

CURRICULUM VITAE

Dusty Ray Arrington, B.S., M.S.

A&M Forensics and Engineering, Inc.
2427 Earl Rudder Freeway South
College Station, Texas 77845
979-696-6681

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Education:

Masters of Science, Civil Engineering, Texas A&M University,
College Station, Texas, 2013

Bachelor of Science, Civil Engineering, Texas A&M University,
College Station, Texas, 2005

Experience:

A&M Forensics and Engineering, Inc. (2017 – present)

Accident Reconstructionist; Investigation, inspection, testing, crash testing, human factors and reconstruction of vehicle accidents consisting of automobiles, tractor/trailers, locomotives, motorcycles, bicycles and pedestrians. Professional Civil Engineer in roadway design, construction and maintenance. Review of roadway design, construction and maintenance and compliance with standards.

Texas A&M Transportation Institute; The Texas A&M University, College Station, Texas (2006-present)

Titles:

Associate Transportation Researcher, Crashworthy Structures, Texas A&M Transportation Institute, September 2013 - Present.

Engineering Research Associate, Crashworthy Structures Program, Texas A&M Transportation Institute, December 2007 - August 2013.

Graduate Student Worker, Roadside Safety Program, Texas A&M Transportation Institute, May 2006 - November 2007.

Synopsys:

Over 10 years of experience as a lead designer/researcher in Roadside Safety and Physical Security. I work closely with manufacturers, state, and federal entities in the development of improved products to expand product inventories to better protect the citizens of this country. I have conducted over 190 full scale crash tests, witnessed and reviewed more than 500 additional full and small scale tests. Additionally, I managed the Central and Western Field Test Center, wrote three (3) standards on impact testing of delineators/ELMs, and gave presentations over my current research at Transportation Research Board (TRB) annual meeting, AFF10, AFB20, AASHTO TF13, NTPEP, ATSSA.

Assistant Accident Reconstructionist, Adamson Engineering LLC, June 2001 - June 2006

Assist in accident Reconstructionist; Investigation, inspection, testing, crash testing and reconstruction of vehicle accidents consisting of automobile, tractor/trailer, motorcycle, bicycle and pedestrians.

Specializations:

Accident Investigation and Reconstruction

Traffic Accident Investigation and Reconstruction, Computer Simulation and Animations. Vehicular inspection and testing. Commercial vehicle inspection and accident reconstruction. Expert witness in the field of automotive, heavy vehicle, motorcycle, bicycle and pedestrian accident investigation and reconstruction.

Roadside Safety

Crashworthy Guardrail, Bridge rail, Sign support, Luminaire Support, Crash Cushion, and other roadside safety hardware design. Impact analysis using LS-DYNA and BarrierVII. Structural design using hand calculations, Solidworks, and Solidworks Simulation. Design to meet NCHRP Report 350, MASH 09, MASH 16, EN1317, MUTCD and AASHTO standards.

Physical Security

Design of Bollards, Walls, Earthen Structures, Gates, Nets, Wedges, Fences, and other physical security devices to meet ASTM F2656, PAS 68, and ASTM F3016 impact standards. Impact analysis using LS-DYNA and Structural design using hand calculations, Solidworks, and Solidworks Simulation. Partnered with U.S. Department of State, Department of Navy, Department of Energy, Sandia National Laboratories, and many other local and state agencies.

Delineator and Express Lane Marker (ELM) Impact Durability Testing

Developed impact durability standards for FDOT, TxDOT, and NTPEP. Designed test vehicle retrofits to enhance safety and durability. Trained and experienced impact test vehicle operator. Regularly impact test samples 200 or more times at 70 mph. Design and analysis for product impact performance.

Area Friction Measurement

Lead researcher at Central and Western Field Test Center. Conducted calibrations on E274 Friction measurement systems per E2793. Trained system operator of center's reference E274 vehicle. Helped maintain and rewrite calibration procedures through interaction with ASTM E17 subcommittee and subcommittee workshops.

