

Michael J. McCort, M.S., P.E.

Compass Consulting Engineers P.C.
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EDUCATION

University of Colorado – Boulder, Colorado

- M.S. Civil Engineering, 1994 – 1997

Ohio State University – Columbus, OH

- B.S. Civil Engineering, 1985 - 1990

ACCREDITATIONS

- Professional Engineer (PE), Colorado #31713
- Professional Engineer (PE), Alabama #28398-E
- Engineer in Training (EIT), Ohio
- Accreditation Commission for Traffic Accident Reconstruction (ACTAR) #1002 (1999)

PROFESSIONAL EXPERIENCE

Compass Consulting Engineers P.C. – Westminster, Colorado

President, Senior Engineer, 2017 – Present

- Perform investigation, reconstruction and analysis of motor vehicle accidents, including automobiles, SUV rollovers, heavy vehicles & equipment, bicycles and motorcycles and pedestrian impacts
 - Vehicle accident reconstruction – bicycles, motorcycles, automobiles, SUV, heavy trucks & equipment
 - Reconstruction of motor vehicle accidents using recognized software tools including EDCRASH, EDSMAC, SIMON, HVE 3D, PhotoModeler, 3D Studio Max, Cloud Compare, Recap and AutoCAD

Ponderosa Associates Ltd. – Lafayette, Colorado

Senior Engineer, 1997 – 2017

- Performed investigation, reconstruction and analysis of motor vehicle accidents, including automobiles, SUV rollovers, heavy vehicles, bicycles and motorcycles and pedestrian impacts
 - Developed in-house vehicle instrumentation capabilities with Isaac Instruments equipment for measuring accelerations and yaw, pitch roll rates in vehicles
 - Developed in-house capability to download ECM data from heavy truck engines
 - Participated in full scale roll over test of a 1991 Ford Explorer. Performed post reconstruction to validate methods and values used
 - Operated 4WD utility vehicle for full-scale dynamic stability and rollover testing. Performed full-scale testing on vehicle to determine roll and pitch stability and center of gravity
 - Designed and performed static load testing to model head forces to a vehicle roof structure in a rollover accident
 - Performed static and dynamic load testing on various vehicle components
- Performed finite element modeling and strain gage testing of vehicle structures including 40 foot transit bus, 60 foot articulated bus and double decker intermodal bus structures
- Performed strain gage testing of full-scale bus during driving maneuvers. Performed fatigue analysis on structure
- Performed investigation and analysis of building code issues, OSHA regulations, structural and civil design issues and construction accidents

National Institute of Science and Technology – Boulder, CO

Professional Research Experience Program (PREP) Fellow, 1994 – 1997

- Performed research related to the measurement of seismic level ground vibrations.
 - Established a continuous vibration monitoring station next to a construction site that can be accessed for data via an internet website
 - Performed vibration measurements and analyses using seismic accelerometers and Fourier spectral analysis software
 - Reviewed design documents pertaining to Advanced Technology Laboratory (ATL) vibration issues

Knott Laboratory – Denver, CO

Consulting Contract Engineer as graduate student under direction of John Dow, PhD, Graduate Advisor, University of Colorado, 1995 – 1996

- Performed frequency analysis of recorded police dispatch tapes to determine if the sound of a gunshot was recorded on the tape
- Performed frequency analysis of audio from a video recording to determine if illegal proprietary equipment is being used in a factory

Stone & Webster Engineering – Englewood, CO

Career Development Engineer, 1990 – 1993

Engineer, 1993 – 1994

- Performed design and analysis of reinforced concrete and steel structures
 - Navajo Scrubber Project, Page, Arizona, Salt River Project
 - Healy Clean Coal Project, Healy, AL, Alaska Industrial Development and Export Authority:
 - Joppa Steam Electric Station, IL, Electric Energy, Inc.
 - Riverside Generating Plant, Minneapolis, MN, Northern States Power Co.
 - Rocky Flats D.O.E. Plant, Golden, CO, EG&G
 - Bradley Lake Hydroelectric Power Plant, Homer, AK, Alaska Energy Authority:

Ruhlin Construction Company – Columbus, OH

Student Engineer – Cooperative Education Program in association with The Ohio State University, 1986 – 1990

- Performed tasks associated with large construction projects including assistance to job superintendents, change order review, estimation take-off, and participation in contract bid packages
 - State Office Tower II Construction Project, Columbus, OH, State of Ohio
 - Columbus City Center Mall, Columbus, OH, State of Ohio

