckle release, false latch, seat belt forces, evidence of seat belt use, airbag risk to older children, airbag testing and injury assessment reference values.

Jan 07 -- Crash Data Retrieval (CDR) User's Conference

Topics included: developments in Event Data Recorder (EDR) technology, EDR types, data recorded, and features, accuracy of recorded speed and Delta V, crash test results, effects of acceleration, deceleration, hard braking and yawing on speed data, average daily ignition cycles, use of diagnostic tools with crash data retrieval, accident reconstruction, survivability aspects of the 563 rule, final NHSTA ruling and its implications, and deployment criteria of supplemental restraints.

July 06 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Topics included: motorcycle injuries, motorcycle reconstruction, head injuries and mechanisms, helmet design, testing and standards. *Live staged motorcycle to car rear-end, rear broadside and front broadside collisions.*

June 06 -- ARC-CSI Crash Conference

Topics included: accident reconstruction and simulation, injuries, case studies, vehicle rollover testing and dynamics, motorcycle reconstruction, curb strikes, brake testing, crash data recorder (CDR) legal issues. *Live staged Toyota 4-Runner rollover, an angled broadside "car split" test using a Chevrolet Impala and Geo Metro, T-bone/broadside crash tests using Honda and Suzuki motorcycles and a Mercury Sable, head-on and angled head-on crash tests between a Howe fire engine and Chevrolet Astrovan and a Chrysler Lebaron, and a multiple vehicle impact testing a Ford Crown Victoria, Subaru GL and a Chevrolet Caprice.*

Feb 06 -- Diversified Technical Systems (DTS) Training: Principles of Dynamic Data Collection

Topics included data collection fundamentals, sensors, noise reduction, grounding and shielding, data analysis, hardware and software filtering, and standards.

Feb 06 -- Crash Data Retrieval User's Conference

Topics included: ACM types, data recorded, and durability, human factors, retrieval policy, legal implications, comparison with flight data recorders, collinear motorcycle collisions with EDR equipped vehicles, 360° linear momentum involving EDR equipped vehicles, accuracy of recorded speed and the effect of braking and yawing, recorded data uncertainty, crash testing and case studies.

July 05 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Topics included: crush analysis, techniques and applicability of crush formulas, crash data recorders, motor vehicle reconstruction techniques and review of real world crashes. *Live staged frontal-broadside and curb run over collisions: Chevrolet Lumina vs. Toyota Tercel, and Chevrolet Cavalier vs. Chevrolet Lumina.*

June 05 -- ARC-CSI Crash Conference

Topics included: accident reconstruction and simulation, crash damage and energy, commercial vehicle event data recorders, skid tests and brakes, air bag deployment thresholds, child safety seats, non-OEM/fleet vehicle event data recorders, human factors considerations in fog, rain and fatigue (microsleep), and pedestrian crash analysis, case studies and injuries. *Live staged head-on collisions using Ford Crown Victorias and Hyundai Sonatas, car-to-pedestrian impacts using a Chevrolet Cavalier, and a multiple vehicle impact using a Pontiac Grand Prix, a Mazda RX-7, a semi-tractor and trailer, a Pontiac Grand Am, and a Chevrolet Cavalier.*

(Continuing Education Continued)

July 04 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Evidentiary differences of civil and criminal investigations, admissibility, test equipment for motor vehicle distance, speed and acceleration, skid/ABS tests, crash data recorders, motor vehicle reconstruction techniques and review of real world crashes. *Live staged broadside, frontal and rear-end collisions: Ford Crown Victoria vs. Chevrolet Cavalier station wagon and Chevrolet Astrovan vs. Ford Crown Victoria.*

July 04 -- Crash Data Retrieval System Operator's Certification Course, Collision Safety Institute

Course topics include: investigative steps, data retrieval methods, analysis and interpretation, applications in accident reconstruction, types of event or crash data recorder (CDR) systems, types of events, types of recorded data and their sources, historical and technical aspects of pyrotechnic restraints and the CDR technology, frontal and side airbags, seat belt pre-tensioners, seat weight sensors, data and system limitations, reliability analysis, review of multiple crash test validations and demonstrations and case studies, power interruptions and failures, anomalies, future coverage, and ownership/privacy and admissibility issues.