Crash Testing

To date, I have been the project manager and/or have conducted over 190 full scale impact tests. Have had the following responsibilities: high speed photography analyst, project manager, test vehicle operator, and test conductor. Additionally, I have designed cable guidance and ballast systems for anything ranging from a 2,400 lb small passenger vehicle to an 80,000 lb tractor-trailer.

Static and Small Scale Testing

Developed, designed, and fabricated static load test frames, test measurement equipment, and surrogate impact vehicles. Have had the following

responsibilities: high speed photography analyst, project manager, test vehicle operator, and test conductor.

Courses Attended and Certifications:

Successfully Completed: Accident Reconstruction Certification Program; Society of Automotive Engineers International; July 2018

Photogrammetry and Analysis of Digital Media; Society of Automotive Engineers International; July 2018

Vehicle Dynamics for Passenger Cars and Light Trucks; Society of Automotive Engineers International; April 2018

Vehicle Crash Reconstruction: Principles and Technology Phoenix, Arizona; December 5-7, 2017

Commercial Vehicle Braking Systems; Society of Automotive Engineers International; Troy, Michigan; November 8-10, 2017

Accessing and Interpreting Heavy Vehicle Event Data Recorders; Society of Automotive Engineers International; Oxnard, California; October 23-27, 2017

Advanced Crash Reconstruction Utilizing Human Factors; Northwestern University Center for Public Safety; Evanston, Illinois; May 15-19, 2017

Crash Data Retrieval (CDR) Data Analyst Course; Collision Safety Institute; Conroe, Texas, April 24 – 28, 2017;

Texas A&M Transportation Institute (TTI) Leadership and Development (LEAD) Program, CORE Series, FALL 2016

Friction Measurement Equipment Operator Training Course - May 13, 2013

TEEX (TAA510) - Accident Avoidance Driver Training (TEEX) – November 9, 2012

TEEX (AIR545) - Advanced Collision Investigation -November 19, 2010

Publications:

D.R. Arrington, R.P. Bligh, W.L. Menges, D.L. Kuhn. *Crash Test and Evaluation of Temporary Wood Sign Support System for Large Guide Signs.* 9-1002-15-4. Project No. 9-1002-15. Accident Reconstruction Journal, Volume 28, NO.1; January/February 2018

C. Silvestri Dobrovolny, D.R. Arrington, N.D. Schulz, C.B. Xavier. *FEA Design and Crashworthiness Evaluation of a 31-Inch W-Beam Guardrail System for Placement on a 3H:1V Sloped Terrain Configuration.* Conference proceedings. American Society of Mechanical Engineers.

C. Silvestri Dobrovolny, H. Prodduturu, D.R. Arrington, N.D. Schulz, S. Hurlebaus, A.J. Rupp. *A Base Study to Investigate MASH Conservativeness of*

Occupant Risk Evaluation. Conference proceedings. American Society of Mechanical Engineers.

C.S. Dobrovolny, D.R. Arrington, P. Betancourt, K.M. White. *Stacked W-Beam Transition for 31" Guardrail*. 601721-1.

C. Silvestri Dobrovolny, H. Prodduturu, D.R. Arrington, N.D. Schulz, A.J. Rupp, J. Hu. *Project Investigation on Correlation Between Roadside Safety Hardware and Vehicle Safety Standards Evaluation Criteria*. Conference proceedings. Center for Advancing Transportation Leadership and Safety (ATLAS Center), Ann Arbor, MI. 2016.

G.L. Ullman, R.E. Brydia, L. Ruback, A.P. Voigt, D.R. Arrington. *Completion of Construction and Installation of Travel Time Signs on I-35 in Austin*. 5-9049-05-S. Texas A&M Transportation Institute, College Station, TX. 2016.

G.L. Ullman, R.E. Brydia, L. Ruback, A.P. Voigt, D.R. Arrington. *Construction and Installation of Travel Time Signs on I-35 in Austin*. 5-9049-05-1. Project No. 5-9049-05. Texas A&M Transportation Institute, College Station, TX. August 2016.

