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133 East 143rd Avenue
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Curriculum Vitae

Jay Przybyla, Ph.D., P.E.

Professional Profile

Dr. Przybyla ("prizz-bee-lah") is a licensed professional engineer and senior consultant at Focus Forensics with experience, education, and training in the fields of civil engineering, forensic engineering, and transportation safety. He holds a Master's and Ph.D. in transportation engineering from the University of Utah and a Bachelor's in civil engineering from Brigham Young University. Specific areas of expertise include vehicle collision reconstruction, commercial vehicle crash investigation and analysis, roadway design and traffic controls, highway-rail grade crossings, intermodal facilities, train collision and automotive safety and design issues.

Dr. Przybyla leads the ongoing engineering research program at Focus Forensics, and manages all projects in the Mountain West and West Regions for the consulting engineering firm, while also providing consulting services to clients nationwide. He has completed the engineering investigation and evaluation of vehicle, driver, and roadway issues in hundreds of cases across the United States.

Dr. Przybyla is a published author in safety engineering literature with a focus on identifying, quantifying, and developing solutions for major transportation related risks. He served as adjunct faculty at Utah Valley University teaching engineering and mathematics courses. He also guest lectured at Brigham Young University and the University of Utah on accident reconstruction and transportation safety.

Prior to his years of work in transportation engineering, Dr. Przybyla served as a state trooper for the Utah Highway Patrol focusing on DUI detection, interdiction, and accident investigations. He completed numerous accident investigations and accident reconstructions as a member of Utah's Multi-Discipline Accident Investigation Team. Dr. Przybyla has extensive experience testifying in civil and criminal cases, including providing expert witness testimony at trial.

Licensure

Professional Engineer, State of Colorado,	#PE 0055521
Professional Engineer, State of Idaho,	#P-18427
Professional Engineer, State of Illinois,	#62-064663
Professional Engineer, State of Indiana,	#PE 12100608
Professional Engineer, State of Nebraska,	#E15131
Professional Engineer, State of Nevada,	#025858
Professional Engineer, State of Oklahoma,	#31839
Professional Engineer, State of Texas,	#132928
Professional Engineer, State of Utah,	#305145-2202
Professional Engineer, State of Washington	#21020368
Professional Engineer, State of Wyoming,	#PE 17849

Contact Information

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51 West Center Street, Suite #317
Orem, UT 84057

Education

University of Utah
Salt Lake City, Utah
Ph.D. in Civil and Environmental Engineering

University of Utah
Salt Lake City, Utah
M.S. in Civil and Environmental Engineering

Brigham Young University
Provo, Utah
B.S. in Civil and Environmental Engineering

Work Experience

Focus Forensics, LLC
Managing Engineer: *2014-Present*

Armstrong Forensic Engineers
Senior Consultant: *2010-2014*

Collision Safety Engineering, LLC
Engineer: *2005-2010*

University of Utah
Research Assistant: *2009-2013*

Utah Valley University
Police Officer: *2006-2010 & 2013-2015*
Adjunct Professor: *2009-2010 & 2013*

Utah Department of Public Safety
State Trooper: *2001-2006*

Utah State POST Academy
Instructor: *2002-2004*

Roosevelt City Corporation
Police Officer: *2002-2004*

Salt Lake County Public Works
Technician: *1999-2000*

Professional Affiliations

Society of Automotive Engineers (SAE), Member

American Society of Photogrammetry and Remote Sensing (ASPRS), Member

Transportation Research Board Standing Committee on Traffic Law Enforcement (ANB40), Corresponding Committee Member

Transportation Research Board Standing Committee on Transportation Safety Management (ANB10), Friend of the Committee

Transportation Research Board Standing Committee on Work Zone Traffic Control (ANB55), Friend of the Committee

Professional Certification

Accredited Accident Reconstructionist
Accreditation Commission for Traffic Accident Reconstruction (ACTAR), #3047

Certified Traffic Control Supervisor
American Traffic Safety Services Association (ATSSA), #360701

