

**AMERICAN  
BIO  
ENGINEERS**

www.americanbioengineers.com

3606 N. Rancho Dr.  
Suite # 140  
Las Vegas, NV 89130

PHONE (702) 395-6768  
FAX (702) 395-7879

*Accident Reconstruction and  
Biomechanical Specialists*

Brian K. Jones, MSBE, P.E., ACTAR, CXLT

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Michael S. Calabro, BSME  
Justin R. Brink, MSBE  
Scott C. Swinford, BSME  
Jason R. Beaty

Graphic Animator  
Will Cross II, BSMA  
Cody Cisneros, BSMA

Office Manager  
Angela Vinluan

**Brian K. Jones, MSBE, P.E., CXLT, ACTAR**  
*Accident Reconstruction/Biomechanical Specialist and Forensic Expert*

### **EDUCATION**

- Master of Science in Biomedical Engineering (Biomechanics and Human Factors Option)  
University of Nevada, Las Vegas, 2008
- Bachelor of Science in Mechanical Engineering  
North Carolina State University, 1994

### **LICENSES**

- Professional Engineer-State of Nevada, Mechanical  
License # 14708

### **ACCREDITATIONS**

- Full Long-Term Accreditation as a Traffic Accident Reconstructionist  
with the Accreditation Commission for Traffic Accident Reconstruction (ACTAR)  
Registration No. 1207

### **CERTIFICATIONS**

- Certified by Vetronix Corporation to download and analyze vehicle crash data  
utilizing the Crash Data Retrieval System
- Certified by the International Safety Academy as an XL tribometrist, proficient in wet  
& dry slip testing and the analysis of pedestrian slip/trip & fall incidents
- Certified by Vetronix/Bosch as a Crash Data Retrieval (CDR) Technician
- Certified by Vetronix/Bosch as a Crash Data Retrieval (CDR) Data Analyst and a CDR System  
Operator
- PhotoModeler Version 6 Training Courses for Collision Reconstruction

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## **EXPERIENCE**

### ***American Bio Engineers, LLC, 2010/Present***

3606 North Rancho Drive, Ste. 140  
Las Vegas, NV 89130

- Accident Reconstruction with areas of expertise in Vehicular Accidents, Vehicular Dynamics, Speed Analysis, Time/Motion Studies, Vehicle Maintenance, Biomechanics, Slip/Trip and Fall Incidents, Product Defects, and Design Strength Analysis.

Types of cases reconstructed include: Auto v. Auto Collisions, Auto v. Heavy Truck/Trailer Collisions, Auto v. Truck Collisions, Auto v. Motorcycle Collisions, Auto v. Pedestrian Collisions, Vehicle Rollovers, Brake System Failures, Engine Failures, Seat Belt Failure, and SRS Air Bag Deployment.

### ***Elliott & Jones, LLC, 1997/2010***

3606 North Rancho Drive, Ste. 140  
Las Vegas, NV 89130

- Accident Reconstruction with areas of expertise in Vehicular Accidents, Vehicular Dynamics, Speed Analysis, Time/Motion Studies, Vehicle Maintenance, Biomechanics, Slip/Trip and Fall Incidents, Product Defects, and Design Strength Analysis.

Types of cases reconstructed include: Auto v. Auto Collisions, Auto v. Heavy Truck/Trailer Collisions, Auto v. Truck Collisions, Auto v. Motorcycle Collisions, Auto v. Pedestrian Collisions, Vehicle Rollovers, Brake System Failures, Engine Failures, Seat Belt Failure, and SRS Air Bag Deployment.

- Pedestrian Walkway and Safety Consultant for the *MGM-Mirage Corporation*

### ***W.N. Morrison & Associates, 1996/1997***

William N. Morrison, Pres.  
633 South Fourth Street, Ste. 10  
Las Vegas, NV 89101

- Accident Reconstruction with areas of expertise in Vehicular Accidents, Vehicular Dynamics, Speed Analysis, Time/Motion Studies, Vehicle Maintenance, Slip/Trip and Fall Incidents, Product Defects, and Design Strength Analysis.

Types of cases reconstructed include: Auto v. Auto Collision, Auto v. Truck Collision, Auto v. Motorcycle Collision, Auto v. Pedestrian Collision, Vehicle Rollover, Time/Motion Studies, Brake System Failure, Engine Failure, Seat Belt Failure, and SRS Air Bag Deployment.

