Mrizol@equityreconstruction.com

(908) 307-4528

www.equityreconstruction.com

200 Walt Whitman Ave. #1582
Mount Laurel, NJ 08054

Equity Reconstruction LLC
Accident Reconstruction and Consulting

| ACTAR #2087 | NJ Licensed Private Investigator 9717 |

Michael J. Rizol Jr.
Curriculum Vitae – October 2022

Accreditations and Qualifications

New Jersey Licensed Private Investigator	January	2021	Present		
NJOAG Working Group on Police Vehicular Pursuit Policy	October	2020	-	December	2020
NJSP Motor Vehicle Crash and Vehicular Pursuit Review Board	March	2014	-	December	2020
Accepted in Court as an Expert in Accident Reconstruction				October	2011
Accreditation Commission for Traffic Accident Reconstruction				September	2009

Professional Experience

Kean University		August	2021		Present	
Equity Reconstruction LLC, Mount Laurel, New Jersey		December	2020	-	Present	
New Jersey State Police, Trenton, New Jersey		September	1994	-	December	2020
Traffic and Public Safety Office	Captain	March	2019	-	December	2020
Traffic and Public Safety Office	Lieutenant	March	2014	-	March	2019
Troop D Administration Office	Lieutenant	September	2013	-	March	2014
Fatal Accident Unit – Unit Head	DSFC	February	2013	-	September	2013
Fatal Accident Unit – Asst. Unit Head	DSFC	March	2011		February	2013
Fatal Accident Unit – Squad Leader	DSG	August	2008	-	March	2011
Fatal Accident Unit	Detective I	June	2006	-	August	2008
Field Operation Section	Trooper	September	1994	-	June	2006
Camden County Probation, Camden, New Jersey	Officer	September	1992	-	April	1994
Gill and Associates, Philadelphia, Pennsylvania	Investigator	July	1990	-	September	1992

Professional Affiliations

National Association of Traffic Accident Reconstructionists and Investigators	January	2021
National Association of Professional Accident Reconstruction Specialists	December	2020
New Jersey Association of Accident Reconstructionists	January	2010
New Jersey Police Traffic Officers Association	June	2013
International Network of Collision Reconstructionists	November	2009

Education

LaSalle University, Philadelphia PA, Bachelor of Arts Degree Criminal Justice	May	1990

Teaching Experience

Basic Crash Investigation - Burlington County Emergency Services Training Center	September	2022
Advanced Crash Investigation - Burlington County Emergency Services Training Center	June	2022
Basic Crash Investigation - Burlington County Emergency Services Training Center	May	2022
NJSBA/NJICLE – Motorcycle Accident Investigation	March	2022
Advanced Crash Investigation - Ocean County Police Academy	September	2021
Basic Crash Investigation - Burlington County Emergency Services Training Center	August	2021

Specialized Crash Investigation Training

New Jersey Association of Accident Reconstruction Seminar **8 hours September 2022**
- Courtroom testimony

SAE Accident Reconstruction Digital Summit **2 hours March 2022**
- Autonomous vehicles and advanced driver assist systems
- Heavy vehicle event data recorders
- Hindsight bias
- Essential tools for accident reconstruction photography

New Jersey Association of Accident Reconstruction Seminar **2 hours July 2021**
- Careless v. Reckless
- Energy Basics & Crush

Pennsylvania State Police Collision Reconstruction Seminar **6 hours November 2020**
- Bicycle crash investigation
- EDR Survivability
- EDR Update

NAPARS Annual Joint Conference **12 hours October 2020**
- Motorcycle turning
- Investigating rollover crashes
- GoPro GPS data analysis
- Perception-reaction time
- Obtaining chip-level data from modules
- Analysis of ECM data from new Freightliner engines

Advanced Collision Reconstruction with Excel Applications **40 hours December 2019**
- Linear momentum
- Working with other than post impact speeds
- Working with Delta-V and PDOF
- Critical speed
- Time-distance
- Airborne equations
- Pedestrian investigations

