CURRICULUM VITAE OF
KENT E. BOOTS, ACTAR

Kent E. Boots and Associates
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Employment History

- Kent E. Boots & Associates (sole proprietor) Auburn, CA: August 2003 – Present
- FactualDiagrams.com (sole proprietor) Auburn, CA: October 2007 – July 2019
- Institute of Police Technology and Management (IPTM) Adjunct Faculty, April 2024 to present
- Riverside Community College, Adjunct Faculty – May 2002 to August 2006
- Law Enforcement Training Center, The Office of the Sheriff, Contra Costa County, August 2005 to March 2009
- Rancho Santiago Community College, Criminal Justice, Instructional Associate - December 2001 to April 2006
- Rudy Degger & Associates, Inc. Rocklin, CA: January 2006 – December 2007
- Orange County Sheriff's Department (CA): September 1986 – August 2006
- United States Marine Corps, Honorable discharge: September 1982 - August 1986

Educational Background

- **Riverside Community College, Riverside, CA**
  - A.S. Degree with distinction - Administration of Justice, January 1992
- **Rancho Santiago Community College, Santa Ana, CA**
  - P.O.S.T. Peace Officer Basic Course, January 1987 (680 hours)
- **Bettendorf High School, Bettendorf, IA**
  - High School Diploma, Honor Roll Graduate, June 1982

Professional Awards and Certifications

- **Accreditation Commission for Traffic Accident Reconstruction (A.C.T.A.R.):**
  - Full accreditation, registration number 1170, October 2001, 2006, 2011, 2016, 2021
- **Bosch Crash Data Retrieval System Analyst**
  - Collision Safety Institute, December 2003, August 2006, December 2008, January 2011, March 2012, June 2013, November 2015, May 2018
  - Crash Data Specialists, September 2022
- **Bosch Crash Data Retrieval System Technician - Certified Trainer**
  - Vetronix & Collision Safety Institute, February 2006
  - Recertified, Collision Safety Institute, February 2008, January 2009, 2011, 2012, 2013, 2014, 2015, 2016, 2017, March 2018, 2019, 2020
  - Bosch Listed CDR Tool training organization, November 2021
- **Commision on Peacer Officer Standards and Training (P.O.S.T.)**
  - Advanced Certificate, January 1996
  - Intermediate Certificate, March 1992
  - Basic Certificate, January 1988
- **Esco Institute**
  - EPA Certification for Motor Vehicle Air Conditioning, September 2004
- **FARO-CAD Zone**
  - Certified as a trainer, June 2005
  - Certified as master trainer, July 2008
- **Inter-Industry Conference on Auto Collision Repair (I-CAR)**
  - ProLevel 1: Electrical/Diagnostics Technician, February 2022
  - ProLevel 2: Electrical/Diagnostics Technician, July 2022

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- **Professional Society of Forensic Mapping (PSFM)**
  - Approved instructor, November 2009
- **Thomson Education Direct (now Penn Foster)**
  - Diploma for completion of the Auto Repair Technician (mechanic) Program, September 2004
- **U.C. Riverside University Extension, Riverside, CA - Course Sequence Awards**
  - Advanced Traffic Accident Reconstruction Training Institute, 200-hour, January 2000
  - Traffic Accident Investigation Training Institute, 180-hour, October 1999

Specialized Education

* Denotes training approved for A.C.T.A.R. Continuing Education Units

- Kia Collision Repair Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, July 2026
- Introduction to Electric Vehicle (EV) Service Considerations, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, July 2026
- Recent Genesis/ Hyundai/ Kia ADAS/EDR Research, NAPARS Webinar, Kent E. Boots (co-presenter), Sundar Raman Nagarajan, Shawn Harrington, 2 hours, July 2026*
- Electronic Braking and Stability Control Systems Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, June 2026
- Tires and Wheels in Crashes: NAPARS Webinar, William Woehrle, 2 hours, June 2026*
- Hyundai Electromechanical Repair Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, April 2026
- Attendance at the NAPARS Symposium on EDR Research and Testing, multiple presenters on passenger vehicle, and heavy vehicle EDRs, 15.75 hours, April 2026*
- Attendance at the SATAI Spring Conference, **three vehicle vs. vehicle crash tests**, Glendale, AZ, 18 hours, March 2026*
- Anatomy for the Crash Analyst: NAPARS Webinar, Cameron Trepeck PhD, Q Forensics, 2 hours, February 2026*
- ABS/ADAS Brake System Diagnostics, Andrew Markel – Babcox Media, 1 hour, January 2026 Babcox Media Webinar
- Steering System Operation, Damage Analysis and Service, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2025
- Beyond the Last Precrash Speed Value: NAPARS Webinar, Wade Bartlett PE, 2 hours, December 2025*
- Suspension System Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, December 2025
- Servicing Windshield-Based ADAS & Convenience Systems, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2025
- Vehicle Technology and Trends 2025, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, November 2025
- Investigating Emergency Vehicle Crashes: NAPARS Webinar, Lt. Christopher Daly (Westchester, PA PD) 2 hours, November 2025*
- Steering System Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, November 2025
- Electric Vehicle (EV) Initial Inspection & Handling, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2025
- Brake Pads and Rotors: Science, Service, and Diagnostics, Eric Garbe – Babcox Media, 1 hour, October 2025 Babcox Media Webinar
- Modern Sensor Technology 2.0: ASE Education Foundation Webinar, Philip Austin – Niterra, 1 hour October 2025
- Understanding Hybrid & Electrified Systems, Kurt Gyger – Litens, 1 hour, October 2025 Babcox Media webinar
- Vehicle Technology and Trends 2024, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, September 2025

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- Breaking Through the Barrier: Demystifying Security Gateways with Autel, John Forro Autel, 1 hour, August 2025 Babox Media webinar
- Diagnosing What Counts: The Critical Tests for Today's Electrical Systems, Eric Garbe Babcox Media, 1 hour, July 2025 Babcox Media webinar
- Attendance at the NAPARS Symposium on EDR Research and Testing, multiple presenters on passenger vehicle, motorcycle, and heavy vehicle EDRs, 15.75 hours, April 2025*
- Attendance at the SATAI Spring Conference, **three vehicle vs. vehicle crash tests**, Glendale, AZ, 18 hours, March 2025*
- TPMS 101: The Core Fundamentals of TPMS Operation: Babcox Media (Scot Holloway, Bartec TPMS) webinar, 1 hour, March 2025
- Finding A/B Stiffness Values from NHTSA Data: NAPARS Webinar, Daniel W. Vopmhoff III (4N6XPRT Systems) 2 hours, March 2025*
- Electrical Service Fundamentals for Today's and Tommorow's Technician: Babcox Media (Eric Garbe) webinar, 1 hour, February 2025
- Moderns Sensor Technology & Tips: Babcox Media (Philip Austin, Niterra North America) webinar, 0.75 hour, February 2025
- Modern Ignition Technology & Tips: Babcox Media (Philip Austin, Niterra North America) webinar, 0.75 hour, January 2025
- Brake System Electronics Operation & Damage Analysis, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, January 2025
- Damage Analysis of Driving Assist Systems, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2024
- Ignition System Codes, Conditions, and Cures: Babcox Media (Andrew Markel) webinar, 0.75 hour, December 2024
- Damage Analysis of Brake Systems, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, November 2024
- OBDII – Present and Future: ASE Education Foundation Webinar, Rick Escalambre, 1 hour, November 2024
- Takata Airbag Recall update: NAPARS Webinar, Det. Richard Gill (Mesa PD), 2 hours, October 2024*
- Unlock the Secrets of Diagnostic Trouble Codes: Babcox Media (Andrew Markel) webinar, ShopStock Day 1, 2.5 hours, September 2024
- How to Efficiently Diagnose Vehicle Communication Issues: Autel (Michael Fink) & Babcox Media webinar, 1 hour, August 2024
- Counterfeit Airbags: NAPARS Webinar, Thomas Nichols (GM), 2 hours, July 2024*
- Toyota Safety Systems: NAPARS Webinar, Nick Manz (Toyota), 2 hours, June 2024*
- Damage Analysis of Electronic Brake Systems, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, June 2024
- Photography with Tripods, Flash, and Polarizers: NAPARS Webinar, Thomas Vadnais (Vadnais Engineering) 2 hours, May 2024*
- Attendance at the NAPARS Symposium on EDR Research and Testing, multiple presenters on passenger vehicle, motorcycle, and heavy vehicle EDRs, 40 hours, April 2024*
- Critical Speed Yaw Analysis: NAPARS Webinar, Wade Bartlett (MFES), 2 hours, March 2024*
- Unusual Sources of Electronic Evidence: Beyond the Black Box: Webinar, MEA Forensic Engineers & Scientists, 1 hour, February 2024
- Damage Discovery for ADAS Sensor Mounting Locations, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, February 2024
- Brake System Troubleshooting & Service, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.75 hour, February 2024
- Vehicle Technology and Trends 2023, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, February 2024
- Brake System Electronics Service, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2023
- Troubleshooting Electrical Circuits & Parts, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2023