Work Zone Traffic Control Supervisor
Florida Department of Transportation

Motorcycle Operator's License
Utah Driver's License Division, DPS

Professional Development

American Traffic Safety Services Association

- Advanced Work Zone Traffic Control Supervisor Certification, 2013
- Motorcycle Safety: Roadway Hazards and How to Address Them, 2014
- Advanced Work Zone Traffic Control Supervisor Certification, 2017

Axiom Forensic

- Motorcycle Collision Reconstruction, 2018

Bendix

- Comprehensive Air Brake System Training Program in the Operation and Maintenance of Heavy Duty Air Brakes and Components, 2014

Certify Me

- OSHA Standard 29 CRF 1910, 1926 Certification (Class 7 Powered Industrial Trucks), 2019

Collision Safety Institute / ARC

- Annual Crash Conference and Full Scale Crash Testing, 2017
  - Full Scale Crash Testing
  - Photogrammetry of Camera Images
  - Gap Acceptance
  - NTSB Crash Investigations
  - Reconstruction of Low-Speed In-line Collision
  - Pedestrian and Nighttime Recognition
  - UAS Scene Mapping
  - Braking Performance During Emergency Application
  - Overheating of Heavy Duty Truck Brakes
  - Pedestrian Walking Speeds
  - Pedestrian Crash Reconstruction Methodologies

Energi

- Risk Management Summit, 2017

EKPass

- Web Based Backhoe Operator Training and Certification, 2013

EOS Systems Inc.

- PhotoModeler 4 Collision Investigation Course and Software Operation Certification, 2002
- PhotoModeler 6 Collision Investigation Course and Software Operation Certification, 2007

Professional Development Continued

European Association for Accident Research and Analysis

- 27th Annual Congress, 2018
  - Traffic Collisions Involving Motorcycles
  - Insurance Fraud
  - Big Data
  - Open Forum

FARO Technologies Inc.

- FARO Laser Scanner LS Training and Operation Certification, 2009
- FARO Laser Scanner Focus Training and Operation Certification, 2015

InnovMETRIC Software Inc.

- PolyWorks V11 Training and Operation Certification, 2009

Institute of Electrical and Electronics Engineers (IEEE)

- 15th International Conference on Intelligent Transportation Systems (ITSC), 2012

McInnis Engineering Associates

- PC-Crash 7.3 Software Training and Operation Certification, 2007

National Academy of Forensic Engineers (NAFE)

- General Topics in Forensic Engineering, 2010
- Advanced Topics in Accident Reconstruction, 2010

National Academy of Science and Norwood Police Department

- Human Factors of Witness Reliability, 2015

North American Training Group

- Staged Automobile Accidents, 2015

Northwestern University Center for Public Safety

- Traffic Accident Reconstruction I, 2002
- Traffic Accident Reconstruction 2, 2003
- Heavy Vehicle Crash Reconstruction, 2004
- Advanced Crash Reconstruction Utilizing Human Factors, 2014

OSHA Campus

- OSHA Compliant Backhoe-Loader Operations Training and Certification, 2013

Robert Bosch Corporation

- Crash Sensing Algorithms: Electronic Sensing for Air Bag Deployment in Front, Side and Rollover Automobile Crashes, 2006
- Driver Assistance and Collision Avoidance, 2007

Society of Automotive Engineering (SAE)

- Applying Automotive EDR Data to Traffic Crash Reconstruction, 2013
- World Congress and Exhibition, 2013
- Vehicle Crash Reconstruction: Principles and Technology, 2019
- Accident Reconstruction, The Autonomous Vehicle and ADAS, 2020
- Fundamentals of Vehicle Dynamics, 2021

Transportation Research Board (TRB)

- Conference on Innovations in Travel Modeling (ITM), 2012
- TRB 96th Annual Meeting , 2017
  - Traffic Law Enforcement Committee Meeting
  - Emergency Evacuations
  - Emergency Medical Services Safety Subcommittee Meeting
  - Motorcycle and Rider Behavior
  - Latest Research in Metropolitan Policy, Planning, and Processes
  - Pavement Condition Evaluation: State of the Art
  - Traffic Flow Theory and Characteristics
  - Signs, Markings, Signals, Visibility, and Related Technologies
  - Work Zone Safety Evaluations and Operations Management Strategies
  - Pavement Preservation and Maintenance
  - Law Enforcement and Traffic Safety
  - Pedestrian Safety Issues
  - Transportation Safety Management Committee Meeting

