



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 Illinois, #62-064663  
Professional Engineer, State of Nebraska, #E15131  
Professional Engineer, State of Utah, #305145-2202

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### Salt Lake Office

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

## 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

Certified State Peace Officer  
Utah Peace Officer Standards and Training

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

### Bendix

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

## 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

## 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)

- 15<sup>th</sup> 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



## Professional Development Continued

### 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

### SAE International Training

- Applying Automotive EDR Data to Traffic Crash Reconstruction, 2013
- World Congress and Exhibition, 2013

### Transportation Research Board (TRB)

- Conference on Innovations in Travel Modeling (ITM), 2012
- TRB 96<sup>th</sup> Annual Meeting
  - 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

### 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

### World Reconstruction Exposition

- Crash Conference and Full Scale Crash Testing, 2016

### Seminar and Course Presentations

“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



## Seminar and Course Presentations Continued

- “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” 15<sup>th</sup> International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC), 2012
- “Crash Event Modeling Approach for Dynamic Traffic Assignment” 4<sup>th</sup> 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” *1<sup>st</sup> 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

- 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](http://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.” 15<sup>th</sup> 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.” 4<sup>th</sup> 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

## Technical Reports and Publications Continued

Przybyla J., Taylor J., Porter R.J., Zhou 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 10<sup>th</sup> 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, 3<sup>rd</sup> 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." *2<sup>nd</sup> 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

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." *1<sup>st</sup> 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

Transportation Research Board, Roadway Safety and Simulation  
Society of Automotive Engineers  
Traffic Injury Prevention  
Urban Rail Transit  
Journal of Traffic and Transportation Engineering  
Transportation Research Record

## Awards and Honors

- Best Paper Award, 15<sup>th</sup> International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC), 2012
- Top 10 Finalist, National Security Innovation Competition, 2011
- 2<sup>nd</sup> Place – Best Presentation, 1<sup>st</sup> 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