NOT FOR DISCLOSURE

- Electrical Troubleshooting Fundamentals, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2023
- Repairers Realm: Wiring and Connector Repair Considerations, I-CAR (Inter-Industry Conference on Auto Collision Repair), live webinar, Jeff Poole & Jason Hauboldt, I-CAR subject matter experts, 0.75 hours, Oct. 2023
- Red Light Running & Traffic Lights: NAPARS Webinar, Soan Chau (SCA Transportation Forensics), 2 hours, Oct. 2023*
- Attendance (via Zoom) at the WATAI Fall Conference, Delta V's, Closing Velocities, and Restitution ¦ Greg Russell, Working with Video to Calculate Speed ¦Aaron Parker & Marc Boardman, 12 hours, October 2023*
- Introduction to 3D Video Reconstruction: CAARS Webinar, Jason Fries, 3D Forensics, 2 hours, August 2023*
- Attendance at World Reconstruction Exposition 2023 (WREX), 23 crash tests: **vehicle vs. vehicle, commercial vehicle vs. commercial vehicle, commercial vehicle vs. vehicle & bus, vehicle vs. motorcycle, vehicle vs. pedestrian,** Orlando, FL, April 2023*
- Traffic Engineering: How it influences accident reconstruction: CAARS Webinar, Larry Neuman, P.E. (Neuman Engineering), 1.5 hours, March 2023*
- Aerial Photogrammetry: NAPARS Webinar, Andrew Klane, Forensic Mapping Solutions, 2 hours, March 2023*
- Attendance at the SATAI Spring Conference, **vehicle vs. pedestrian & vehicle vs. vehicle crash tests**, Glendale, AZ, 14 hours, February 2023*
- EDR update: NAPARS Webinar, Andrew Rich, Rich Consulting, 2 hours, February 2023*
- Attendance (via Zoom) at the WATAI Fall Conference, Accident Reconstruction at Traffic Signal Intersections, Daren Marceau, 16 hours, October 2022*
- Crash Data Retrieval (CDR) Analysis and Applications course, Crash Data Specialists LLC, Sacramento, California, 40 hours, September 2022*
- Attendance at the MATAI Fall Conference, Commercial Motor Vehicle Topics, various presenters, 19 hours, September 2022*
- Evolution of Insurance Litigation as Autonomous Vehicles Become Common Place, Anti-Fraud Alliance Webinar, Stephan A. DiBiase, Momentum Engineering, 2 hours, September 2022
- ABS and non-ABS deceleration rates on different surfaces: CAARS Webinar, Michael Sweet and Ian Miller, MEA Forensic, 1.5 hours, Sept. 2022*
- Understanding Cycle Times, I-CAR (Inter-Industry Conference on Auto Collision Repair), virtual, 3 hours, April 2022
- Attendance (via Zoom) at the WATAI Spring Conference, Advanced Reconstruction with EDR Applications & Using Excel in Traffic Collision Reconstruction, Greg Russell, 16 hours, May 2022*
- Planning Mechanical Repairs, I-CAR (Inter-Industry Conference on Auto Collision Repair), virtual, 1.5 hours, April 2022
- Unsettled legal issues facing data in autonomous, connected, electric, and shared vehicles, SAE Accident Reconstruction Digital Summit, Jennifer Dukarski, 0.5 hours, March 2022
- Heavy Vehicle Event Data Recorders & Crash Reconstruction, SAE Accident Reconstruction Digital Summit, John C. Steiner, 0.5 hours, March 2022
- New Vehicle Design – ADAS/AV as related to crash safety, SAE Accident Reconstruction Digital Summit, Alan Moore, 0.5 hours, March 2022
- Using Drones to Reconstruct Accident Scenes, SAE Accident Reconstruction Digital Summit, Clare Grimes, 0.5 hours, March 2022
- Human Factors, SAE Accident Reconstruction Digital Summit, Jeff Muttart, 0.5 hours, March 2022
- Using EDR Delta V to get speed at impact in offset collisions: translating Delta V at EDR to center of mass: SAE Accident Reconstruction Digital Summit, Rick Ruth, 0.5 hours, March 2022
- Attendance at the SATAI Spring Conference, **vehicle versus vehicle crash tests**, Glendale, AZ, 16 hours, February 2022*
- Hybrid Vehicle Identification and Damage Analysis, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, February 2022

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- Case Studies and Research on Pedal Misapplication: CAARS Webinar, Colin Smith and Omar Kaayal (VA Forensics-Aperture, LLC), 2 hours, February 2022*
- Wiring and Connector Service and Repairs, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, February 2022
- Steering Angle Sensor Overview and Diagnostics, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, February 2022
- Introduction to Diagnostics and Scan tools, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, February 2022
- Circuit Measurements with a Digital Volt Ohm Meter (DVOM), I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, January 2022
- Damage Analysis of Restraint Systems, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, January 2022
- Battery Jumpers and Chargers, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, January 2022
- Understanding Vehicle Communication Networks, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, December 2021
- Restraint Systems Operation, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2021
- Restraint System Diagnostics and Service, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2021
- Restraint System Overview, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2021
- Understanding High Voltage Safey, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, December 2021
- Bosch CDR Tool Technician, Institute of Police Technology and Management (IPTM), online training 24 hours, November 2021*
- Troubleshooting Basic Electrical Circuits, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, November 2021
- Electrical Theory, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 0.5 hour, November 2021
- Electrical Damage Inspection, I-CAR (Inter-Industry Conference on Auto Collision Repair), online training, 1 hour, November 2021
- Attendance at the IATAI Annual Traffic Crash Reconstruction Conference, training sessions included an EDR update and Tesla EDR, 24 hours, September 2021*
- Bicycle Accident Investigations: Webinar, MEA Forensic Engineers & Scientists, 1 hour, June 2021
- Attendance (via Zoom) at the WATAI Spring Conference, 16 hours, May 2021*
- Drones: New regulations and Best Way to Get Licensed: CAARS Webinar, Dave Cameron, 2 hours, April 2021*
- Motorcycle Accident Reconstruction & Helmet Analysis: Webinar, MEA Forensic Engineers & Scientists, 1 hour, April 2021
- 3D Scene Visualization and Courtroom Presentation: CAARS Webinar, Franklin Wong (Talbot & Associates), 2 hours, February 2021*
- How to Perform a CDR Direct-to-Module Download, Crash Data Group, online training, 2 hours, February 2021*
- How to Use the Bosch CDR Pro Tool Kit, Crash Data Group, online training, 5 hours, February 2021*
- Using Microsoft Excel for Traffic Crash Reconstruction, Rich Consulting LLC, online training, 28 hours, January 2021*
- Sources of Electronic Evidence in Vehicle Crashes: Webinar, MEA Forensic Engineers & Scientists, 1 hour, December 2020
- EDRs – Exposing Fraud with Vehicle Crash Data: Anti-Fraud Alliance, 4th Quarter Virtual Training Meeting, Scott Christensen, Dan Walker, Heather Roberts, and Jon Colman, 2.25 hrs., December 2020
- An Overview of Collision Reconstruction/Investigation using Crash Data Retrieval Event Data: CAARS Webinar, Anthony Andreoni, PE (A^2 Consulting Engineers), 2 hours, December 2020*