- TRB 97th Annual Meeting , 2018
  - Righting the Wrong Way Driver: Generating Mitigation Measures for Wrong-Way Freeway Collisions
  - Traffic Law Enforcement Committee Meeting
  - Traffic Law Enforcement Research
  - Traffic Control Devices
  - Research on Critical Knowledge Gaps: Teenage Driving Risk
  - Innovations in Work Zone Traffic Control
  - Countermeasures for Wrong-Way Driving
  - NTSB Accident Investigations
  - Transportation Safety Management Committee Meeting
  - Traffic Flow Theory and Characteristics

Transportation Research Board (TRB) Continued

- TRB 98th Annual Meeting , 2019
  - Traffic Law Enforcement Committee Meeting
  - Traffic Safety Management Committee Meeting
  - Traffic Control Devices Challenges – Hybrid Session
  - Modeling Work Zone Impacts
  - Pavement Performance Measures and Maintenance
  - Pavement Surface Properties and Vehicle Interaction
  - SHRP 2 Naturalistic Driving Study
  - Insights on Congestion Pricing and Managed Lanes
  - Human Factors Potpourri: Driver Health, Behavior, Technology and the Environment
  - Innovations in Work Zones
  - TLE: Innovative Tools, Policy, and Countermeasures to Increase Roads and LE Safety
  - Emergency Response and Data Limitations
  - New Mobility Options
  - The Impact of Advanced Driver Asist Systems on Occupant Safety
  - Vehicle Automation: Driver and Pedestrian Behaviors
  - Roadway Lighting, Visibility, and Safety
  - Visibility Issues
  - Highway-Rail Grade Crossing Research
  - Construction, Maintenance, and Operations: Safety Analysis and Planning
  - Recent Advances in Roadside Maintenance and Operations
  - Understanding Drivers in Naturalistic Environments
  - Alcohol, Other Drugs, and Transportation
  - Vehicle Dynamics and Traffic Flow Modeling

- TRB 99th Annual Meeting , 2020
  - Traffic Law Enforcement Committee Meeting
  - Improved Safety Through Traffic Enforcement Design and Implementation
  - Cannabis: Understanding the Legalities, Attitudes, Economics, and Scientific Challenges
  - Design and Analysis of Pavement Friction and Texture
  - General and Emerging Pavement Design Practices
  - Advances in Roadside Maintenance Operations
  - Technology Assisting to Make Better Work Zones
  - Modeling Work Zone Attributes
  - Driver Behavior in Work Zones
  - NTSB Accident Investigations
  - Transportation Safety Management
  - Safety Data, Analysis, and Evaluation: GPS and Naturalistic Driving, Toll
  - Truck and Bus Safety Research
  - Intersection Safety in Focus
  - Focus on Pedestrian and Bicycle Safety
  - Vulnerable Road Users: Simulator and Virtual Reality Analyses
  - Pedestrian Hybrid Beacons and Enhanced Crosswalk Signage
  - Analyzing and Planning the Pedestrian Environment
  - Current Research in User Information Systems

- TRB 99th Annual Meeting , 2020 Continued
  - New Trends in Research on Human Factors and Vehicle Factors
  - New Research in Human Factors and Vehicle Automation
  - Assessing Driver Visibility Through Human Factors Investigations
  - Issues Affecting Public Acceptance of Automated Vehicles
  - Toward Adoption of Vehicle-Highway Automation

- TRB 100th Annual Meeting , 2021
  - Traffic Law Enforcement Committee Meeting

Utah County Sheriff's Department

- Human Factors of Witness Reliability: Kinesics, 2015

Utah Department of Public Safety UHP

- Advanced Accident Reconstruction, 2002
- Accident Scene Investigation and Diagramming, 2003
- Crash Data Retrieval (CDR) System Operator, 2003
- Vehicle Safety Inspections, 2003
- Field Training Officer, 2003
- MAIT Quarterly Accident Reconstruction Training, 2002-2005
- Drug Recognition Expert Certification (DRE), 2005

