



**DJS**  
a s s o c i a t e s

Forensic Consulting, Technology & Animations

**John R. Yannaccone, P.E.**

**EDUCATION:**

Drexel University, Philadelphia, PA: BS Mechanical Engineering, 1989

**LICENSES AND CERTIFICATIONS:**

Licensed Professional Engineer in AL, DE, NJ, PA  
Certified Child Passenger Safety Technician – 1999 to present  
Certified Child Passenger Safety Instructor – 2000 to present  
Crash Data Retrieval Data Analyst Certification  
Crash Data Retrieval Technician Certification  
CarFit Technician and Event Coordinator - 2016  
Certified Safety Assessment Program Evaluator - 2016  
ProBoard Certification: Fire Fighter I, Fire Fighter II, Hazardous Materials Operations  
Pennsylvania Department of Health Certification as Basic Vehicle Rescue Technician

**PROFESSIONAL MEMBERSHIPS:**

American Society of Mechanical Engineers (ASME)  
SAE International  
Association for the Advancement of Automotive Medicine (AAAM)  
National Society of Professional Engineers (NSPE)  
National Academy of Forensic Engineers (NAFE) – Senior Member  
Pi Tau Sigma, Honorary Mechanical Engineering Fraternity  
Order of the Engineer

**CONTINUING EDUCATION:**

- Post-Disaster Safety-Assessment Program (SAP) Evaluator Training and Certification  
Pennsylvania Society of Professional Engineers, November 2016.
- Online Bosch Full Crash Data Retrieval (CDR) Technician Training, University of North  
Florida - Institute of Police Technology and Management (IPTM), June 2016.
- Future of Side Impact Protection for Children: Injury Analysis, Testing and Technical Advances, Center  
for Child Injury Prevention Studies, The Children's Hospital of Philadelphia, March 17, 2010.
- NHTSA Region 2 Child Passenger Safety Technical Conference, September 9 – 11, 2009.
- Crash Data Retrieval Data Analyst Course, May 6-9, 2008.
- Crash Data Retrieval Technician Course, May 5, 2008.

- Annual Joint Conference – NYSTARS, NAPARS, NJAAR, NATARI & MdATAI, October 2007.
- The Role of Warnings and Instructions, The University of Wisconsin, College of Engineering, September 2005.
- Zoning Administration, The Pennsylvania Municipal Planning Education Institute, May 2005.
- Playground Safety and Design Workshop, October 2003.
- Wheelchair Securement & Occupant Restraint Training, April 2003.
- Transporting Children with Special Health Care Needs, October 2002.
- Booster Seats for Children: Closing the Gap Between Science and Public Policy, AAAM, April 2001.
- Fundamentals of Sensor Design for Automotive Air Bag Systems, September 1999.
- Standardized Child Passenger Safety Training Program, Patterns for Life, May 1999.
- Automotive Safety TOPTEC, *Focus on the Child*, SAE, October 1998.
- Motor Vehicle Accident Reconstruction, SAE, February-March 1995.
- Professional Engineering Review, Drexel University, May-October 1994.
- Industrial Hydraulics Technology, National Technology Transfer, Inc., October 1993.
- Head and Neck Injury Symposium, SAE, December 1993.
- Computer Aided Engineering Integration, December 1992.
- Injury, Anatomy, Biomechanics and Federal Regulations, SAE, August 1992.
- Algor Finite Element Analysis, Week 1, Algor Interactive Systems, Inc., December 1991.
- Risk Management and System Safety Practice, Sverdrup Technology, Inc., November 1990.
- Pennsylvania Environmental Regulations, May 1990.
- Numerous other seminars and webinars on various topics.
- Numerous fire and rescue related topics.

## **PROFESSIONAL EXPERIENCE:**

### **February 2017 DJS Associates, Inc., Abington, PA, Senior Mechanical Engineer**

Responsibilities include the investigation and analysis of mechanical failures including industrial equipment and machinery, consumer products, ladders and scaffolds, machine guards, household appliances, automatic door relays and switches, wheelchair lifts and occupant restraints and patient lifts. Analysis of mechanical failures within vehicles including child safety seats, airbags, seat backs, seat belts and occupant protection and restraint systems. Analysis and testing of occupant restraint systems and equipment for emergency vehicles. Use of High-Definition Scanning, Crash Data Recorder and other State-of-the-Art technology for investigation, documentation and analysis. Expert testimony rendered on behalf of plaintiff and defense.