G.L. Ullman, R.E. Brydia, L. Ruback, D.R. Arrington, A.P. Voigt. *Installation of Dynamic Travel Time Signs and Efforts to Obtain and Test a Graphical Route Information Panel (GRIP) Sign in Austin*. 5-9049-03-7. Project No. 5-9049-03. Texas A&M Transportation Institute, College Station, TX. August 2016.

D.R. Arrington, R.P. Bligh, W.L. Menges, D.L. Kuhn. *Crash Test and Evaluation of Temporary Wood Sign Support System for Large Guide Signs*. 9-1002-15-4. Project No. 9-1002-15. Texas A&M Transportation Institute, College Station, TX. July 2016.

C. Silvestri Dobrovolny, D.R. Arrington, N.D. Schulz, C.B. Xavier. *Design and Finite Element Analysis of a MASH 31-inch W-Beam Guardrail System for Placement on 3H:1V Sloped Terrain Configuration (2014 WV-62)*. 12-602951-00001. Texas A&M Transportation Institute, College Station, TX. September 2015.

C. Silvestri Dobrovolny, D.R. Arrington, A. Mohanakrishnan. *Buried Terminal Design Evaluation for Use with 31-Inch Guardrail Height through Finite Element Simulations*. 405160-39. Texas A&M Transportation Institute, College Station, TX. April 2015.

D.R. Arrington, L. Theiss, R.A. Zimmer, W.L. Menges. *Development of Delineator Testing Standard*. Test Report. 0-6772-1. Project No. 0-6772. Texas A&M Transportation Institute, College Station, TX. February 2015.

D.R. Arrington, L. Theiss, R.A. Zimmer. *Development of New Delineator Material and Impact Testing Standard to Prevent Premature Failures Specific to Installation Application*. 0-6772-S. Texas A&M Transportation Institute, College Station, TX. 2014.

C. Silvestri Dobrovolny, D.R. Arrington, M.S. Brackin, R.P. Bligh, A. Hangul, P. E.; *Design and Finite Element Analysis of Single Slope Median Wall for Grade Separation*. Transportation Research Board Annual Meeting. Transportation Research Board, Washington, DC. 2014.

R.P. Bligh, D.R. Arrington, N.M. Sheikh, A. Meza, C. Silvestri Dobrovolny. *Low-Cost Median Barrier Gate*. Transportation Research Record. 2309. Transportation Research Board, Washington, DC. 2014.

R.P. Bligh, D.R. Arrington, W.L. Menges, D.L. Kuhn. *Development of Design Standards for Mounting Temporary Large Guide Signs*. 0-6782-S. Texas A&M Transportation Institute, College Station, TX. 2014.

R.P. Bligh, D.R. Arrington, W.L. Menges, D.L. Kuhn. *Skid-Mounted Support System for Temporary Guide Signs*. 0-6782-2. Texas A&M Transportation Institute, College Station, TX. November 2014.

R.P. Bligh, D.R. Arrington, W.L. Menges. *Temporary Large Guide Signs*. 0-6782-1. Texas A&M Transportation Institute, College Station, TX. May 2014.

C. Silvestri Dobrovolny, D.R. Arrington, P. Betancourt, K.M. White. *Stacked W-Beam Transition for 31" Guardrail*. 601721-000. Texas A&M Transportation Institute, College Station, TX. April 2014.

D.R. Arrington, J.M. Holt, R.P. Bligh. Concrete Roadside Barrier Anchorage Details for 5-in., Cast-in-Place Decks on Prestressed Beams. *Structures 2012, Transportation Research Record. 2313*. Transportation Research Board, Washington, DC. 2013, pp. 33-41.

C. Silvestri Dobrovolny, D.R. Arrington, R.P. Bligh. *Development Guidance for Minimum Sign Area for Slipbase Supports*. Transportation Research Board Annual Meeting. Transportation Research Board, Washington, DC. 2013.

