

**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**

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

Event Data Recorder Use in Traffic Crash Reconstruction 2020  
Level 1  
Institute of Police Technology and Management  
University of North Florida

Fundamental Techniques of Crash Investigation 2020  
Institute of Police Technology and Management  
University of North Florida

FARO Laser Scanner On-Site Training 2018  
San Antonio, TX

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.