### **2005 – 2017 Forensic Safety Group, Willow Grove, PA, Senior Engineer**

Responsibilities included the investigation and analysis of mechanically related failures and incidents with a focus on failure analysis and general system safety. Specific expertise in the evaluation of occupant protection in various types of vehicles. Consultation in the areas of occupant protection and restraint for emergency vehicles with the National Institute of Occupational Safety and Health (NIOSH). Consultation with several restraint system manufacturers regarding issues related to the performance of their systems. Continuous work in child passenger safety through participation in child restraint checkpoints, as well as teaching child passenger safety classes. Additional consultation with NIOSH on investigations as part of their Firefighter Fatality Investigation Program. Expert testimony rendered on behalf of plaintiff and defense.

### **1996 – 2005 ARCCA, Incorporated, Penns Park, PA, Senior Engineer**

Extensive experience in testing automotive and vehicle components. Conducted numerous full scale vehicle crash and rollover tests. Researched, tested and evaluated automotive seating, airbags and restraint systems. Conducted numerous seat back, restraint and rollover tests. Developed systems to sense and prevent tip-over of industrial equipment. Conducted sled testing for child restraints in collaboration with Children's Hospital of Philadelphia. Investigated and recommended improvements for restraint systems for occupants in patient compartment of ambulances with the National Institute of Occupational Safety and Health (NIOSH). Participated in the design and development of the Common Crashworthy Occupant Protection System (CCOPS) for Army wheeled vehicles. Consultation with several manufacturers to evaluate both the design and performance of their products. Expert testimony rendered on behalf of plaintiff and defense.

**1987 – 1996 Naval Air Warfare Center, Warminster, PA, Mechanical Engineer**

Responsible for various test facility operations including dynamic and sustained acceleration tests focused on human protection, human tolerance and equipment performance. Conducted numerous accelerator tests on restrains systems, airbags, seating systems and several other components. Automotive testing included evaluation of new design for seat bottom cushions, dynamic seatback strength and occupant kinematics in various crash orientations. Operated US Navy's Fuel Fire Test Facility, which was used for full-scale fuel fire testing to assess the thermal protection capabilities of garments for the Navy. Participated in tests on the Navy's man-rated ejection tower, which simulated the catapult phase of ejection from an aircraft. Assisted in the design, testing and evaluation of fuel cells for Naval aircrafts. Analyzed test results to determine flight worthiness and potential for problems with pre-production fuel systems. Performed flame survivability testing of wire and fiber-optic cables in an effort to develop a materials specification.

**1985 – 1986 US Department of Agriculture, Wyndmoor, PA, Engineering Science Laboratory**

Assisted in the design, fabrication, modification, and maintenance of a wide variety of food processing equipment including the use of machine shop equipment to fabricate machinery to support a food processing pilot plant.

**PRESENTATIONS:**

- The Seat Belt Defense, Office of the Attorney General, State of New Jersey, September 2016.
- Event Data Recorders, Office of the Attorney General, State of New Jersey, July 2016.
- Pretensioners and Child Passenger Safety, NHTSA Region 2 Child Passenger Safety Technical Conference, September 9 – 11, 2009.
- Comparison of Dynamic and Static Web Loop Deployment Forces, SAE International 2006 World Congress, Detroit, Michigan, April, 2006.
- Child Restraints: Determining Proper Use, 2005 NATARI Joint Conference, Wilmington, Delaware October 5, 2005.
- Occupant Protection from Cargo in Armored Vehicles, SAE 2005 World Congress, Detroit, Michigan, April, 2005.
- Development of a Buckle Release Test Procedure, SAE 2004 World Congress, Detroit, Michigan, March, 2004.
- Hybrid III 3-Year-Old ATD Crash Test Research, presented at 27<sup>th</sup> Annual International Workshop on Human Subjects for Biomechanics Research, San Diego, CA, October 1999.