Utah Department of Transportation

- Utah Traffic Management Systems, 2015

Utah State POST Academy

- Accident Investigation, 2001
- DUI Detection and Enforcement, 2001
- Utah Police Corps, 2001
- Major Crash Investigations, 2015

U.S. DOT – FHWA – National Highway Institute

- National Traffic Incident Management Responder Training and Certification, 2015

U.S. DOT - Transportation Safety Institute

- U.S. DOT Motor Carrier Safety Inspector Qualification (396.19), 2012

Vector Solutions

- Ethics for the Practicing Engineer – Managing Risks Imposed on the Public, 2018

World Reconstruction Exposition (WREX)

- Crash Conference and Full Scale Crash Testing, 2016

Seminar and Course Presentations

"Accident Reconstruction, Transportation Safety, & Criminal Defense" National College for DUI Defense, 2021

"Special Forensic Application of Civil Engineering", Arizona State University, 2020

"Red Flag Indicators of Fraud", Florida Insurance Fraud Education Committee Conference (FIFEC), 2019

"Automotive Fraud Analysis: Going Beyond the Physical Evidence", 27th Annual Congress of the European Association for Accident Research and Analysis, 2018

"Big Data Analysis – Combining GPS with Traffic Signal Data Logger Records", 27th Annual Congress of the European Association for Accident Research and Analysis, 2018

"Accident Reconstruction: A Panel Discussion", Energi Risk Management Summit, 2017

"Maintenance of Traffic and Roadway Design Analysis", World Reconstruction Exposition, 2016

"How to Document and Preserve a Work Zone Related Crash" W.W. Clyde & Co. Annual Supervisors Training, 2015

"Accident Scene Preservation" W.W. Clyde & Co., Interchange, 2015

"Truth or Dare: Is the Insured Telling the Truth or are They Daring to Make a False Claim?" Utah Claims Adjusters Association, 2014

"10 Important Event Data Recorder Questions Answered" Trystan Smith & Associates – Corporate Law Department State Farm Mutual Automobile Insurance Company, 2014

"Truth or Dare: Is the Insured Telling the Truth or are They Daring to Make a False Claim?" Geico Auto Insurance Annual Fraud Awareness Day, 2014

"A Forensic Engineer's Perspective on Work Zone Risk" W.W. Clyde & Co. Interchange, 2014

"Automotive Accident Reconstruction: An Introduction" Young Lawyers Section of Idaho State Bar, 2013
"Light Bulb Filament Distortion Thresholds by Voltage and Delta-V" Society of Automotive Engineers 2013 World Congress & Exhibition, 2013

"Introduction to Forensic Nuclear Engineering" University of Utah, 2013

"3D Modeling with Laser Scanner Point Cloud Data" Armstrong Forensic Engineers, 2012

"Simplified, Data-Driven, Errorable Car-Following Model to Predict the Safety Effects of Distracted Driving" 15th International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC), 2012

"Crash Event Modeling Approach for Dynamic Traffic Assignment" 4th Transportation Research Board Conference on Innovations in Travel Modeling (ITM), 2012

"Special Forensic Applications of Civil Engineering" University of Utah, 2011

"Handling Large Loss Claims with Limited Information" PLRB Large Loss Conference, 2011

"Spatial – Information Approach to Analyzing and Planning Distributed Transportation Security Systems," *Top 10 Finalist in National Security Innovation Competition,* 2011

"PhotoModeler for Inverse Projects and Scaled Diagramming" Armstrong Forensic Engineers, 2011

"Safety and Accident Investigation" Michels Corporation, 2011

"Information – Theoretic Sensor Location Model for Detecting Origin-Destination Spatial Patterns of Special Nuclear Material Smuggling" *1st National Conference for Advancing Tools and Solutions for Nuclear Material Detection*, 2010