June 04 -- ARC-CSI Crash Conference

Course topics include: a historical perspective on crash tests, evaluating and using crash test data, seat belt analysis, crush measurement protocol, legal issues using CDR technology, crash data recorder, commercial vehicle event data recorders and testing, CDR system update and crash test data review. Crash testing focused on barrier, car-to-car crash tests, low speed, commercial vehicle testing, event data recorders (CDR), crush, NHTSA crash test data, and human surrogate testing performed at the Las Vegas Motor Speedway.

April 04 -- Car Crashes and Occupant Injuries: A Team Approach to Crash Investigation, Association for the Advancement of Automotive Medicine

Course Description: illustrates the complexities involved in understanding how people get injured in car crashes and the need for a multidisciplinary approach, and provides a unique framework for motor vehicle safety and injury control professionals to interact through lectures, discussions and examination of real world crashed vehicles. Addressed investigation of frontal, side, rear-end and rollover accidents, crash investigation techniques from medical and engineering viewpoints, occupant kinematics, injury mechanics, restraint systems effectiveness (seat belts, seat back/head restraint, air bags), and occupant compartment intrusion.

Feb 04 -- Crash Data Retrieval (CDR) Tool – User Certification Course, Institute of Police Technology and Management

Course topics include: types of event or crash data recorder (CDR) systems, available data, applications in reconstruction, reliability analysis and litigation, historical and technical aspects of the CDR technology, regulatory, development and underlying concepts of CDR systems, methodology and techniques for accessing recorded data through the vehicle diagnostic link connector (DLC), direct connection to the module and "unique" situations, case studies, and "hands-on" field exercises.

Sept 03 -- Occupant Kinematics & Injury Mechanisms During Motor Vehicle Collisions, University of California-Riverside

Course topics include: anatomy, movement in anatomical planes, kinematics & kinetics, characteristics of bone, biomechanical analysis, & injury potentials in the spine, lower and upper extremities, and the brain. Class instructor Dr. Sean D. Shimada.

(Continuing Education Continued)

Aug 03 -- Motor Vehicle Accident Reconstruction, Society of Automotive Engineers

Course Topics Included: impact analysis, linear and rotational conservation of momentum, speed determination from crash damage and tire marks, accident investigation, diagramming and photogrammetry, vehicle and human accident data, vehicle motion analysis, vibrations and directional control, occupant dynamics; analysis of car-pedestrian impacts and motorcycle accidents, computer applications, accident avoidance, human response time, driver view analysis, vehicle components and their potential relationship to accident reconstruction, accident causation and injury production, case studies and applications.

July 03 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Wooden utility pole and tree crash investigation and analysis, pedestrian and cyclist investigation, reconstruction and injury mechanisms, motor vehicle collision reconstruction, crash data recorders, Delta V, closing speed, and impact velocity. *Live staged broadside collision: Chevrolet ¾ ton pickup and Ford Aerostar.*

June 03 -- Vehicle Inspection and Analysis for Repair and Insurance Fraud, University of California at Riverside

Course Description: A detailed examination of how to conduct a vehicle inspection for a suspected repair fraud or insurance fraud, including vehicle identification and construction, inspection procedures, equipment, lamp filament analysis, identification or implications of prior damage, staged accidents, witness marks, impact damage analysis, VIN swapping or cloning, and case studies.

July 02 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Rollover crash investigation and analysis, post collision drag factors, spinning trajectories, human factors in reconstruction, nighttime visibility and pedestrians. *Live staged off-road crashes and rollovers: Ford F150 pickup and Ford LTD.*

July 01 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Passenger car and heavy truck rollover dynamics, accident reconstruction, occupant motions, injury mechanisms, crash investigation, vehicle and restraint performance, and accident statistics

July 99 -- Southwestern Assoc. of Technical Accident Investigators, Annual Meeting

Sleep Disorders and Driving. *Staged semi-trailer broadside-underride collisions: Buick Regal and Pontiac Sunbird, and staged broadside collision: Cadillac Coupe Deville and Honda Accord.*