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***Accident Reconstruction Analysis Inc., 1994/1996***

Dr. Charles Manning Jr., Pres.  
5801 Lease Lane  
Raleigh, NC 27613

- Accident Reconstruction with areas of expertise in Vehicular Accidents, Vehicular Dynamics, Speed Analysis, Time/Motion Studies, Vehicle Maintenance, Slip/Trip and Fall Incidents, Product Defects, Work Place Accidents, Material Failure Analysis, Micro-Hardness Testing, Seat Belt Testing, Vehicle Fires, and Structural Fires.

***Regent Lighting Company, 1991/1992***

2611 La Vista Drive  
Burlington, NC 27253

- Laboratory Testing and Repair of Circuit Boards, Design Strength Analysis of Swing Arm Halogen Work Light, Supervision of Assembly Lines, and Quality Checks.

**HONORS AND AWARDS**

- Vice President of Society of Automotive Engineers (NCSU Chapter), 1993
- North Carolina State University Dean's List, 1989
- Included in National Register's Who's Who - Executives & Professionals
- Member of the National Scholars Honor Society

**PUBLICATIONS**

Randles, B., Jones, B., Welcher, J., Szabo, T., Elliott, D., and MacAdams, C., *"The Accuracy of Photogrammetry vs. Hands-on Measurement Techniques used in Accident Reconstruction,"* SAE Technical Paper [2010-01-0065](#), 2010.

**LECTURES PRESENTED**

- Presented an informational lecture on the retrieval and utilization of crash data stored in General Motors vehicles' sensing and diagnostic modules (SDM) to the Southern Nevada Claims Association (SNCA), Fall 2001.
- Presented an informational lecture on 3D forensic animations via Human Vehicle Environment (HVE) and 3D Studio Max in addition to fundamental concepts of accident reconstruction to the Clark County Bar Association, Spring 2003.
- Presented a CLE lecture on the human factors and biomechanics of slip, trip, and falls in conjunction with the *"Premises Liability in Nevada"* seminar for Lorman Education Services on August 17, 2006.
- Presented an informational lecture on the necessary ingredients of accident reconstruction and biomechanics to CSAA, October 2006.

- Presented a CLE lecture on principles of accident reconstruction and biomechanics to the Clark County Bar Association, September 2007.
- Presented a CLE lecture entitled "*Personal Injury Update: The Skinny on Accident Reconstruction and Biomechanics*" to the Clark County Bar Association, February 19, 2009.
- Presented a CLE lecture entitled "*Personal Injury Update: The Skinny on Accident Reconstruction and Biomechanics*" to the law office of Selman Breitman, LLP, April 8, 2010.
- Presented a CLE lecture entitled "*Slip, Trip, and Falls*" to the Richard Harris Law Firm, September 29, 2011.
- Presented a CLE lecture entitled "*Accident Reconstruction and Biomechanics in Nevada*" to the Southern Nevada Claims Association, November 9, 2011.
- Presented a CLE lecture entitled "*Accident Reconstruction and Biomechanics in Nevada*" to the law office of Ray Lego & Associates, January 13, 2012.

#### **EXPERT TESTIMONY**

- Qualified as an expert for motor vehicle accident investigation/reconstruction, pedestrian safety, biomechanics, and human factors in the Eighth Judicial District Court for the State of Nevada in and for the county of Clark.
- Qualified as an expert for accident investigation and reconstruction in the Clark County Justice Courts.
- Qualified as an expert for motor vehicle accident investigation/reconstruction, pedestrian safety, biomechanics, and human factors in the Second Judicial District Court of the State of Nevada in and for the county of Washoe.

#### **ASSOCIATIONS**

- Society of Automotive Engineers
- Southwestern Association of Technical Accident Investigators
- National Association of Professional Accident Reconstruction Specialists
- Member of the Accident Reconstruction Communications Network (ARC)
- Participating member of the American Society of Testing and Materials (ASTM)
  - Committee F13 – Pedestrian/Walkway Safety and Footwear
    - Subcommittee F13.10 – Traction
    - Subcommittee F13.20 – Biomechanics and Footwear Construction
    - Subcommittee F13.40 – Research
    - Subcommittee F13.50 – Walkway Surfaces Practices
- American Society of Safety Engineers
- National Fire Protection Association (NFPA)