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- Why GNSS Is an Essential Quick Clearance Crash Investigation Tool: Webinar, Andrew Klane, (Leica Geosystems), 1 hour, December 2020
- How Drivers Respond in Real World & Near Crash Scenarios: CAARS Webinar, Swaroop Dinkar (Crash Safety Research Center), 2 hours, November 2020*
- Video Analysis & the Reconstruction of Events: Webinar, MEA Forensic Engineers & Scientists, 1 hour, September 2020
- Using Handheld 3D Scnners for Crime & Crash Scenes: Webinar, David Dustin (FARO Technologies), 1 hour, July 2020
- Pix4Dmapper for Collision Reconstruction: Webinar, Angad Singh, Andrew Klane, Brian Levanthal (Pix4D), 1 hour, March 2020
- Attendance at the Event Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 18 hours, March 2020*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, March 2020*
- Creating Compelling 2d & 3d Deliverables from Photos: Webinar, Dean Pierson, Derik White, David Rineholt (FARO), 1 hour, February 2020
- Capturing Crash Scene Details – Best Practices: Webinar, Russell Boynton & Dean Pierson (FARO), 1.5 hours, November 2019*
- The Dos and Don'ts of Mapping - Time and Life Saving Tips: Webinar, George Maglaras & Dale Farmer (Laser Technology Inc.), 1 hour, March 2019*
- Attendance at the Event Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, March 2019*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, March 2019*
- Drone Mapping: Ground and Aerial Measurements webinar, various presenters (Laser Technology Inc.), 1 hour, February 2019*
- How to use the Bosch CDR Tool, The Crash Academy, Temecula, Calfornia, 4 hours - online, September 2018
- Traffic Collision Technology Webinar, Patrick Cillo & Mike Stogsdill (Laser Technology Inc.), 1 hour, May 2018*
- Crash Data Retrieval (CDR) Analyst Certification Course, Collision Safety Institute, Sacramento, California, 40 hours, May 2018
- Attendance at the Event Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, March 2018*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2018*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, September 2017*
- Attendance at the Event Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 24 hours, March 2017*
- Attendance at the SATAI Fall Conference, **vehicle versus vehicle crash tests**, Glendale, AZ, 16 hours, October 2016*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, May 2016*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2016*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2016*
- Crash Data Retrieval (CDR) Analyst Certification Course, Collision Safety Institute, Sacramento, California, 40 hours, November 2015
- Attendance at the SATAI Fall Conference, **vehicle versus vehicle & vehicle versus pedestrian crash tests**, Glendale, AZ, 12 hours, September 2015*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, June 2015*

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- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2015*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2015*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle & barrier crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, June 2014*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2014*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2014*
- Attendance at the 2013 WATAI Fall conference, Redmond, WA, 20 hours, October 2013*
- Attendance at the 2013 Annual Joint Conference hosted by NJAAR, Atlantic City, NJ, 20 hours, October 2013*
- Attendance at the SATAI Fall Conference, **vehicle versus vehicle & airborne vehicle crash tests**, Glendale, AZ, 12 hours, September 2013*
- Crash Data Retrieval (CDR) Analyst Certification Course, Collision Safety Institute, Sacramento, California, 40 hours, June 2013
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle & barrier crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, May 2013*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2013*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2013*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, June 2012*
- Crash Data Retrieval (CDR) Analyst Certification Course, Collision Safety Institute, Sacramento, California, 40 hours, March 2012
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2012*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2012*
- Leica HDS C10 Scanner & software training, Leica Geosystems, Inc., San Ramon, California, 8 hours, December 2011
- Attendance at 13th Annual CA²RS Training Conference – Airbag Fundamentals, CDR Technology Update, Seat belts – Forensic Testing & Evaluation, Seat belts – Case Studies, Child Restraint Systems, Airbag and Seat Belt Injuries – Anaheim, California, 20 hours, October 2011*
- Attendance at the ARC-CSI Crash Conference, **vehicle versus vehicle crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada 28 hours, May 2011*
- Railroad Accident Investigation and Reconstruction, Robert W. Halstead, BSEE, ACTAR, (Sponsored by CA²RS), Vacaville, California, 8 hours, February 2011*
- Crash Data Retrieval (CDR) Analyst Certification Course, Collision Safety Institute, North Las Vegas, Nevada, 40 hours, February 2011
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2011
- CSV Pro 2011 workshop, Greg Russell, Houston, Texas, 2 hours, January 2011*
- Hands-on Lab: Instructor-led CDR Imaging, Collision Safety Institute, Houston, Texas, 2 hours, January 2011*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2011*
- ARAS 360 Advanced 3D Computer Diagramming, Chet Tomlinson – ARAS 360, Vallejo, California, 24 hours, January 2011*
- Collision Fraud Investigation, Sgt. Chris Mendez, Det. Steve Hardy, (Sponsored by CA²RS), Sacramento, California, 8 hours, August 2010*

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- Accident Reconstruction and Biomechanical Analysis of Pedestrian Collisions, Jesse Wobrock, Ph.D. (Sponsored by CA²RS), Roseville, California, 8 hours, May 2010*
- Investigation and Analysis of Rollover Collisions, Kurt D. Weiss, MSME (Sponsored by CA²RS), San Jose, California, 8 hours, February 2010*
- Attendance at 1st Annual Crash Investigation Skill Building Conference, Kinetic Energy Press – Rick Robertson Ph.D, Crash Injuries and the Correct Identification of Occupant Seating Positions – Robert Stearns, Crash Scene Photography, Identification & Interpretation or Roadway and Vehicle Evidence – Peter Rast, Case Studies in High Speed Crash Events, 16 hours, February 2010*
- Attendance at the Crash Data Retrieval User's Summit, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2010*
- Attendance at SATAI Winter Conference, Aftermarket Components & the EDR – Mark Salem, Stiffness Data Research & Calculations – Daniel W. Vomhof III, Experts & Lawyers in the Courtroom – Joel B. Robbins, Esq., EDR Discrepancies – Steve Van Gaasbeck, Esq., San Diego, CA, 12 hours, November 2009*
- Attendance at 11th Annual CA²RS Training Conference, Traffic Signal Intersections, Auto-Bike crashes, Auto-Ped crashes, Vehicular Homicide Prosecution Cases, Validation of the Searle Formulae, Physics Demonstrations – Anaheim, California, 20 hours, October 2009*
- Motorcycle Crash Reconstruction & Case Studies, Toby Gloekler, PE, ACTAR, (Sponsored by CA²RS), Vallejo, California, 8 hours, August 2009*
- Seatbelt Analysis & Occupant Kinematics, Robert Stearns, (Sponsored by CA²RS), Sacramento, California, 8 hours, May 2009*
- Investigation of Motorcycle Crashes, IPTM, **acceleration and skid testing**, Vallejo, California, 40 hours, March 2009*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2009
- Attendance at the Crash Data Retrieval User's Conference, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2009*
- Human Factors for Traffic Accident Reconstruction, **vehicle headlight pattern mapping**, Jeffrey Muttart – Accident Dynamics Research Center, Sacramento, CA, 40 hours, January 2009*
- Crash Data Retrieval (CDR) – Data Analyst Certification Course, Collision Safety Institute, North Las Vegas, Nevada, 32 hours, December 2008
- Attendance at 10th Annual CA²RS Training Conference, Drag Factor, Narrow Object Impacts, Critical Speed/Yaw, Rollovers, Human Factors, Being an Effective Witness/Surviving Cross Examination – Sacramento, California, 20 hours, October 2008*
- Crash Data Retrieval System – Advanced Skills for the CDR Technician, Collision Safety Institute, Whittier, California, 24 hours, August 2008
- Attendance at the ARC-CSI Crash Conference, **M/C versus vehicle, vehicle versus vehicle, vehicle versus pedestrian crash tests**, ARC Network & Collision Safety Institute, Las Vegas, Nevada, 28 hours, June 2008*
- Intersection Collisions, Chris Kauderer, (Sponsored by CA²RS), Vacaville, California, 8 hours, May 2008*
- Applied Physics, Dr. Bruno Schmidt, (Sponsored by CA²RS), San Diego, California, 7 hours, April 2008*
- Crash Data Retrieval System – Technician, Train the Trainer Update Course, Collision Safety Institute, Houston, Texas, 8 hours, January 2008
- Attendance at the Crash Data Retrieval User's Conference, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2008*
- Bicycle collision investigation, Roman Beck (Sponsored by CA²RS), Vallejo, California, 8 hours, January 2008*
- Attendance at 9th Annual CA²RS Training Conference – CA²RS Toolbox; A Reconstruction Grab Bag, **Idle acceleration and skid testing, Low Speed Crash Tests, Vehicle versus Pedestrian crash tests**, Anaheim, California, 20 hours, October 2007*
- Basic/Advanced Diagramming, Animation, and SMAC FX Simulation using Vista FX3, Sam El Said, Roseville, California, 32 hours, September 2007