Event Data Recorder use in Traffic Crash Reconstruction Level II **40 hours September 2019**
- Solving momentum problems with EDR data when some data elements, such as departure speeds, departure angles, etc. are missing.
- How restitution affects your momentum-based reconstruction
- The effects of rotation on Delta-V and closing speed (Effective Mass Ratio)
- The effects of external forces on momentum reconstructions
- Using new Part 563 data elements

Event Data Recorder use in Traffic Crash Reconstruction Level I   **40   hours   July   2019**
- Analyzing EDR data regardless of manufacturer
- Determining if the event recorded is from your crash
- Identifying circumstances where EDR data is incomplete or has nothing to do with your crash
- Understanding Delta-V
- Using EDR Delta-V along with other scene evidence to get closing speed and speed at impact
- Using Delta-V from the vehicle with the recorder to determine the Delta-V of the other vehicle
- Recognizing vehicle operational conditions that would cause EDR speed data to not accurately reflect true vehicle speed
- Determining the effect that equipment modifications have on EDR speed data
- Using pre-crash data to identify when a vehicle lost control in order to select the peak speed before the vehicle lost control
- Calculating the appropriate ranges for speed at impact for different EDRs
- Using time-distance analysis to estimate the point of first perception
- Utilize EDR data to gain previously unavailable insight into driver behavior and approach speed
- Using OEM specific Excel templates to analyze EDR data
- Supporting Frye and Daubert hearings with references to copyrighted research and non-copyrighted items
- Analytical tool techniques for heavy truck data

New Jersey Association of Accident Reconstruction Seminar   **8   hours   March   2019**
- Video Analysis

Pennsylvania State Police Collision Reconstruction Seminar   **24   hours   October   2018**
- Sensitivity Analysis
- Motorcycle speed from crush
- Distracted driving
- NTSB and autonomous vehicle crashes
- Acceleration
- Heavy Vehicle electronic logging devices
- EDR update
- Pedestrian walking speeds

Pennsylvania State Police Collision Reconstruction Seminar   **24   hours   October   2017**
- Human factors
- Case preparation
- Simultaneous equations
- Truck Inspections
- EDR update
- Drugged driving
- Autonomous vehicles
- Infotainment systems

Pennsylvania State Police Collision Reconstruction Seminar   **24   hours   October   2016**
- Testifying in court
- Trailer stability
- Emergency Vehicle Collisions

- Minimizing speed ranges
- Driver expectancy at night
- Pedestrian crashes
- EBS, Delta-V and the first law of thermodynamics

Advanced Collision Reconstruction with CDR Applications	**40**	**hours**	**July**	**2016**

- Overview of pre-crash data sources and recorded crash pulse data
- Analyzing CDR data in the context of your reconstruction
- Calculating Delta-V from acceleration data
- Calculating impulse from x/y Delta-V data
- Calculating PDOF from x/y Delta-V data
- Calculating impact & post-impact velocities from CDR data

Pennsylvania State Police Collision Reconstruction Seminar	**24**	**hours**	**October**	**2015**

- Using EDR Delta-V to calculate closing/impact speed
- Occupant Kinematics
- Vehicle operator fatigue in accident reconstruction
- Forensic evidence from traffic crash fatalities
- Human factors
- CMV regulations
- Data latency and its influence on EDR speed at impact
- EDR update

Pennsylvania State Police Collision Reconstruction Seminar	**24**	**hours**	**September**	**2014**

- Spin Analysis
- Data sources from commercial motor vehicles
- UAV/Aerial Photography
- EDR update
- Tire Failure
- Smart phone applications for crash reconstruction
- Video analysis
- Nighttime pedestrian crashes

Pennsylvania State Police Collision Reconstruction Seminar	**24**	**hours**	**September**	**2012**

- EDR update
- Investigative photography
- Post-crash vehicle inspections
- Evidence collection at crash scenes
- Forensic mapping
- Damage profile measuring procedures