### SPECIALIZED TRAINING SEMINARS ATTENDED

- "Crash Data Retrieval System" presented by *Vetronix Corporation* (Santa Barbara, CA, 2001)
- "Biomechanics of Slips and Falls" presented by *ASTM F13* (Pasadena, CA, 2003)
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2004)
  - EDR Data in Criminal Prosecution
  - Crash Data Retrieval System
  - Crush Measuring Protocol
  - Commercial Vehicle Event Data Recorders
  - Crash Testing – A Historical Perspective
  - Seat Belt Analysis
  - A Comparison of Crush Stiffness Characteristics from Partial-Overlap and Full-Overlap Frontal Crash Tests
  - A Method for Determining Crush Stiffness Coefficients from Partial-Overlap Frontal Crash Tests
  - Field Measurements
  - Momentum and CDR Output
  - HVE
- "Occupant Kinematics and Injury Mechanisms During Motor Vehicle Collisions" presented by *University California, Riverside* (Davis, CA 2004)
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2005)
  - Damage and Energy: How it Works/Why it Works
  - Pedestrian Crash Reconstruction Methodologies
  - Investigating Multi-Vehicle Pile-ups/Airbrakes
  - Influence of Fog (and poor visibility) on Driver Response
  - Case Studies of Reconstruction of Non-Conforming Pedestrian Impacts
  - Commercial Vehicle EDR
  - Skills Update: Using Crash Test Data
  - When Do Airbags Deploy: Deployment Decision Making
  - Child Safety Seat Issues in Crash Reconstruction
  - Pedestrian Crash Injuries
  - "Independent Witness" System Data Collection Capabilities
  - Crash Data Retrieval System: Developments and Future Trends
- "Forensic Analysis of Medical Records in Injury Biomechanics and Accident Reconstruction" presented by *Society of Automotive Engineers* (Troy, MI, 2005)
- Member of task force appointed to revise standard ASTM 1694-96 "*Standard Guide for Composing Walkway Surface Investigation, Evaluation, and Incident Report Forms for Slips, Stumbles, Trips, and Falls*"
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2006)
  - Motorcycle Accident Investigations

- Simulation 101: How It Actually Works
- Lower Extremity Injuries
- Vehicle Dynamics at Curb Strike
- PDOF
- A Look at Deceleration Rates for Modern Vehicles
- Collision Speed Analysis of Angular Collisions Involving Secondary Impacts
- CDR Legal Issues: Criminal
- Using Pictometry in Collision Scene Diagramming
- Untripped Rollovers
- Getting into Print as an Accident Reconstruction Author
- Identification of Unusual Tire Marks
  
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2007)
  - Hit and Run – Closing the Loop
  - Validating the SmartDrive Crash Data Unit
  - Snowmobile Accident Reconstruction
  - Seat Belt Effectiveness and Injury Correlation
  - Mechanism of Airbag Injury
  - Accident Reconstruction at Traffic Signal Intersections
  - European Accident Reconstruction and Crash Testing Techniques
  - Human Factors Beyond Perception/Reaction Time & Witness Reliability
  - Nighttime Pedestrian Collision Reconstruction Factors
  - Crash Test Analysis Workshop A: Momentum
  - Crash Test Analysis Workshop B: Complex Analyses
  - Vehicle Speed Sensor Calibration and its Potential Effect on Pre-Crash Vehicle Speed Data as Recorded by an Event Data Recorder
  - Reprogrammed PCMs and Crash Analysis
  - Angular Velocity Analysis of SUV Collisions Using PC Crash
  - The Effects of Sample Rates and Averaging Methods on Acceleration Based Skid Testing
  - Review of Low Speed Crash Tests & the Effect of Restitution
  - Event Data Recorder Over-ride Devices in Commercial Motor Vehicles
  
- "Vetronix/Bosch Crash Data Retrieval (CDR) Technician Course" presented by *CSI* (North Las Vegas, NV, 2007)
  
- "Vetronix/Bosch Crash Data Retrieval (CDR) Data Analyst Course" presented by *CSI* (North Las Vegas, NV, 2007)
  
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2008)
  - New Vehicle Technologies and Their Relationship to Proper Crash Reconstruction Techniques
  - Momentum and Energy: A Code 3 Case Study
  - Judkins Law and Its Applications to Human Factors of Collision Avoidance and Witness Recall
  - Crash Test Analysis Workshop: Motorcycle Crash Analysis
  - Engine Idle Acceleration
  - Airborne Analysis and Rotational Mechanics

- Current Trends in Pedestrian Crash Analysis
- Crash Test Analysis Workshop: Pedestrian Crash Analysis
- Close-range Photogrammetry as a Routine AR Tool
- Video Applications in Crash Reconstruction
- Reconstruction of PIT Crashes
- Crash Test Analysis Workshop: Rollovers
  
- "SATAI Conference" (Laughlin, NV, 2009)
  - Motorcycle Braking
  - Motorcycle Crush Analysis
  - The Primary Purpose of a Crash Reconstruction...Is the Crush Avoidable?
  - Demonstration of Motorcyclist PRT
  - Rider Response Evaluation: Results and Preliminary Conclusions
  - Overview of Motorcycle Safety
  