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- Forensic Mapping Revisited, Mick Capman, (Sponsored by CA²RS), Vallejo, California, 8 hours, May 2007*
- Projectile Motion, Rudy Degger, (Sponsored by CA²RS), Long Beach, California, 8 hours, April 2007*
- Attendance at the Crash Data Retrieval User's Conference, ARC Network & Collision Safety Institute, Houston, Texas, 20 hours, January 2007*
- Attendance at 8th Annual CA²RS Training Conference – Crash Reconstruction – Start to Finish, South Lake Tahoe, California, 20 hours, November 2006*
- Crash Data Retrieval System – Data Analyst Certification Course, Collision Safety Institute, Vallejo, California, 32 hours, August 2006
- Crash Photography – Beyond the Basics, Will Funk (Sponsored by CA²RS), Riverside, California, 8 hours, June 2006*
- Speed From Skid & Working With Energy, Kerry A. Berg & Steve Haverkamp (Sponsored by CA²RS), Long Beach, California, 8 hours, May 2006*
- Crash Data Retrieval System – Technician, Train the Trainer Course, Collision Safety Institute, Dallas, Texas, 16 hours, February 2006
- Attendance at the Crash Data Retrieval User's Conference, ARC Network & Collision Safety Institute, Dallas, Texas, 16 hours, February 2006*
- ABS Brake Systems and Related Physical Evidence, Alan Coulter & Wesley Vandiver (Sponsored by CA²RS), Vallejo, California, 8 hours, January 2006*
- Attendance at 7th Annual CA²RS Training Conference – Investigating Emergency Vehicle Collisions, Keynote Speaker: Dr. Stephen S. Solomon, B.S., O.D. author of Emergency Vehicle Accidents, Temecula, California, 20 hours, October 2005*
- Commercial vehicle brake inspections & determining braking efficiency, Bill Focha & James C. Holder (Sponsored by CA²RS), Hayward, California, 8 hours, July 2005*
- Friction Applications in Vehicular Accidents & Motorcycle Braking and Accident Reconstruction, **rolling resistance testing**, Boyd Allin, MASc, PE & Steve Anderson, PE, Macinnis Engineering Associates Inc., Lake Forest, California, 6 hours, May 2005
- Forensic Mapping and Diagramming, Duke Dutch – Sokkia Corporation (Sponsored by CA²RS), Orange, California, 8 hours, April 2005*
- Driving Under the Influence – Human Factors and DUI Lab, Ken Whitley (Sponsored by CA²RS), Long Beach, California, 8 hours, April 2005
- Motorcycle Crash Investigation, IPTM, **acceleration and skid testing**, Orange, California, 40 hours, March 2005*
- PC Crash computer software training - advanced workshop, Macinnis Engineering Associates Inc., Las Vegas, Nevada, 16 hrs., March 2005
- Advanced CrashZone-CrimeZone, U.C. Riverside Extension, 16 hrs., February 2005
- Mapping with CrashZone-CrimeZone, U.C. Riverside Extension, 20 hrs., February 2005
- Attendance at 6th Annual CA²RS Training Conference – Motorcycle Collision Investigation and Reconstruction, **dynamic friction testing, motorcycle to vehicle crash tests**, Santa Rosa, California, 20 hours, October 2004*
- Street Racing and Modified Vehicle Investigations, San Diego Police Department – DragNet Unit, Laguna Hills, California, 4 hours, October 2004
- Linear Momentum, Rudy Degger, (Sponsored by CA²RS), Anaheim, California, 8 hours, August 2004*
- Forensic Mapping Specialist (Leica Total Station), MJC & Associates, Lake Forest, California, 40 hours, June 2004*
- Post-Collision Passenger Vehicle Inspection and Seat Belt Analysis, Alan Coulter, Wesley Vandiver (Sponsored by CA²RS), Long Beach, California, 8 hours, April 2004*
- Leica instrument fundamentals, Evidence Recorder Pro training, Greg Hazelquist – Servco, Aliso Viejo, California, 8 hours, April 2004
- Attendance at S.A.T.A.I. Spring Conference, Reconstruction and Mathematical Analysis/ Simultaneous Equations to Solve In-Line Collisions by John Daily and Nate Shigemura, Energy in Traffic Collision Reconstruction by Gary Cooper, Las Vegas, Nevada, 11 hours, March 2004*
- Human Factors in Collision Analysis, David Casteel, (Sponsored by SDCCIA), San Diego, California, 8 hours, February 2004