**PUBLICATIONS:**

Green, J. D. , Yannaccone, J. R. , Current, R. S. , Sicher, L. A. , Moore, P. H. and Whitman, G. R., "Assessing the performance of various restraints on ambulance patient compartment workers during crash events", International Journal of Crashworthiness, 15: 5, 517 — 541, November 2010.

Yannaccone, J., "How Do Airbags Work?" Fitting Station News, 2010 Edition – PA Traffic Injury Prevention Project, April, 2010.

Current, R., Moore, P., Green, J., Yannaccone, J., Whitman, G., Sicher, L., "Crash Testing of Ambulance Chassis Cab Vehicles", SAE International 2007-01-4267, October, 2007. Selected for inclusion in SAE Transactions 2007.

Yannaccone, J., Whitman, G., Sicher, L., D'Aulerio, L., "Analysis of Nij in Simulated Real-World Crashes with a 3-year-old Hybrid-III", International Journal of Crashworthiness, 2006 Vol. 11 No. 5.

Sicher, L.A., Whitman, G.R., Yannaccone, J.R., "Validation of Loading Marks on Child Safety Seats through Testing", SAE International 2006 World Congress, Detroit, Michigan, SAE 2006-01-0906, April, 2006.

Whitman, G.R., Sicher, L.A., Yannaccone, J.R., Hooker, R., "Dolly Rollover Testing of Child Safety Seats", SAE International 2006 World Congress, Detroit, Michigan, SAE 2006-01-0914, April, 2006.

Yannaccone, J.R., Sicher, L.A., "Comparison of Dynamic and Static Web Loop Deployment Forces", SAE International 2006 World Congress, Detroit, Michigan, SAE 2006-01-1682, April, 2006.

Yannaccone, J. R., Whitman, G. R., Sicher, L., "Pretensioners and Injury Risk", SAFE Association's Forty-Third Annual Symposium, Salt Lake City, Utah, October 24-26, 2005.

Green, J., Moore, P., Current, R., Yannaccone, J., Whitman, G., Day, D., Proudfoot, S., Bobick, T., Romano, N., "Reducing Vehicle Crash-Related EMS Worker Injuries Through Improvements in Restraint Systems", XVIIth World Congress on Safety and Health at Work, Orlando, Florida, September 20, 2005.

Yannaccone, J. R., Cantor, A.E., Eisentraut, D.K., Denham, W. Sicher, L.A., "Occupant Protection from Cargo in Armored Vehicles", SAE 2005 World Congress, Detroit, Michigan, SAE 2005-01-0879, April, 2005. Selected for inclusion in SAE Transactions 2005.

Yannaccone, J. R., Sicher, L.A., Cantor, A. E., "Development of a Buckle Release Test Procedure", SAE 2004 World Congress, Detroit, Michigan, SAE 2004-01-0472, March, 2004.

Whitman, G. R., Yannaccone, J. R., Burton, J., Lewis, P., and Shanahan, D.F., "Occupant Kinematics with Child Safety Seats Tested Under Real World Conditions", Association for the Advancement of Automotive Medicine, 47th Annual Scientific Conference, September 22-24, 2003.

Whitman, G. R., Sicher, L. A., D'Aulerio, L. A., Yannaccone, J. R., "Lateral Crash Restraint for Children", SAFE Association's 40th Annual Symposium, September 2002.

Sicher, L. A., Whitman, G. R., Yannaccone, J. R., D'Aulerio, L. A., Cantor, A., Shanahan, D., and Reed, J., "Lateral Restraint: Comparison of Lap/Shoulder Belt vs. Lap/Shoulder Plus Supplemental Shoulder Belt Restraint Systems", SAFE Association's 40th Annual Symposium, September 2002.

Whitman, G. R., D'Aulerio, L. A., Sicher, L. A., Yannaccone, J. R., and Cantor, A., "Children in Rollover Crashes", Biomedical Engineering: Recent Developments. J Vossoughi (Editor), ISBN: 1-930636-01-6 © 2002 Medical and Engineering Publishers, Inc.

