



Michelle L. Fish
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Employment

2012 to present: **Principal, Rich Consulting, LLC**

- Accident reconstruction training

2014 to present: **Adjunct Instructor for Institute of Police Technology and Management** (University of North Florida)

- Event Data Recorder Technician Instructor

2000 to 2015: **Trooper for Ohio State Highway Patrol**

- Patrol
- Field Reconstructionist

Crash Investigation/Reconstruction Background

I have been the on-scene investigator of approximately 3500 crashes. I have reconstructed 20 crashes.

Education

University of Akron

- Associate degree in Criminal Justice in December 2001
- Bachelor degree in Biology in December 2003
- Bachelor degree in Mechanical Engineering in May 2016

Accreditation

May 2015 **Accreditation Commission for Traffic Accident Reconstruction**
Certificate of Full Accreditation #2551

Specialized Education

- Sep. 2000: 135th Cadet Class (1020 hours)
- Included 124 hours of Basic Crash Investigation
- Dec. 2000: 135th Class Post Graduate Training (40 hours)
- Dec. 2004: Alcohol Detection and Apprehension (40 hours)
- Oct. 2005: Technical Crash Investigation (80 hours)
- Dec. 2005: Traffic Crash Reconstruction. University of North Florida (80 hours)
- May 2006: Forensic Mapping Specialist (Leica) Electronic Total Station (40 hours)
- Jan. 2006: Ohio State Highway Patrol Crash Reconstruction In-Service (16 hours)
- Aug. 2006: Pedestrian and Bicycle Crash Investigation. University of North Florida (40 hours)
- Aug. 2006: Applied Physics for Traffic Crash Investigator. University of North Florida (40 hours)
- Sep. 2006: Illinois Association of Technical Accident Investigator's Annual Conference (24 hours):
- Momentum Methods
 - Computer Animation
 - Planar Impact Mechanics Crash Testing
- Apr. 2007: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):
- Pedestrian Collision Crash Testing
 - Case Preparation
 - Pole Impact Crash Testing
 - Bus/Passenger Vehicle crash Testing

- Jun. 2007: Energy Methods and Damage Analysis in Traffic Crash Reconstruction. University of North Florida (40 hours)
- Sep. 2007 2007 Illinois Association of Technical Accident Investigators Conference Bloomington, IL (24 hours).
- Momentum Methods
 - Crash Testing
 - Computer Animation
- Nov. 2007: Inspection and Investigation of Commercial Vehicle Crashes. Wyoming Highway Patrol (40 hours)
- Nov. 2007: Ohio State Highway Patrol Crash Reconstruction In-Service (16 hours)
- Apr. 2008: Special Problems in Traffic Crash Reconstruction—University of North Florida (28 hours):
- Multiple Departure COLM Crash Testing
 - Validating the f in Searle
 - Accounting for Impulse and Rotation
 - Event Data Recorder Update
- Oct. 2008: New Jersey Association of Accident Reconstructionists Joint Conference (24 hours):
- Event Data Recorder Update
 - Critical Speed Yaw
 - Airborne Testing
 - Lateral Pole Impact Crash Testing
- April 2009: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):
- Event Data Recorder Update
 - Single Image Planar Rectification and Multi-Image and Close Range Photogrammetry in Crash Reconstruction
- Sep. 2009: Illinois Association of Technical Accident Investigator's Annual Conference (24 hours):
- Critical Speed Yaw Analysis and Lane Change Maneuvers
 - Side Impact Crash Testing
 - CDR Update and Validation Testing

- Apr. 2010: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):
- Case Preparation
 - Planar Impact Mechanics
 - Instrumentation and Crash Testing for Crash Reconstruction
- Sep. 2010: Illinois Association of Technical Accident Investigator's Annual Conference (24 hours):
- Vehicle Rollovers
 - Tire Forces
 - Event Recorder Update
 - Pedestrian Collision Reconstruction
- Oct. 2010: Maryland Association of Traffic Accident Investigators joint Conference (24 hours):
- Truck Rollovers
 - Truck Underrides
 - Truck Underride Crash Testing
- May 2011: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):
- Motorcycle/Car Impacts
 - Event Data Recorder Update (ver 3.8)
 - Passenger Car Rollovers
 - Motorcycle/Car Crash Testing
 - Rollover Crash Testing
- August 2011: How to Start, Build and Run a Successful Expert Witness Practice. SEAK (17 hours):
- Bulletproofing Yourself: Your CV, Qualifications, Marketing Activity, and Web Site
 - Bulletproofing Your Opinion
 - Best Practices in Forensic Office Management
 - Best Practices in Dealing with Counsel
 - Best Practices in Report Writing
 - Deposition Best Practice
- Oct. 2011: NATARI Combined Conference Harrisburg, Pennsylvania (24 hours)
- Pedestrian Collisions
- March 2012: How to Be An Effective Expert Witness SEAK (17 hours):
- Deposition Skills
 - Direct Examination

- Persuasion Skills
- Cross Examination Skills

May 2012: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):

- EDR Update (Version 8.0)
- Collision Analysis
- Night and Low Light Digital Photography
- Safety Belt Restraint System Overview
- GPS Forensic Investigation
- Trace Evidence Locating, Collecting and Analysis

September 2012: Crash Data Retrieval Data Analyst (Ver. 8.2)

IPTM/University of North Florida (40 hours)

- History of Stored Accelerometer Data
- Event Data Recorder Extraction Techniques
- Event Data Analysis Overview
- Practical Application of EDR Data and OEM Reports
- Advanced Field EDR Collection
- Commercial Motor Vehicle Data Basics
- Field Inspection
- Current Updates and Changes in EDR Technology

April 2013: How to Be An Effective Expert Witness SEAK (17 hours):

- How to protect your report, yourself, your opinion from Daubert
- How to draft a powerful, persuasive, and understandable report
- How to document your assignment
- How to document your qualifications.