NOT FOR DISCLOSURE

- Advanced Lamp Analysis, James Domenoe, (Sponsored by CA²RS), Garden Grove, California, 8 hours, February 2004*
- Crash Data Retrieval (CDR) Toolkit Operator's Certification Course, Collision Safety Institute, Anaheim, California, 24 hours, December 2003*
- Attendance at S.A.T.A.I. Fall Conference, Visibility and the Investigator, Nighttime Visibility, Photogrammetry, Friction and Skid Testing, San Diego, California, 16 hours, November 2003*
- Attendance at CA²RS versus Bikes and other in-line wheeled devices, **acceleration and braking testing of motorized scooters and Segway,** Anaheim, California, 20 hours, October 2003*
- Auto-Pedestrian Traffic Accident Investigation, **7 vehicle vs. pedestrian collisions, skid testing, human/dummy drag tests, pedestrian walking speeds, visual speed estimations,** WeCARE, Sacramento, California, 40 hours, August 2003*
- Momentum – What is it; how and why it can be used to reconstruct the speed of vehicles in a collision, Rudy Degger, Aliso Viejo, California, 8 hours, May 2003
- Computers in Accident Reconstruction, Rudy Degger & Charles Barton, (Sponsored by CA²RS), Anaheim, California, 8 hours, May 2003*
- Basic tire mechanics and inspection, Tom Giapponi, (Sponsored by CA²RS), Garden Grove, California, 8 hours, March 2003*
- Vehicle Emissions Tampering, California EPA Air Resources Board, 2 hours, February 2003
- What we've learned from the "dummies", How and why injuries occur in crashes, Calsafe Traffic Safety Forum, 2 hours, January 2003
- Alco Sensor IV-XL at point of arrest system, certified operator, OCSD FSS, 4 hours, December 2002
- PC Crash computer software training, Macinnis Engineering Associates Inc., 16 hrs., November 2002
- Attendance at 2002: "Truck'n with CA²RS" – A seminar in Accident Reconstruction Focusing on Heavy Vehicles, **acceleration and skid testing, off-tracking, vehicle to vehicle crash tests**, Anaheim, California, 20 hours, October 2002*
- Defensive Driving – Driving Simulator/ Force Option Simulator, Orange Co. Sheriff's Dept., 8 hrs., September 2002
- Testimony in Criminal and Civil Proceedings, Creg Datig, William Hoback (Sponsored by CA²RS), Santa Ana, California, 8 hours, August 2002
- Vericom VC 2000 Traffic Accident Reconstruction Training Class, **acceleration and skid testing**, Rick Jobe – Vericom Computers, 15 hours, June 2002*
- An Overview of Fire in Accident Reconstruction, Pete Klaput (Sponsored by CA²RS), Valencia, California, 8 hours, May 2002*
- Injury Mechanisms During Motor Vehicle Collisions, Rick Robertson, PhD (Sponsored by CA²RS), Anaheim Police Department, 8 hours, February 2002*
- Attendance at 2001: "A Collision Odyssey" – Back to the Basics (Sponsored by CA²RS & SOAR), Concord, California, 20 hours, October 2001*
- Human Factors-Occupant Dynamics, Riverside Sheriff's Dept. (Sponsored by CA²RS), 8 hrs., August 2001
- Computer-Assisted Traffic Accident Reconstruction using MathCad 2001, U.C. Riverside Extension, 40 hrs., June 2001
- Traffic Collision Investigation – Motor Vehicle Inspection, Riverside Sheriff's Dept., 40 hrs., November 2000
- MapScenes computer software training, MJC & Associates, 24 hrs., October 2000
- Attendance at World Reconstruction Exposition 2000 (WREX), **vehicle to vehicle crash tests, vehicle body friction tests, motorcycle tests, skid testing**, Texas A&M University, September 2000
- DUI Prevention Training – Community Service Programs/ MADD, 4 hours, May 2000
- Commercial Vehicle Accident Investigation, **acceleration and skid testing,** U.C. Riverside Extension, 40 hrs., March 2000
- Human Factors in Accident Reconstruction, U.C. Riverside Extension, 8 hrs., March 2000
- Tire Damage Analysis Course, Michelin (Sponsored by CA²RS), 8 hrs., February 2000
- Forensic Mapping Specialist (Sokkia Total Station), MJC & Associates, 40 hrs., Nov. 1999
- Principles of Investigating Low-Speed Impacts, **ten low-speed staged collisions**, U.C. Riverside Extension, 40 hrs., October 1999

NOT FOR DISCLOSURE

- Reconstruction of Auto vs. Pedestrian./ Bicycle Accidents, U.C. Riverside Extension, 24 hrs., Oct. 1999
- Computer-Aided Collision Diagramming (Autosketch 6.0), U.C. Riverside Extension, 24 hrs., September 1999
- Speed Determination From Crush Analysis, U.C. Riverside Extension, 40 hrs., May 1999
- Staged Collision Training, CA State Dept. of Insurance, 2 hrs., March 1999
- P.O.S.T. Traffic Accident Reconstruction, Los Medanos College, 80 hrs., March 1999
- Vehicle Lamp Analysis, U.C. Riverside Extension, 8 hrs., February 1999
- Traffic Accident Photography, U.C. Riverside Extension, 8 hrs., January 1999
- P.O.S.T. Advanced Traffic Collision Inv., Los Medanos College, 80 hrs., October 1998
- Traffic Lidar Certification (laser speed detection), Kustom Signals, Inc., February 1998
- P.O.S.T. Intermediate Traffic Collision Inv., Riverside Sheriff's Dept., 40 hrs., Sept. 1997
- Grade Crossing Collision Inv., Union Pacific Railroad P.D., 16 hrs., June 1997
- Occupant Protection/ Child Restraint Awareness, Orange Co. Sheriff's Dept. (NHTSA), 4 hrs., February 1996
- Doppler Radar Certification, Orange Co. Sheriff's Dept., January 1996
- P.O.S.T. Basic Collision Inv., Riverside Sheriff's Dept., 40 hrs., January 1994
- Advanced Driver's Training, Academy of Defensive Driving, 24 hrs., December 1986

Expert Witness Testimony

- Qualified as an Expert in Traffic Accident Reconstruction on numerous occasions in California State Superior and Municipal Courts. Court locations include:

Contra Costa County	Orange County	Sacramento County
San Mateo County	Solano County	

Selected areas of testimony

- Auto versus Pedestrian/Bicycle
- Crash Data Retrieval and Event Data Recorders
- Emergency vehicle operations and "Code-3" driving
- Forensic mapping, total station technology, and CAD scale diagrams
- 3D scale diagrams
- Lamp analysis for on-off determination
- Linear momentum analysis
- Post collision coefficient of friction determination and resultant drag factors
- Seat belt examination for use determination
- Speed determination by damage and/or energy analysis
- Vehicle damage documentation

- Qualified as an Expert in Traffic Accident Reconstruction in the State of Connecticut Superior Court, J.D. of Tolland at Rockville
- Qualified as an Expert in Crash Data Retrieval (CDR), vehicle Event Data Recorders (EDR), and ignition cycle analysis in Port St. Lucie, FL
- Deposed as an Expert in Traffic Accident Reconstruction on numerous occasions
- Consulted with the Orange County District Attorney's Office on numerous occasions
- Consulted with various Orange County Law Enforcement Agencies on numerous occasions
- Consulted with various Northern California Law Enforcement Agencies on numerous occasions
- Consulted with various Federal, State, and County Law Enforcement Agencies on numerous occasions

Research and Development

- 1 vehicle versus pedestrian (dummy) collision, 5 vehicle versus vehicle crash tests, SATAI, Feb. 2023
- 5 Vehicle versus vehicle high speed crash tests, instrumented occupant "driver" of a passenger bus for two of the five crashes, MATAI, September 2022
- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, April 2019