Yannaccone, John, Performance Analysis of Martin-Baker Aircraft Crash Attenuating Troop Seat System, Proprietary Report, February 2002.

Sicher, L. A., Whitman, G. R., Yannaccone, J. R., D'Aulerio, L. A., Cantor, A., Shanahan, D., and Reed, J., "Lateral Restraint: Comparison of Lap/Shoulder Belt vs. Lap/Shoulder Plus Supplemental Shoulder Belt Restraint Systems", SAFE Association's 39<sup>th</sup> Annual Symposium, September 2001.

21<sup>st</sup> Century Truck Program: Occupant Crash Protection, Report to U.S. Army, June 2001.

Levick, Nadine, Li, Guohua and Yannaccone, John, "Development Of A Dynamic Testing Procedure To Assess Crashworthiness Of The Rear Patient Compartment Of Ambulance Vehicles", Paper number 454-O, 17th International Technical Conference on the Enhanced Safety of Vehicles (ESV) Conference, Amsterdam, The Netherlands, June 4 -7, 2001.

Whitman, G.R., Yannaccone, J.R., Bandak, F.A., Sicher, L., D'Aulerio, L., Shanahan, D., Cantor, A., Roberts, D., Moss, S., "A Method for the Assessment of Tethered and Untethered Child Restraint Systems using the Hybrid III Three Year Old Dummy", Injury Biomechanics Research, Twenty-Seventh International Workshop, San Diego, California, October 24, 1999, published June, 2001.

Levick, Nadine, Li, Guohua and Yannaccone, John, "Biomechanics Of The Patient Compartment Of Ambulance Vehicles Under Crash Conditions: Testing Countermeasures To Mitigate Injury", SAE 2004 World Congress, Detroit, Michigan, SAE 2001-01-1173, March 2001. Selected for inclusion in SAE Transactions.

Occupant Crash Protection Handbook for Tactical Ground Vehicles (Light, Medium & Heavy)  
November 15, 2000, Department of the Army.

Sicher, L.A., Yannaccone, J.R., D'Aulerio, L.A., Cantor, A., ARCCA Incorporated; Gedeon, M., Reed, J., U.S. Army Tank-Automotive and Armaments Command, "Occupant Protection During Rollover Events", SAFE Association 38<sup>th</sup> Annual Symposium, Reno, Nevada, October, 2000.

Sicher, L.A., Whitman, G.R., Yannaccone, J.R., D'Aulerio, L.A., and Cantor, A., "Common Occupant Crash Protection for Army Wheeled Trucks", SAE 2000 World Congress, Detroit, Michigan, SAE 2000-01-1395, March, 2000. Selected for inclusion in SAE Transactions.

Joganich, T.G., Markushewski, M. L., Cantor, A., D'Aulerio, L.A. Whitman, G.R., Yannaccone, J.R., and Eisentraut, D.K., ARCCA Incorporated, "Effect of Cognitive Workload on Automatic Restraint System Usage", SAE 2000 World Congress, Detroit, Michigan, SAE 2000-01-0174, March, 2000. Selected for inclusion in SAE Transactions.

Yannaccone, John, Horton 553B Ambulance Box Sled Test Report, performed at the Transportation Research Center, East Liberty, Ohio, January 2000.

Yannaccone, John, High Speed Video Coverage and Analysis Report for F-Shaped Portable Concrete Barrier and Type III Barricade Testing, December 1999.

Pediatric Injury Research Final Report, Hybrid III Crash Test ATD Research, The Children's Hospital of Philadelphia, September 1999.

Yannaccone, John, High Speed Video Coverage and Analysis Report for Type III Barricade Testing, performed at The Crash Safety Research Center, The Pennsylvania Transportation Research Institute, The Pennsylvania State University, November 1999.

Vertical Force Crash Protection for HMMWV Occupants, SBIR Topic No. A97-085, August 1998.

Yannaccone, John, Restoration of NBDL 12-Inch Hyge Horizontal Accelerator Project Report, December 1996.