"Transportation Safety Concerns in the Urban Transportation Planning Process" University of Utah, 2009

"Case Studies in Accident Reconstruction and Photogrammetry" Collision Safety Engineering, 2005

"Criminal Liability and Accident Reconstructions" Brigham Young University, 2005

"Accident Reconstruction and Perception Reaction Time" Utah Department of Public Safety, MAIT Team Quarterly Training, 2004

"Accident Investigation" Utah Police Officers Standards and Training Academy, Uintah Basin Satellite Academy, 2002-2003

"Accident Reconstruction" U.S. Department of the Interior, Bureau of Indian Affairs Office of Law Enforcement Services, 2003

"Pitfalls in PhotoModeler Photogrammetry When Accident Scene Diagramming" Utah Department of Public Safety, Utah Highway Patrol Section 5, 2003

Technical Reports and Publications

Rush, T., Przybyla, J., Melcher, D., "A New Source of Collision Evidence: Traffic Signal Data Loggers," American Bar Association, Committee News Commercial Transportation Litigation, 2018

Melcher, D., Przybyla, J., Palframan, K., Rush, T., "Big Data Analysis – Combining GPS with Traffic Signal Data Logger Records," Proceedings of the 27th Annual Congress of the European Association for Accident Research and Analysis (EVU), 2018

Przybyla, J., Melcher, D., "Automotive Fraud Analysis: Going Beyond the Physical Evidence," Proceedings of the 27th Annual Congress of the European Association for Accident Research and Analysis (EVU), 2018

Przybyla, J., Rush, T., Palframan, K., Melcher, D., "Introduction to Traffic Signal Data Loggers and their Application to Accident Reconstruction," SAE Technical Paper 2018-01-0527, 2018

Montalbano, P., Melcher, D., Keller, R., Rush, T., Przybyla, J., "Testing Methodology to Evaluate Reliability of a "Frozen" Speedometer Reading in Motorcycle/ Scooter Impacts with Pre-Impact Braking." SAE Technical Paper 2016-01-1482, 2016

Melcher, D., Rush, T., Przybyla, J., Keller, R., Montalbano, P., "Photogrammetric Reconstruction Methodology and Engineering Validation for Video-Captured Pedestrian Collisions", Proceedings of the 24th Annual Congress of the European Association for Accident Research and Analysis (EVU), 2015

Przybyla J., Jupe J., Rush T., Keller R., "Glass Debris Field Longevity for Rollover Accident Reconstruction." SAE Technical Paper 2015–01–1427, 2015

Przybyla J., Taylor J., Jupe J., Zhou X., "Estimating Risk Effects of Driving Distraction: A Dynamic Errorable Car-Following Model." Transportation Research Part C, 10.1016/j.trc.2014.07.013, 2014

Rush, T., Przybyla, J., Melcher, D., Sax, C., "Video Analysis and Analytical Modeling of Actual Vehicle/ Pedestrian Collisions." SAE Technical Paper 2014-01-0483, 2014

Przybyla, J., "Enhancing Transportation Safety and Security: A Spatial Multilevel Approach" Ph.D. Dissertation, University of Utah, 2013

Przybyla J., Zhou X., "Learning Transportation Simulation and Modeling: A Case Study-Based Approach Using Open-Source Tools", "Lesson 5: Navigating From Point A to Point B", and "Lesson 8: Big Data Applications" Online Learning Document, www.learning-transportation.org, 2013

Przybyla J., Rush T., Melcher D., Robinson S., "Light Bulb Filament Distortion Thresholds by Voltage and Delta-V." SAE Technical Paper 2013-01-0752, 2013

Przybyla J., Taylor J., Jupe J., Zhou X., "Simplified, Data-Driving, Errorable Car-Following Model to Predict the Safety Effects of Distracted Driving." 15th International IEEE Conference on Intelligent Transportation Systems Conference (IEEE ITSC), 2012

Przybyla J., Taylor J., Zhou X., Porter R.J., "Crash Event Modeling Approach for Dynamic Traffic Assignment." 4th Transportation Research Board Conference on Innovations in Travel Modeling (ITM), 2012