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2009)
  - Commercial Vehicle Dynamics Factors in Collision Reconstruction
  - Air Brake Fundamentals & Advanced Technology plus Air Brake Performance
  - Death Investigations & Their Psychological Effect on Police Officers and Reconstructionists
  - A Common Sense Approach to Explaining Real World Acceleration Values
  - Braking Efficiency of Motorcycles
  - CSF with SUV's in Double Steer Maneuvers
  - Workshop: Practical Applications of Accelerometer Data for Accident Reconstructionists
  - Estimation of Vehicle Speed and Trajectory Based on Video from a Vehicle Mounted Camera
  - Evaluating a Nighttime Response
  - Optics, Lighting and Visibility for the Forensic Investigator
  - Human Factors Testing
  
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2010)
  - PDOF and Angle Development Over Time
  - GM OnStar: Automatic Crash Response
  - Accelerometers and other devices used for skid and other testing for the Reconstructionist
    - Beyond the drag sled
  - Motorcycle Accident Reconstruction
  - HVE-CSI Break-out
  - Low Speed Crash Analysis
  - Using Motion Equations in Accident Reconstruction
  - Commercial Motor Vehicle Forensic Inspection for the Reconstructionist
  - Delta V, Now What?
  - Finding Speed or Acceleration from Video Frames
  - iWitness Break-out
  - Impact Speed and Post-Collision Speedometer Readings
  - GPS: The Overlooked EDR?
  - Conspicuity Sheeting, Retro Reflective Tape Wear

- "Injuries, Anatomy, Biomechanics & Federal Regulation Seminar" presented by SAE International (Troy, Michigan, 2010)
  - Next Generation Restraint Systems
  - Abbreviated Injury Scale (AIS); Injury Severity Score (ISS); Trauma Score; Harm; Injury Priority Rating (IPR); Functional Capacity Index (FCI)
  - Diagnostic Images of Injuries – Plain Film X-rays, CT, MRI
  - The Role of Alcohol
  - Anatomy, Injuries and Tolerance Parameters (By Body Region)
  - Test Devices: Basic Differences and Measuring Capabilities for Front and Side Impact Tests
  - FMVSS 201, 214 and NCAP and LINCAP – Current & Proposed Injury Criteria and their Biomechanical Basis
  - Federal Rulemaking Process and NHTSA – Legal Authorizations and Restrictions
  - Assessing Pre-existing Conditions and Previous Injury
  - Older Drivers – Special Needs
  
- "SATAI Conference" (San Diego, CA 2010)
  - Monte Carlo Analysis Methods Applied to Crash Reconstruction
  - Vehicle Off-Tracking Applied to Vehicle Crash Reconstruction
  - Advanced Digital Photography for Accident Reconstruction/Using Garmin GPS in Heavy Trucks
  
- "ARC-CSI Crash Conference" presented by ARC-CSI (Las Vegas, Nevada, 2011)
  - Do you need a Search Warrant for CDR Data?
  - What happens when a novice driver, backs a car while on the cell phone and enters the path of a motorcyclist?
  - "The Compatibility of "Push Bumpers" and Airbags"
  - A Short History of Nearly Everything (...about computers in Highway Safety)
  - "Applications of GPS Data in Collision Reconstruction"
  - Breakout Session: Occupant Dynamics Simulations in Support of Litigation using MADYMO
  - Intersection Collision: A Detailed Reconstruction from Cradle to Grave
  - The Relationships of Momentum, PDOF and Delta-V
  - Key Aspects of Highway and Roadway Design and Safety Appurtenances
  - Auto Pedestrian Collision Analysis: Applications of formulas vs. real world testing data
  - An introduction to the new CrashZone version 9 drawing program features
  
- "Side Impact Occupant Safety and CAE" presented by *Society of Automotive Engineers* (Troy, MI, 2012)
  
- "ARC-CSI Crash Conference" presented by *ARC-CSI* (Las Vegas, NV, 2012)
  - Case Studies and Reconstruction Essentials for Tread Separation Accidents Involving Axle Tramp
  - An Overview of GM Hybrid and Electric Vehicle Technology and Its Relationship to EDR Data
  - Seat Belt Analysis

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- Using ECM Diagnostic Data in Crash Reconstruction
- The Application of MADYMO to the Modeling of Real World Accidents
- Low Speed Collisions; Reconstruction Applications
- Low Speed Collisions; Biomechanical Analysis
- Drug Recognition Training
- Establishing Safe and Realistic Speed Limits
- Measuring Yaw Marks from Digital Maps
- Highway Design – Appurtenances
- ARAS 360 – Advanced Animation Made Easy