D.R. Arrington, R.P. Bligh, W.L. Menges. *MASH Test 3-21 on TL-3 Thrie Beam Transition Without Curb*. 9-1002-12-3. Texas A&M Transportation Institute, College Station, TX. July 2013.

C.S. Dobrovolny, D.R. Arrington, R.P. Bligh, W.L. Menges. *Development and MASH Full-Scale Crash Testing of a High-Mounting-Height Temporary Single Sign Support with Aluminum Sign*. 9-1002-12-5. Texas A&M Transportation Institute, College Station, TX. March 2013.

C. Silvestri Dobrovolny, M.S. Brackin, D.R. Arrington. *Single Slope Median Wall for Grade Separations*. 405160-33/35. Texas A&M Transportation Institute, College Station, TX. January 2013.

R.P. Bligh, D.R. Arrington, N.M. Sheikh, A. Meza, C. Silvestri Dobrovolny. *Low-Cost Median Barrier Access Gate*. Transportation Research Board Annual Meeting. Transportation Research Board, Washington, DC. 2012.

C. Silvestri Dobrovolny, D.R. Arrington, R.P. Bligh, W.L. Menges. *Development Guidance for Sign Design Standards*. 0-6363-1. Texas Transportation Institute, College Station, TX. February 2012.

R.P. Bligh, D.R. Arrington, C. Silvestri Dobrovolny. *Improvements to Large and Small Roadside Sign Hardware and Design*. PSR. 0-6363-S. Texas Transportation Institute, College Station, TX. 2011.

R.P. Bligh, A. Abu-Odeh, D.R. Arrington, N.M. Sheikh, C. Silvestri Dobrovolny, W.F. Williams. *Roadside Safety Device Crash Testing Program*. PSR. 9-1002-S. Texas Transportation Institute, Texas A&M University System, College Station, TX. 2011.

D.R. Arrington, R.P. Bligh, W.L. Menges. *MASH Test 3-37 of the TxDOT 31-Inch W-Beam Downstream Anchor Terminal*. 9-1002-6. Texas Transportation Institute, Houston, TX. December 2011.

R.P. Bligh, D.R. Arrington, W.L. Menges. *Development of a MASH TL-2 Guardrail-to-Bridge Rail Transition Compatible with 31-inch Guardrail*. 9-1002-8. Texas Transportation Institute, Houston, TX. December 2011.

D.R. Arrington, R.P. Bligh, W.L. Menges. *MASH Test 3-11 on the 5-Inch Cast In Place Deck Barrier Anchors*. 9-1002-7. Texas Transportation Institute, College Station, TX. December 2011.

R.P. Bligh, D.R. Arrington, C. Silvestri Dobrovolny, W.L. Menges. *Development of a MASH TL-3 Median Barrier Gate*. 9-1002-2. Texas Transportation Institute, College Station, TX. June 2011.

D.R. Arrington, D.C. Alberson, W.L. Menges. *Development of Field Applied Fittings for Wire Rope Bridge Barrier and Conversion to High tension*. 405160-11-1. Texas Transportation Institute, College Station, TX. August 2010.

D.R. Arrington, R.P. Bligh, W.L. Menges. *Alternative Design of Guardrail Posts in Asphalt or Concrete Mowing Pads*. 405160-14-1. Texas Transportation Institute, College Station, TX. July 2009.

National Committee Chairs:

AASHTO Task Force (TF) 13 Subcommittee #1 – Publications Maintenance Co-Chair (2 years)

AASHTO TF17 Subcommittee #11 – Standardization of Roadside Delineation (1 Year)

Awards:

Practice-Ready Paper Award, Design and Construction Group, Transportation Research Board, 2013, for the paper “*MASH TL-2 Guardrail-to-Bridge Rail Transition Compatible with 31-inch Guardrail*”.

TTI/Trinity Herbert H. Richardson Team Award, 2016, *The -35 Mobility Coordination and Traveler Information Team*.

Texas A&M Transportation Institute Roadside Safety and Physical Security Division, *Spark Plug Award, The bright ideas presented in response to the Guide System Challenge*.