

**MARK A. “TONY” FREUND, BSME, MSBME**

**CURRICULUM VITAE**

**EDUCATION**

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**

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**

Hit and Run: Who Was Driving? 2025  
Institute of Police Technology and Management  
University of North Florida

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: Speed from Video and Crush from Photos- Lightpoint San Antonio, Texas	2022
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.