Occupant Kinematics	**40**	**hours**	**January**	**2011**

- Calculation of PDOF
- Occupant movement
- Types of injury - contact and non-contact
- Injury forces
- Vehicle interior examination
- Injury terminology
- Occupant protection systems
- Reading medical and autopsy records
- Calculation of Delta-V

ARC-CSI Crash Conference	**30**	**hours**	**May**	**2010**

- GM OnStar: Automatic Crash Response
- Accelerometers and other devices used for skid and other testing for the Reconstructionist

- Motorcycle accident reconstruction
- Low speed crash analysis
- Finding speed or acceleration from video frames
- Impact speed and post-collision speedometer readings

Motorcycle Crash Investigation   **40**   **hours**   **September**   **2009**

- Analyzing and interpreting the motorcycle crash scene
- Acceleration and deceleration characteristics of the motorcycle
- Instability and handling characteristics in motorcycles
- Motorcycle tires, helmets, and other equipment
- Practical application of formulas

Special Problems in Traffic Crash Reconstruction Conference   **32**   **hours**   **April**   **2009**

- Validation for the use of drag sled in determining the coefficient of friction
- The application of the throw distance formula
- Damage profile analysis
- Graphing Ford ACM and PCM data
- Commercial vehicle foundation brakes
- Hybrid vehicles
- Modern methods for measuring coefficient of friction
- Using simulation to reconstruct and visualize motor vehicle crashes
- Airborne trajectories and analysis
- Lamp analysis

CDR Technician Training   **8**   **hours**   **September**   **2008**

- Collecting EDR data using the Bosch CDR Tool
- Troubleshooting data collection issues

Applied Physics for the Traffic Crash Investigator   **40**   **hours**   **September**   **2008**

- Work and energy
- Conservation of linear momentum and Impulse
- Uniform projectile motion/airborne equations
- Uniform circular motion/critical speed
- Tire forces and tire mark evidence
- Time-distance relationships
- Energy loss in collisions through crush damage
- Low-speed collision considerations including coefficient of restitution

Quickmap Operator/Instructor Certification   **8**   **hours**   **June**   **2008**

- Operation of the LTI laser
- Use of Quickmap software

Pedestrian / Bicycle Crash Investigation   **40**   **hours**   **May**   **2008**

- Pedestrian crash problems
- Pedestrian impact dynamics
- Types of data: objective, subjective and performance
- Collection of data
- Pedestrian conspicuity
- Reaction time/human factors
- Reconstruction techniques
- Bicycle collision analysis
- Hit and run investigation techniques

Vericom Computers Accelerometer Familiarization   **16   hours   May   2008**
- Basic physics for the reconstructionist
- Acceleration and friction
- Vehicle design and the impact on acceleration/stopping
- Overview of Vericom VC3000 operation
- Hands-on acceleration and skid testing
- Comparing a good brake test vs. testing errors
- Review and analysis of acceleration and brake data
- Calibration check procedure and court presentation

Special Problems in Traffic Crash Reconstruction Conference   **32   hours   April   2008**
- Sudden acceleration incident investigation
- Comparing methods of measuring drag factor
- Depositions
- Experiments in crash reconstruction
- Accounting for impulse and rotation
- Driver response choices and times
- Validating the "f" in Searle
- EDR update

Inspection and Investigation of Commercial Motor Vehicle Crashes   **40   hours   March   2008**
- Tractor-trailer nomenclature
- Brake systems: configuration and operation
- Wheels, rims and tires
- Steering suspensions and frames
- Trailer coupling devices - fifth wheels
- Driver concerns - log books
- Center of mass determinations
- Skid mark measurements and speed analysis
- Jackknifing, rollover, and weight shift
- Vehicle dynamics in braking

Advanced Traffic Accident Reconstruction using Microcomputers   **40   hours   March   2008**
- Use of AR Wincrash software