NOT FOR DISCLOSURE

- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, April 2018
- 4 vehicle versus vehicle high speed crash tests, 17 vehicle versus pedestrian dummy crash tests, ARC-CSI Crash Conference Crash Team, September 2017
- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, June 2017
- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, November 2016
- 3 vehicle versus vehicle collisions, SATAI Conference Crash team, October 2016
- 2 vehicle versus vehicle high speed crash tests, 2 vehicle versus barrier high speed crash tests, 2 motorcycle versus vehicle high speed crash tests, 20+ motorcycle versus barrier high speed crash tests, 10 low-speed crash tests, ARC-CSI Crash Conference Crash Team, May 2016
- 2 vehicle versus pedestrian (dummy) collisions, 3 vehicle versus vehicle collisions, SATAI Conference Crash team, September 2015
- 5 vehicle versus vehicle high speed crash tests, 2 motorcycle versus vehicle high speed crash tests, 5 low-speed trailer hitch crash tests, ARC-CSI Crash Conference Crash Team, June 2015
- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, April 2015
- 4 vehicle versus vehicle crash tests, Crash Data Retrieval User's Summit, January 2015
- 4 vehicle versus barrier & 5 vehicle versus vehicle high speed crash tests, 3 low-speed crash tests, ARC-CSI Crash Conference Crash Team, June 2014
- 1 vehicle versus vehicle & 1 airborne vehicle crash test, SATAI Conference Crash Team, September 2013
- 2 vehicle versus barrier & 7 vehicle versus vehicle high speed crash tests, 6 low-speed crash tests, ARC-CSI Crash Conference Crash Team, May 2013
- 3 motorcycle versus vehicle high speed crash tests, 1 vehicle versus motorcycle high speed crash test, 2012 Joint Crash Conference; hosted by NYSTARS, Fishkill, New York, October 2012
- 1 vehicle versus vehicle high speed crash test, 12th Annual Pennsylvania State Police Reconstruction Seminar, St. College, Pennsylvania, September 2012
- 7 vehicle versus vehicle high speed crash tests, 5 low-speed crash tests, ARC-CSI Crash Conference Crash Team, June 2012
- 5 Vehicle versus pedestrian (dummy) collisions, vehicle skid tests, human/dummy drag tests, WeCARE, April 2012
- 7 vehicle versus vehicle high speed crash tests, 7 low-speed crash tests, ARC-CSI Crash Conference Crash Team, May 2011
- 6 dynamic friction tests for motorcycles sliding, 25 motorcycle versus passenger vehicle lateral impact tests at 30-60 mph, California Association of Accident Reconstruction Specialists, August 2009
- 100+ police motorcycle (3 models) skid & acceleration tests, Elk Grove Police Department, July 2009
- 6 Passenger vehicle skid tests, 2 police motorcycle dynamic lean tests, 28 motorcycle acceleration tests, 16 motorcycle skid tests, 1 dynamic friction tests for motorcycles sliding, IPTM, March 2009
- Vehicle headlight beam pattern mapping, results included in I.DRR, Integrated Driver Response Research Software, January 2009 - Present
- Idle acceleration and skid testing, Low Speed Crash Tests, Vehicle versus Pedestrian crash tests, California Association of Accident Reconstruction Specialists, October 2007
- Police vehicle skid tests (coefficient of friction), Contra Costa County Sheriff's Department, June 2006 – March 2009
- 5 Vehicle versus pedestrian (dummy) collisions, skid testing, human/dummy drag tests, pedestrian walking speeds, WeCARE, April 2006
- 9 Nighttime visibility tests using a Minolta LS-100 Luminance Meter, MEA Forensic Engineers and Scientists, September 2005
- 9 Rolling resistance tests with two passenger vehicles, Macinnis Engineering Associates & Orange County Sheriff's Department M.A.R.T., May 2005

NOT FOR DISCLOSURE

- 3 Passenger vehicle skid tests, 2 police motorcycle dynamic lean tests, 13 police motorcycle acceleration tests, 10 police motorcycle skid tests, 2 dynamic friction tests for motorcycles sliding, IPTM, March 2005
- 5 dynamic friction tests for motorcycles sliding, 20 motorcycle versus passenger vehicle lateral impact tests at 30-66 mph, 3 motorcycle versus passenger vehicle frontal impact tests at 34-52 mph, California Association of Accident Reconstruction Specialists, October 2004
- 6 low-speed rear and lateral impact testing of passenger vehicles, Macinnis Engineering Associates Inc., May 2004
- 4 Vehicle versus pedestrian (dummy) collisions, skid testing, human/dummy drag tests, pedestrian walking speeds, WeCARE, April 2004
- Commercial vehicle acceleration tests, skid tests, installed brake pressure transducers on three vehicles and temperature sensors on one vehicle, low-speed rear and lateral impact crash testing of a passenger car versus sport utility vehicle, University of California - Riverside, February 2004
- Police vehicle skid tests (coefficient of friction), Orange County Sheriff's Department, October 2003 – August 2006
- 7 Segway (EPAMD) acceleration and deceleration tests, 19 acceleration and deceleration tests with 6 different motorized scooters, gas and electric, California Association of Accident Reconstruction Specialists, October 2002
- 7 Vehicle versus pedestrian (dummy) collisions, skid testing, human/dummy drag tests, pedestrian walking speeds, visual speed estimations, WeCARE, August 2003
- Passenger vehicle skid tests (coefficient of friction), California Association of Accident Reconstruction Specialists, August 2003
- Low-speed rear and lateral impact crash testing of tractor-trailer and large buses versus passenger cars and light trucks versus passenger cars, California Association of Accident Reconstruction Specialists, October 2002
- High-speed rear crash testing of passenger car versus tractor-trailer combination and high speed lateral trailer under-ride passenger car versus trailer, California Association of Accident Reconstruction Specialists, October 2002
- Passenger vehicle, passenger buses, fire engine, and tractor-trailer combination acceleration and skid tests (coefficient of friction), California Association of Accident Reconstruction Specialists, October 2002
- Passenger bus and tractor-trailer combination off-tracking testing, California Association of Accident Reconstruction Specialists, October 2002
- 4 Police Vehicle skid tests (coefficient of friction), 7 Police Vehicle acceleration tests, Vericom Training, June 2002
- Passenger vehicle, police vehicle, and police motorcycle skid tests (coefficient of friction), Riverside County Sheriff's Department, March 2002 – August 2006
- 27 Fire Apparatus & Police Vehicle skid tests (coefficient of friction), 36 Fire Apparatus & Police Vehicle Acceleration Tests, Orange Co. Sheriff's Dept./ Anaheim Police Dept., July 2001
- 11 Fire Apparatus & Police Vehicle skid tests, Orange Co. Sheriff's Dept., November 2000
- Passenger vehicle, police vehicle, and police motorcycle skid tests, Orange County Sheriff's Department, November 2000 – August 2006
- Vehicle to vehicle crash tests, skid tests, vehicle body friction tests, motorcycle crash tests, World Reconstruction Exposition (WREX), College Station, Texas, September 2000
- Commercial vehicle acceleration tests, skid tests, and off-tracking, University of California - Riverside, March 2000
- 10 Low-Speed Rear-Impact Crash Tests, U.C. Riverside, October 1999

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Teaching Experience

- Kent E. Boots & Associates (formerly FactualDiagrams.com), October 2007 to present
    - Lead instructor for the following classes:
        - Advanced Troubleshooting and Vehicle Systems for the CDR Technician
        - Bosch Crash Data Retrieval Operator-Technician Course (formerly Level I & II).
        - Bosch CDR Tool User Update Course
        - Hyundai-Kia EDR Tool Operator-Technician Course (live online and in-person)
        - Tesla EDR Tool Operator-Technician Course (live online and in-person)
        - Toyota Safety Sense Systems & Data Retrieval (Techstream/VCH) Course
    - Past instructor for the following classes: ACTAR Test Preparation Course, Basic-Intermediate CrashZone/CrimeZone, Advanced CrashZone/CrimeZone, Forensic Mapping System Certification Course, Advanced Forensic Mapping System Course.
- University of North Florida, Institute of Police Technology and Management (IPTM) Adjunct Faculty, April 2024 to present; Course development and lead instructor for the following courses:
    - Bosch CDR Tool Technician – In person and Online training courses
    - Hyundai-Kia & Tesla EDR Tools Technician – In person and Online training courses
- Collision Safety Institute, January 2012 to 2020: Co-instructor for the CDR Technician Train the Trainer Course
- Henry C. Lee Institute of Forensic Science, University of New Haven (CT), April 2008 to December 2015; Principal instructor for the following classes Basic-Intermediate CrashZone/Crimezone, Advanced CrashZone/CrimeZone, Forensic Mapping with PocketZone
- WeCARE, West Coast Accident Reconstruction Equipment & Education, August 2003 to December 2021; Instructor for the following classes: Traffic Collision Reconstruction – The Auto-Pedestrian Impact. Subject matter includes: Physical evidence: ground, pedestrian, and vehicle, Haddon matrix, forensic photography, determining AOI, determining final rest, vehicle documentation, pedestrian injury.
- Law Enforcement Training Center, The Office of the Sheriff, Contra Costa County, August 2005 to March 2009; Principle Instructor for the following classes: Basic CrashZone/Crimezone, Advanced CrashZone/CrimeZone, and Computer-Aided Collision Diagramming using AutoSketch. Instructor for the following classes: P.O.S.T. Intermediate, Advanced Traffic Collision Investigation, Traffic Collision Reconstruction II. Subject matter includes: Coefficient of friction determination, field skid testing and practical application, vehicle damage factors, documentation, and diagramming.
- Ben Clark Training Center, Riverside County Sheriff's Department (Adjunct Faculty, Riverside Community College), March 2002 to August 2006; Instructor for the following classes: P.O.S.T. Basic, Intermediate, and Advanced Traffic Collision Investigation, Computer-Aided Collision Diagramming using AutoSketch. Subject matter included: Coefficient of friction determination, collision investigation procedures, collision photography, collision scenario practical applications, diagramming, forensic evidence, measuring and documenting skidmarks, report content and format, skidmark identification, traffic collision laws, and vehicle factors.
- Orange County Sheriff's Regional Training Center, Orange County Sheriff's Department, May 2001 to August 2006; Instructor for the following classes: P.O.S.T. Basic, and Intermediate Traffic Collision Investigation. Subject matter included: Accident scene response & evaluation, determining primary collision factors, traffic collision laws, coefficient of friction determination, mathematical formulae, field skid testing and practical application.
- Orange County Sheriff's Regional Training Center, Orange County Sheriff's Department, May 2001 to March 2003; Instructor for the P.O.S.T. Requalification course. Subject matter included: Driving under the influence, emergency vehicle operations (pursuit driving & "Code 3" operation), and vehicle code laws.
- Orange County Sheriff's Training Academy, Orange County Sheriff's Department, March 2000 to August 2003; Instructor for P.O.S.T. Learning Domain 28 of the basic academy. Subject matter included: Laws of Arrest, Traffic Enforcement, and vehicle code laws.