May 2013: Special Problems in Traffic Crash Reconstruction. University of North Florida (28 hours):

- Motorcycle Modifications and How They Affect Your Reconstruction
- Investigating Pedestrian/Bicycle Crashes
- Advanced Momentum Concepts
- Traffic Crash Reconstruction – Texting and Driving
- Minimizing Speed Ranges
- Offset Collinear Collision Analysis
- Occupant kinematics Case Studies
- Event Data Recorder Update 2013
- The Effect of Tinted Headlights

September 2013: Pennsylvania State Police Collision Reconstruction Seminar (24 hours):

- Evaluating a Driver's Response at Night

- Pedestrian Strike Visibility Case Study
- Motorcycle Crash Analysis
- Restitution and Why it will be important to you.

April 2014: Special Problems in Traffic Crash Reconstruction (32 hours)

- The Presentation: Defending Your Work—Preparing for the Defense Process
- Post Crash Safety Seat Inspections

May 2015: Special Problems in Traffic Crash Reconstruction (32 hours)

- Critical Speed Yaw or Spin?
- Motorcycle Swerving
- Nighttime Flash Photography Techniques
- From Crash to Court
- Crush, Stiffness Values, and Force Balance Case Study Application

March 2016: Comprehensive Air Brake System Training Program Bendix Online (4 hours)

May 2016: Reconstructing a Crash Utilizing Human Factors Research

- Perception Reaction Time (PRT)
- Potential Hazards
- IDRR Software
- Nighttime Analysis
- Headlight Analysis
- Recognition Distance
- Weather / Glare
- Ability to estimate PRT
- PRT Lead Vehicle
- Steering Vehicle
- Gap Acceptance

June 2016: Advanced Pedestrian-Bicycle Crash Investigation

- PedBike 2000 Software
- Injury Analysis
- Field Crash Studies
- Human Factors

September 2016: Optics, Lighting, Visibility and Digital Photography for the Forensic Investigator

- Optics
- Lighting
- Visibility
- Digital Photography

Court Experience

I have provided criminal and civil testimony in the following Ohio courts:

- Licking County Municipal Court
- Franklin County Courts
- Summit County Courts and Common Pleas
- Stark County Courts and Common Pleas

Publications

Rich, Andrew and Michelle Fish-Rich. "Using Microsoft Excel for Traffic Crash Reconstruction." *Impact*, Volume 24, No. 2. Autumn 2016.

Rich, Andrew, William Wright, and Michelle L. Fish-Rich. "EDR Delta-V Reliability and Restitution Values for Six Low- and Moderate-Speed Collinear Central Crash Tests." *Accident Reconstruction Journal*, Volume 20, No. 6, November/December 2010.

Rich, Andrew S., Michelle L. Schramm., et al. "2008 Joint Conference Lateral Pole Crash Test Results." *Momentum*, Volume 16, Issue 1, April 2009.

Rich, Andrew S., Michelle L. Fish-Rich. *Fundamentals of Statistics for Traffic Crash Reconstruction*. IPTM Press, University of North Florida. ISBN 978-1-934807-13-2.

Invited Lectures

Using Microsoft Excel for Traffic Crash Reconstruction

- Ohio Traffic Accident Reconstruction Association, London, Ohio – January 22, 2010
- Illinois Association of Technical Accident Investigator 2010 Conference, Bloomington, IL – September 14, 2010

- Pennsylvania State Police Academy (3-day class), Harrisburg, Pa - February 2011
- University of North Florida, Jacksonville, FL – May 4-5, 2011.
- Brunswick Police Department (3-day class), Brunswick, Maine – August 6-8, 2013
- NJAAR (3-day class) Edison, NJ - January 15-17, 2014
- Ohio Traffic Accident Reconstruction Association. West Chester, Ohio— November 2-4, 2016.

Applied Statistics and Utility Pole Crash Reconstruction for the Collision Reconstructionist

- West Chester, Ohio Police Department – September 5, 2008

Energy Methods (Crush)

- West Chester, Ohio Police Department – November 1, 2016

Research & Crash Testing

2007 to present: Member of the Crash Test Team for University of North Florida (IPTM)

- Low-Speed Impact Tests to Determine Coefficient of Restitution
- Event Data Recorder Delta-V Validation
- Planar Impact Mechanics
- Critical Speed Yaw
- Balancing Collision Forces Validation Tests
- Lane Change Maneuver
- New Jersey Barrier Impacts
- Three-car Collinear Impact
- Airborne Vehicle Testing
- Frontal Pole Impact Testing
- Lateral Pole Impact Testing
- Multiple Departure Planar Impact Mechanics
- Drag Sled Validation Tests
- Effects of ABS Braking on Grass
- Pedestrian Crash Testing
- Tractor Trailer Skid Testing
- Motorcycle Sliding Friction
- Motor Vehicle Rollovers
- Motor Vehicle Rollover Drag Factor Test on Turf
- Coefficient of Friction Determination

Letters of Commendation

During my career with the highway patrol, I received twelve letters of commendation for patrol duties.

Awards

- Safe Driving Award- 5 years 2005, 10 years 2010.
- Health and Physical Fitness Award 2002, 2004, 2006, 2008, 2010, 2012.

Affiliations

- Society of Automotive Engineers
- Professional Society of Forensic Mapping, 2006
- Ohio Traffic Accident Reconstruction Association, 2015