Crash Investigation Using Momentum Analysis   **24   hours   November   2007**
- Inline momentum analysis
- 360 degree momentum analysis
- Vector sum diagraming

Traffic Crash Reconstruction Update   **40   hours   August   2007**
- Geometry, trigonometry and selected mathematical topics
- Dynamics and Newton's Laws of Motion
- Skid analysis and testing
- Critical speed yaw analysis
- Time-distance analysis
- Pole and narrow object impacts
- Conservation of linear momentum
- Fundamentals of rollover crash reconstruction
- Uniform projectile motion and airborne speed analysis
- Using simultaneous equations to solve in-line collisions

Energy Methods & Damage Analysis in Traffic Crash Reconstruction　　40　hours　June　　2007
- Crush measuring protocol and measuring techniques
- Energy concepts and analysis
- Determining appropriate post-impact drag factors
- Understanding EBS and Delta-V
- Conservations of linear momentum and Delta-V vectors
- Introduction to crush and Hooke's Law
- Collision analysis using damage momentum
- Understanding and determining stiffness coefficients
- Damage (crush) analysis
- Pole impacts and fracture energy

Human Factors in Traffic Crash Reconstruction　　40　hours　April　　2007
- Factors affecting driving performance
- The nature of driver perception and reaction
- Daytime vs. nighttime crashes
- Driver looking behavior
- The value and reliability of eyewitness evidence
- Eyewitness evidence versus physical evidence
- Important vehicle and roadway factors that should be considered

Computerized Collision Diagraming　　8　hours　March　　2007
- Use of AutoSketch drawing software

Crash Data Retrieval Systems Technician and Analyst Course　　40　hours　October　　2006
- History of event data recorders (EDR) and the Bosch CDR Tool
- Collecting EDR data using the Bosch CDR Tool
- Troubleshooting data collection issues
- Preventing spoliation of EDR data
- Legal considerations
- Interpreting EDR crash data
- Deployment and non-deployment events
- Ignition cycles
- Delta-V
- Manufacturer specific information
- Effect of tire size change
- Closing velocity calculations

Vista FX 3D – Computer Aided Drawing Software School　　40　hours　October　　2006
- Use of Vista FX 3D drawing and animation software

Traffic Crash Reconstruction　　80　hours　June　　2006
- Kinetic Energy
- Newton's laws of motion
- Vehicle dynamics
- Time and distance
- Momentum (360 degrees)
- Airborne analysis
- Critical speed
- Scale drawing

Vehicle Dynamics　　40　hours　May　　2005
- Newton's laws of motion
- Coefficient of friction and drag factor

- Introduction to basic motion equations - velocity, time, acceleration and distance
- Speed estimates using sideslip equations
- Momentum (in-line)
- Kinetic Energy
- Speed estimates from irregular skid marks

Crash Investigation 2   **80   hours   May   2005**
- Scene mapping
- Tire examination
- Vehicle damage documentation
- Vehicle behavior in a collision
- Lamp examination
- Information from the road
- Nighttime accident photography

Basic Police Photography   **40   hours   March   2001**
- Use of digital cameras
- Analyzing the crash scene
- Close up documentation
- Lighting conditions and flash photography
- Nighttime photography
- Photographing vehicle damage
- Photographing human body injury

Crash Investigation 1   **80   hours   February   2000**
- Preparation for traffic crash investigation
- Information from and about people
- Information from vehicles
- Information from roads
- Measuring and mapping the crash scene
- Photographing the crash scene and damaged vehicles

Total Crash Investigation Training   **1260   hours**

Other Police Training

Traffic Incident Management	4	hours	April	2015
Executive Leadership	40	hours	March	2015
Midlevel Management School	40	hours	December	2011
14th Annual Advanced Homicide Investigation Conference	40	hours	June	2007
FBI Advanced Criminal Investigation	8	hours	June	2006
Front Line Supervisory Training School	40	hours	January	2006
Criminal Investigation School	80	hours	January	2002