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Guest Speaker Appearances

- Recent Genesis/ Hyundai/ Kia ADAS/EDR Research, NAPARS Webinar via Zoom (co-presenter), 2 hours, July 2026*
- Engineering Systems, Inc. (ESI) Automotive Group Meeting, Hyundai-Kia & Tesla EDR tools Update, Aurora, IL, August 2025
- SATAI Spring Conference, Hyundai-Kia EDR Tool Update, Glendale, AZ, March 2025*
- NAPARS Symposium on EDR Research and Training, EDR Backpowering/Repowering Update ¦ Using OEM Service Information, Oklahoma City, OK, April 2024*
- Ignition "Cycology" – Understanding Ignition Cycles, NAPARS Webinar via Zoom, 2 hours, May 2023*
- World Reconstruction Exposition 2023 (WREX), Reconstruction Midway: live demonstration of pre-crash data sources & diagnostic scan tools ¦ Breakout Session Presentations: Automotive Test Equipment, Diagnostic Trouble Codes, and Pre-Crash Data Sources, Orlando, FL, April 2023*
- MATAI Traffic Crash Reconstruction Conference, Automotive Test Equipment & DTCs/ Pre-crash Data Sources & Troubleshooting, Des Moines, Iowa, September 2022*
- CAARS Quarterly Training, Understanding and Using Ignition Cycles in your Investigations, via Zoom, May 2022*
- IATAI Traffic Crash Reconstruction Conference, Hyundai-Kia EDR & Tesla EDR Tool breakout sessions (presented twice), October 2021*
- IATAI Traffic Crash Reconstruction Conference, CDR Technician Update, Ignition Cycle Updates, October 2021*
- Advanced EDR Technician Techniques & Problem Solving, hosted by IATAI, Sprinfield, Illinois, 16 hour class, September 2021*
- WATAI Spring Conference, Crash Data Retrieval (CDR) Technician Updates, Understanding Ignition Cycles, Q&A Panel Disucssion, via Zoom, May 2021*
- Event Data Retrieval User's Summit, Repowering and CDR Technician Review/Update, Ignition "Cycology" – Understanding Ignition Cycles, Houston, Texas, March 2020*
- Capital City Trial Lawyers Association (CCTLA), Vehicle Event Data Recorders (EDR) & Crash Data Retrieval (CDR), Sacramento, California, March 2019
- Event Data Retrieval User's Summit, CDR Technician Troubleshooting & Advanced Data Collection Techniques, Houston, Texas, March 2019*
- Zenith Insurance Company, Vehicle Event Data Recorders (EDR), Roseville, California, August 2018
- Event Data Retrieval User's Summit, Power Loss and "Reported" Vehicle Speeds, Houston, Texas, March 2018*
- Jacobsen & McElroy Law Firm, Vehicle Event Data Recorders (EDR), Sacramento, California, November 2017
- Western States Auto Theft Investigators Association (WSATI), Vehicle Event Data Recorders (EDR), Dublin, California, August 2017
- Event Data Retrieval User's Summit, *Pre-Crash Data Recorded by the ACM. Where does it come from? Houston*, Texas, March 2017*
- Crash Data Retrieval User's Summit, *Repowering Vehicles – The Current State of the Art*, *Houston*, Texas, January 2016*
- Crash Data Retrieval User's Summit, *New Vehicle Technologies – Their Impact on CDR Imaging*, *Houston*, Texas, January 2015*
- Crash Data Retrieval User's Summit, *Assessing and Accessing the DLC/OBDII Port*, *Houston*, Texas, January 2014*
- Arnold Law Firm, Just What is Crash Data Retrieval, Sacramento, California, April 2013
- Crash Data Retrieval User's Summit, *Advanced Repowering Techniques, Strategies for newly supported OE lines*, *Houston*, Texas, January 2013*
- 7th Annual Tri-Division Educational Conference; hosted by NSDIAI, *An Overview & Benefits of the Use of Electronic Devices (lasers, total stations, scanners) in Measuring Crime Scenes*, November 2012
- 2012 Joint Crash Conference; hosted by NYSTARS, Forensic *Mapping Review & Best Practices workshop*, Fishkill, New York, October 2012*

