

MARK A. “TONY” FREUND, BSME, MSBME

CURRICULUM VITAE

EDUCATION

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|----|---|------|
| MS | Biomedical Engineering UT Health Science Center San Antonio/ University of Texas at San Antonio | 2019 |
| BS | Mechanical Engineering The University of Texas at San Antonio San Antonio, Texas | 2012 |
| BA | General Studies Engineering Schreiner University Kerrville, Texas | 2009 |

PROFESSIONAL EXPERIENCE

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|---|--------------|
| Technical Director Biodynamic Research Corporation San Antonio, Texas | 2021-Present |
| Associate Technical Director Biodynamic Research Corporation San Antonio, Texas | 2019 - 2021 |
| Engineer Biodynamic Research Corporation San Antonio, Texas | 2012 - 2019 |
| Quantitative Lab Tutor University of Texas San Antonio, Texas | 2011- 2012 |
| Merchandiser Pepperidge Farm San Antonio, Texas | 2005 - 2011 |

Warehouse Assistant 2006 – 2009
Schreiner University
Kerrville, Texas

Small Engine Mechanic 2004 - 2005
Certified Small Engine
San Antonio, Texas

PROFESSIONAL REGISTRATIONS

The Accreditation Commission for Traffic 2015-Present
Accident Reconstruction (ACTAR #2635)

COURSES/SEMINARS

Applied Vehicle Dynamics 2024
SAE
BMW Performance Center
Greer, South Carolina

Night Time Crash Scene Investigation 2024
National Association of Professional
Accident Reconstruction Specialist (NAPARS)
San Antonio, Texas

Recon-3D Training Course 2023
Recon3D
San Antonio, Texas

EDC Simulations Course 2023
Engineering Dynamics Company, LLC
San Antonio, Texas

Remote Pilot-in-Command Certification 2022
Federal Aviation Association
The Pilot Shoppe
San Antonio, Texas

Point Clouds in Collision Reconstruction: 2022
Speed from Video and Crush from Photos-
Lightpoint
San Antonio, Texas

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| Event Data Recorder Use in Traffic Crash Reconstruction Level 1 Institute of Police Technology and Management University of North Florida | 2020 |
| Fundamental Techniques of Crash Investigation Institute of Police Technology and Management University of North Florida | 2020 |
| FARO Laser Scanner On-Site Training San Antonio, TX | 2018 |
| Crash Data Retrieval (CDR) Technician Levels 1 and 2 Collision Safety Institute Crash Data Retrieval Specialist Arlington, Texas | 2015 |
| ARAS360 Advanced 3D Computer Diagramming and Animation for Incident Reconstruction San Antonio, Texas | 2013 |
| Traffic Accident Reconstruction I and II Northwestern University Traffic Institute Evanston, Illinois | 2012 |

PRESENTATIONS

Presenter: “Quick Hit #1: Using Public Crash Databases”; 2023 DRI Strictly Automotive Seminar; Washington, DC; August 16-18, 2023.

Guest Instructor: USAF School of Aerospace Medicine, “Accident Reconstruction”; Virtual, May, 2022.

Instructor: Twenty-Eighth Annual Scientific Session with Advanced Clinical Skills, American Academy of Disability Evaluating Physicians, “Introduction to Accident Reconstruction”, San Antonio, Texas, November, 2014.

PUBLICATIONS

Bonugli, E., Watson, R., Freund, M., and Wirth, J., “Expanded Characterization of Force-Deflection Properties of Vehicle-to-Vehicle Systems,” SAE Technical Paper 2017-01-1417, 2017, doi: 10.4271/2017-01-1417.

Germane AG; Freund MA; Gwin LP; McNish TM; Scott WR; Day CM, and Bain CE. Technology in the courtroom. Curran J and Meaders K, eds. IN: *Expert Witnesses: Motor Vehicle and Accident Reconstruction Cases, 2016-2017 Edition*. Thomson Reuters; 2016; pp. 1073-1094.

Wirth J; Bonugli E, and Freund M. "Assessment of the accuracy of Google Earth imagery for use as a tool in accident reconstruction," SAE Technical Paper 2015-01-1435. 2015:doi:10.4271/2015-10-1435.

Gwin L, Guzman H, Bonugli E, Scott W. "Measurement of Tolerable and Non-Injurious Levels of Back-to-Front Whole Body Accelerations," SAE Technical Paper 2014-01-0492, 2014, doi:10.4271/2014-01-0492.

Funk J, Bonugli E, Guzman H, and Freund M. "Comparison of Quasistatic Bumper Testing and Dynamic Full Vehicle Testing for Reconstructing Low Speed Collisions," *SAE Int. J. Passeng. Cars - Mech. Syst* 7(3):2014, doi:10.4271/2014-01-0481.

Cormier J, Freund M, Bonugli E, and Guzman H. "Passenger Car Response to Interaction with Tractor-Trailer Steer Tire Lugs," *SAE Int. J. Commer. Veh.* 7(1):59-71, 2014, doi:10.4271/2014-01-0475.

Bonugli E, Wirth J, Funk J, Cormier J. "Characterization Of Force Deflection Properties For Vehicular Bumper-To-Bumper Interactions," *SAE Int. J. Trans. Safety* 2(2):336-354, 2014, Doi:10.4271/2014-01-1991.