ADDITIONAL PROFESSIONAL ACTIVITIES

- Zero to Hero in Cloud Compare, March 5 – 6, 2024 Online course.
- Response User Forum and Training, Driver Research Institute, February 18 – 20, 2024, Long Beach, CA
- Commercial Vehicle A.D.A.S Evolution, Performance, Testing & Applications, NAPARS Zoom presentation: Plant, Grimes, Cheek, September 8, 2023
- Heavy Vehicle EDR Update, NAPARS Zoom presentation: James Loftis, July 28, 2023
- Introduction to Digital Video Analysis for Crash Reconstruction, NAPARS Zoom presentation: Joe Warren, June 16, 2023
- HVE Forum by Engineering Dynamics Corporation, February 24 –26, 2023 Fort Meyers, FL
- Training for use of UAV for scene surveys, 2021, multiple training dates, Westminster, CO
- Human Factors for Traffic Crash Reconstruction, February 8 – 12, 2021, Westminster, CO
- HVE Forum by Engineering Dynamics Corporation, February 24 – March 1, 2019, Las Vegas, NV
- Lecturer: Inner Circle of Investigators – Drones for Real World Litigation: Standards, Requirements for Use, and the new Scanner in the Sky, October 24, 2019
- Full scale vehicle testing, Chevrolet Impala, September 2018, High Plains Race Track, CO
- Full scale vehicle testing, Crown Victoria Police Interceptor, High Plains Race Track, CO
- HVE Forum by Engineering Dynamics Corporation, March 2-4, 2015, Austin, TX
- Colorado Defense Lawyers Association – Trial Academy, Nov 7, 2014, Denver, CO
- HVE Forum by Engineering Dynamics Corporation, February 24-28, 2014, St. Petersburg, FL

- PC Crash Training Essentials: Introduction/Looking at the Results/Vehicle Control, November 19-21, 2013
- Lecturer: Science Technology Engineering Math (STEM) for Adams 12 High School, Ponderosa Associates, March 20, 2013
- Beta Tester, HVE Software by Engineering Dynamics Corporation, 2012-present
- HVE Forum by Engineering Dynamics Corporation, Feb 21-25, 2011, Scottsdale, AZ
- How to Interpret Commercial Vehicle Event Data Recorders, 40 hr, University of Tulsa Continuing Engineering & Science Education, February 22-26, 2010
- Bosch 8 hr. Crash Data Retrieval (CDR) Technician Course, Grand Junction, CO, 12/18/2009
- Bosch 32 hr. Crash Data Retrieval (CDR) Analyst Course, Grand Junction, CO, 12/18/2009
- Vetronix Crash Data Retrieval System (CDR) – Instruction on use of CDR for airbag module (black box) downloads (<http://www.vetronix.com/diagnostics/cdr/>)
- Airbag Deployment Demonstration – Full scale test fire of airbag
- Lieka Total Station survey instrument and Mapscenes data acquisition system for Pocket PC. Beta testing for Mapscenes system and training session on Lieka TS
- Lecturer: Samford University Cumberland School of Law Continuing Legal Education seminar. Truck Accident Litigation, “Effective Use of Animation and Reconstruction Experts”, November 16, 2007, Birmingham, AL
- Driver: Full scale crash test of a Toyota Corolla into a bollard post. Performed instrumentation of bollard with strain gages and performed analysis with Algor Finite Element Analysis software.
- Caterpillar 01 Introduction to Electronic Technician (ET), Wagner Equipment Co., October 12, 2006, Lafayette, CO
- Algor Finite Element Analysis Courses 906 and 930 Static Analyses and Non Linear Dynamic Analyses, April 3-5, 2006, Denver, CO
- Participant: Full scale roll over test of a 1991 Ford Explorer 2WD utilizing remotely operated throttle, brakes and steering with trip mechanism due to tire/road friction only.
- Lecturer: Presentation on Rollover Reconstruction and a Full Scale Rollover Test of a Ford Explorer, Attorneys Information Exchange Group (AIEG), August 26, 2005, Denver, CO
- HVE Forum by Engineering Dynamics Corporation, May 28-30, 2003, Las Vegas, NV
- SAE Seminar – Braking Performance of Heavy Commercial Vehicles, September 26-27, 2002, Lafayette, CO
- SAE TOPTEC – Passenger Vehicle Rollover TOPTEC: Causes, Prevention and Injury Prevalence, April 22-23, 2002, Scottsdale, AZ
- HVE Training Course by Engineering Dynamics Corporation, November 12-13, 2001, Lafayette, CO (<http://www.edccorp.com/educate.html>)
- SAE TOPTEC – Accident Reconstruction TOPTEC: Special Topics, May 22-23, 2001, Tempe, AZ
- Lecturer: Yaw Marks and Rollovers segment of Accident Reconstruction Seminar, Ponderosa Associates, October 17, 2000

PROFESSIONAL AFFILIATIONS

- Society of Automotive Engineers (SAE)
- American Society of Civil Engineers (ASCE)
- Chi Epsilon Civil Engineering Honor Society
- National Society of Professional Engineers
- National Association of Professional Accident Reconstruction Specialists

PUBLICATIONS

- Master’s Thesis: The Theoretical Basis of Digital Signal Processing and Implementation to Measure Ground Vibrations
- A. Sances, S. Kumaresan, C. Finocchiaro, M. McCort: Occupant Kinematics and Biomechanical Injury Evaluation in Recreational Rides. Twenty First Southern Biomedical Engineering Conference, Sept. 28-29, 2002.

- S. Kumar, K. Schrum, D. Sicking, D. Holder, C. Wein, M. McCort: Biomechanics of Penetrating Trauma and Injury Mitigating Protective Measures in Guardrail Motor Vehicle Crashes. *Journal of Biomedical Science Instrumentation*, 57(2), 128-135, 2021.

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