NOT FOR DISCLOSURE

- 12th Annual Pennsylvania State Police Reconstruction Seminar, *Forensic Mapping Review & Best Practices, Post Crash Vehicle Inspections*, State College, Pennsylvania, September 2012*
- California Association of Accident Reconstruction Specialists, *Auto-Pedestrian Crash Reconstruction – Determining AOIs,* San Ramon & Anaheim, CA, August 2012*
- Crash Data Retrieval User's Summit, *Toyota Update and Comparison of Toyota ROT and CDR Data, "Repowering 101" demonstration and breakout session, Houston*, Texas, January 2012*
- California Association of Accident Reconstruction Specialists, *CDR Technology Update,* Anaheim, CA October 2011*
- International Association of Special Investigation Units - New England Chapter (NEIASIU), New England Association of Insurance Fraud Investigators(NEAIFI), 6th Annual Joint Training Seminar, *Imaging Crash Data for Use in Fraud Investigation and Settlement Posture*, Boxboro, MA, June 2011
- Office of Traffic Safety (OTS) Leadership and Training Seminar, *Crash Investigation Skills Building Track: Forensic Crash Scene Documentation, Crash Data Retrieval Update, Post Crash Vehicle Inspections, Crash Scene Photography*, San Diego, CA, April 2011
- Orange County Urban Auto Task Force (UATF): CA Highway Patrol, CA Department of Insurance – Fraud Division, Orange County District Attorney's Office, *Crash Data Retrieval*, Santa Ana, CA, December 2010
- Kinetic Energy Press, 1st Annual Crash Investigation Skill Building Conference, *Best Practices in Forensic Measuring/Diagramming of Crash and Crime Scenes*, Hillsboro, OR, February 2010
- California State Division International Association for Identification, 93rd Annual Training Seminar, *Computer-Aided Crime Scene Diagramming*, San Jose, CA, May 2009
- Northern California Fraud Investigators Associations (NCFIA), *New Investigative Technology, Techniques, and Tips*, Sacramento, CA, February 2009
- San Diego County Collision Investigators Association winter training seminar, *Forensic Mapping Workshop*, San Diego, CA, February 2009
- Collision Safety Institute, *Crash Data Retrieval (CDR) Technician Course*, North Las Vegas, NV, December 2008
- California Association of Accident Reconstruction Specialists, *Vehicle factors in crash reconstruction,* Santa Ana & Sacramento, CA, August 2008*
- California Association of Accident Reconstruction Specialists, *Vehicle damage documentation & crush measurement protocol*, Santa Rosa, CA, July 2007*
- California Association of Accident Reconstruction Specialists, *Vetronix Crash Data Retrieval Technician Course*, Orange, CA, February 2007*
- California Association of Accident Reconstruction Specialists, *Vetronix Crash Data Retrieval Technician Course*, Vacaville, CA, January 2007*
- California Association of Accident Reconstruction Specialists Annual Conference, Crash Reconstruction – Start to Finish: 1st *Responder – Where do I begin & end, case study presentation,* South Lake Tahoe, CA, November 2006*
- Brea Police Department, *Vehicle Damage Documentation & Diagramming Using a Total Station*, Brea, CA, February 2006
- OCSD Major Accident Reconstruction Team Quarterly Training, *Vetronix* C*rash Data Retrieval System Technician Course,* Aliso Viejo, CA, June 2006
- Anaheim Police Department, *Forensic Mapping System Overview & how to download into CrashZone*, Anaheim, CA, February 2006
- San Jacinto Police Department (Riverside Sheriff's Dept.), *Forensic Mapping System Overview*, San Jacinto, CA, March 2005
- OCSD Major Accident Reconstruction Team Quarterly Training, *Vetronix Crash Data Retrieval System Overview*, Laguna Hills, CA, October 2004
- California Association of Accident Reconstruction Specialists Annual Conference, CA^{2}RS versus Bikes and other in-line wheeled devices: *Applicable Vehicle Code Laws*, Anaheim, CA, October 2003*
- Cox Communications Field Safety Team Meeting, *Collision Avoidance, On-the-job Traffic Collision Procedures, Vehicle Code Laws*, Rancho Santa Margarita, CA, October 2003.
- California Association of Accident Reconstruction Specialists, *Coefficient of Friction Determination – Methodology & Special Problems*, Anaheim, CA, August 2003*

NOT FOR DISCLOSURE

- City of San Juan Capistrano Public Works Safety Meeting, *Vehicle Code Laws - Legal Update*, San Juan Capistrano, CA, May 2003
- City of San Juan Capistrano Public Works Safety Meeting, *On-the-job Traffic Collision Procedures*, San Juan Capistrano, CA, September 2001
- City of San Juan Capistrano Public Works Safety Meeting, *Vehicle Code Laws - Legal Update*, San Juan Capistrano, CA, October 2000

Publications and Selected Papers

- Nagarajan, S.R., Boots, K.E., Harrington, S. (2026) *Genesis/Hyundai/Kia ADAS Research* [White Paper]. Forensic Rock & Kent E. Boots & Associates.
- *Average Daily Ignition Cycles – An Update,* Kent E. Boots & Wade Bartlett, Accident Reconstruction Journal, Volume 33, No. 3, May/June, 2023, page 22
- *Ignition "Cycology": Understanding Ignition Cycles,* Collision magazine, Fall 2020, Volume 14, Issue 2, page 60
- *Toyota, Lexus, and Scion CDR Coverage,* Collision magazine, Spring 2012, Volume 7, Issue 1, page 100
- *Technology Update (CDR),* Skidmarks, Fall 2011, Volume 54, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Crash Data Retrieval Update,* Skidmarks, Spring 2011, Volume 52, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *What do you think? – warning sign advisory speeds,* Skidmarks, Fall 2010, Volume 50, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Fundamentals of Forensic Mapping: What is Forensic Mapping?, Forensic Mapping Equipment, Software, Set up Protocol, Shooting the Scene, Vehicle Damage Documentation, Crime Scene Documentation, Crime Scene Documentation, Troubleshooting, Court Testimony, T^3 – Tools, Tips, and Techniques, Glossary of Terms, Appendix*, published by Kinetic Energy Press, 2010, ISBN: 978-0-9716634-0-4
- *Crash Data Retrieval Update,* Skidmarks, Spring 2010, Volume 48, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Crash Data Retrieval Update,* Skidmarks, Summer 2009, Volume 45, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Crash Data Retrieval Update,* Skidmarks, Spring 2009, Volume 44, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Total Station Protocol Assures Higher Accuracy,* Collision magazine, Vol. 2 Issue 2, page 98
- *Crush Jig Simplifies Vehicle Measuring, Helps Juries,* Collision magazine, Vol. 2 Issue 2, page 101
- *2005 Vehicle Code Updates*, Skidmarks, Spring 2006, Volume 32, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *What is Jaywalking?*, Skidmarks, Spring 2005, Volume 28, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *2004 Vehicle Code Updates*, Skidmarks, Winter 2004, Volume 27, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Mini-motorcycles and "Pocket Bikes",* Skidmarks, Summer 2004, Volume 25, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Right-of-Way Collisions,* Skidmarks, Spring 2004, Volume 24, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Personal Assistive Mobility Devices,* Skidmarks, Winter 2003, Volume 23, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Motorized Scooters* - Skidmarks, Summer 2003, Volume 22, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Blue Headlamps* - Skidmarks, Spring 2003, Volume 21, California Association of Accident Reconstruction Specialists (CA^{2}RS).
- *Acceleration and Skid Testing of Police and Fire Apparatus Vehicles* – Skidmarks, Spring 2002, Volume 17, California Association of Accident Reconstruction Specialists (CA^{2}RS).

NOT FOR DISCLOSURE

- *Equipment used in acceleration and skid testing, and acceleration & coefficient of friction defined* – Skidmarks, Winter 2001, Volume 16, California Association of Accident Reconstruction Specialists (CA^2RS).

Professional Affiliations

- **The Crash Hub (formerly Accident Reconstruction Communication Network, ARC)** – Expert Member, May 2002 to present
- **California Association of Accident Reconstruction Specialists (CA^2RS) –** Member, March 1999 to present (Lifetime member). Board of Directors, October 2001 to 2010. Vice-Chair, October 2002 to December 2006. Chairperson, January 2007 to December 2010, training coordinator January 2009 to January 2011
- **California State Division, International Association for Identification (CSDIAI)** – Associate Member, June 2009 to December 2021
- **California Teachers Association (CTA)** – Member, September 2003 to August 2006
- **International Association for Identification (IAI)** – Associate Member, July 2008 to September 2022
- **International Network of Collision Reconstructionists (INCR)** – Member, January 2001 to present
- **National Association of Professional Accident Reconstruction Specialists (NAPARS)** – Member, January 2023 to present
- **Northern California Fraud Investigators Association (NCFIA)** – Member, October 2008 to present
- **Orange County Traffic Officer's Association (OCTOA)** – Department Member, January 2002 to August 2006
- **Professional Society of Forensic Mapping (PSFM) –** Full Member, April 2000 to January 2020 (organization disbanded). Board of Directors, President, January 2012 to January 2014
- **Society of Automotive Engineers –** Professional Member, September 2006 to September 2014
- **Southwestern Association of Technical Accident Investigators (SATAI)** – Member, June 2003 to present
- **San Diego County Collision Investigators Association (SDCCIA)** – Member, March 2004 to August 2006
- **Washington Association of Technical Accident Investigators (WATAI)** – Member, October 2013 to October 2023. Board of Directors, May 2021 to October 2022

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