Lang M., Przybyla J., Zhou X., "Loading Containers on Double-Stack Cars: Multi-Objective Optimization Models and Solution Algorithms for Improved Safety and Reduced Maintenance Cost." E-Print Network Record 571, 2011

Przybyla J., Taylor J., Porter R.J., Xhou X., "Modeling Crashes for Evaluating Network-Level Impact of Safety Enhancement Strategies: A Fast Dynamic Traffic Assignment Approach." UDOT Annual Conference, 2011

Melcher D., Keller R., Przybyla J., Rush T., "Applications of GPS Data in Collision Reconstruction." *Collision Magazine*, 2011

Melcher D., Keller R., Przybyla J., Rush T., "Applications of GPS Data in Collision Reconstruction." *Proceedings of the 10th ITAI International Conference on Collision Investigation, Interpretation and Reconstruction*, 2011

Zhou X., Przybyla J., "Crash Event Modeling Approach for Dynamic Traffic Assignment." *White Paper Submitted to FHWA Project DTFH61-10-R-000013,* 2011

Przybyla J., Porter R.J., Nevers B., Zhou, X., "Evaluating Roadway Safety Improvements in a Traffic Assignment Framework." *Transportation Research Board, 3rd International Conference Roadway Safety and Simulation,* 2011

Przybyla J., Taylor J., Zhou X., "What You Don't Know Can Hurt You: The Application of Security Data Visualization Techniques for the Placement of Nuclear Material Smuggling Interdiction Sensors." 2nd *National Conference for Advancing Tools and Solutions for Nuclear Material Detection*, 2011

Przybyla J., Taylor J., "Spatial-Information Approach to Analyzing and Planning Distributed Transportation Security Systems." *National Security Innovation Competition White Paper*, 2011

Taylor J., Przybyla J., Zhou X., "Quantifying Information Gains of Networked Sensor System for Detecting Nuclear Material Smuggling Flow: An Ensemble Filtering Approach." *INFORMS Austin*, 2010

Taylor J., Przybyla J., Zhou X., "Spatial Information Theoretical Approach to Locating Sensors in Transportation Security Applications." *INFORMS Austin*, 2010

Technical Reports and Publications Continued

Przybyla J., Taylor J., Zhou X., "Locating Sensors for Detecting Source-to-Target Patterns of Special Nuclear Material Smuggling: A Spatial Information Theoretic Approach." *Sensors* 2010, 10, 8070-8091

Przybyla J., Zhou X., "Information – Theoretic Sensor Location Model for Detecting Origin-Destination Spatial Patterns of Special Nuclear Material Smuggling." *1st National Conference for Advancing Tools and Solutions for Nuclear Material Detection*, 2010

Przybyla J., Zhou X., "Cell Phone Use While Driving: A Literature Review and Recommendations." White Paper, 2008

Journal Reviewer

IEEE Transactions on Intelligent Transportation Systems
Journal of Traffic and Transportation Engineering
Society of Automotive Engineers
Traffic Injury Prevention
Transportation Research Record
Transportation Research Board, Roadway Safety and Simulation
Transportation Research Board, Traffic Law Enforcement
Urban Rail Transit

Awards and Honors

- Best Paper Award, 15th International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC), 2012
- Top 10 Finalist, National Security Innovation Competition, 2011
- 2nd Place – Best Presentation, 1st National Conference for Advancing Tools and Solutions for Nuclear Materials Detection, 2010
- Trooper of the Year, Utah County Utah Highway Patrol, 2005
- Commissioner Commendation, Utah Department of Public Safety, 2005
- Medal of Excellence, Utah Department of Public Safety, 2005
- Member of Utah County Officer Involved Shooting Investigation Unit, 2004
- Unit Citation, Utah Department of Public Safety, 2003
- Member of Utah Department of Public Safety M.A.I.T. Team, 2002
- Director's List, Utah Department of Public Safety, 2001
- Eagle Scout, Boy Scouts of America, 1992