Yannaccone, John, Ordnance Handling Plan for AST Pretensioning Device (PTD) Full Scale Dynamic Performance Test Program, April 1996.

Yannaccone, John, Requirement for NAWC (AD) Horizontal Accelerator Facility at Patuxent River, Navy White Paper, October 1994.

Yannaccone, John, Analysis of Relocation Options for NAWC (AD) Horizontal Accelerator Facility, Navy White Paper, September 1994.

Yannaccone, John, Ordnance Handling Plan for Inflatable Body and Head Restraint System (IBAHRS), Horizontal Accelerator Test Program, April 1994.

Yannaccone, John, Ordnance Handling Plan for Universal Water Activated Release System (UWARS), Horizontal Accelerator Test Program, June 1993.

Yannaccone, John, Ordnance Handling Plan for Cats Eye Emergency Divestment System (CEEDS) Testing on the Small Centrifuge, January 1993.

Yannaccone, John, Standard Operating Procedure for NADC Fuel Fire Test Facility, Revision 3, August 1991.

Yannaccone, John, Letter Report on Fuel Fire Testing of Enhanced Air Force Flight Suit, August 1991.

Yannaccone, John, Letter Report on Fuel Fire Testing of Chemical Protective Coveralls, July 1991.

Yannaccone, John, Letter Report on Fuel Fire Testing of Full Pressure Suits, May 1991.

#### **AWARDS RECEIVED:**

- Commendation from East Rockhill Township for performance as a rescuer at a nighttime high angle cliff rescue on July 5, 2014
- Central Bucks Chamber of Commerce Burpee Emergency Services Award, 2013
- Center for Disease Control (CDC) Nomination for Charles C. Shepard Award – Prevention and Control, June 2011
- NIOSH 2011 Alice Hamilton Award – Honorable Mention – Engineering and Physical Science, 2011
- NAWC Superior Performance Awards 1990 through 1996
- NAWC Technology Transfer Award for contributions in the area of technology transfer, August 1994
- NAWC Special Act Award for performance of repair on Navy's Dynamic Flight Simulator, March 1992
- US Department of Agriculture, Special Act Award for superior performance as an Engineering Trainee, October 1986

#### **PATENTS:**

- Side Impact Injury Test Apparatus, U.S. Patent Number 5,872,321
- Co-inventor of Seat-Mounted Occupant Crash Protection System, U.S. Patent Number 6,155,601

#### **PROFESSIONAL ACTIVITIES:**

International Journal of Crashworthiness Peer Reviewer

SAE International Peer Reviewer

National Academy of Forensic Engineers (NAFE) Peer Reviewer

Perkasie Fire Company – September 2008 to present, Current Position: Firefighter and Past President

Bucks County Technical Rescue Task Force Member

Perkasie Borough Zoning Board – January 1995 to present, Current Position: Vice Chairperson

#### **INSTRUCTOR ACTIVITIES:**

The Safe Transportation of Children in the Care of Social Service Agencies presented to Delta Community Supports, Glenside, PA, November 2015.

Pretensioners, Web Loops and Load Limiters presented at the Pennsylvania Child Passenger Safety Instructors Meeting, Harrisburg, PA, March 2002.

Standardized Child Passenger Safety Training Program:

- American Academy of Pediatrics, Horsham Fire Company, Horsham, PA, October 2016
- Lehigh Valley Health Network, Cetronia Ambulance Corps, Allentown, PA, September 2016.
- American Academy of Pediatrics, Radnor Fire Company, Wayne, PA, June 2016
- American Academy of Pediatrics, Montgomery Township Fire Department, Montgomeryville, PA, October 2015
- Lehigh Valley Health Network, Cetronia Ambulance Corps, Allentown, PA, October 2015.
- Bucks County Safe Kids, Doylestown Hospital Health and Wellness Center, Doylestown, PA, May 2015.
- American Academy of Pediatrics, Plymouth Community Ambulance, Plymouth Township, PA, October 2014
- American Academy of Pediatrics, St. Christopher's Hospital for Children, Philadelphia, PA, October 2014
- American Academy of Pediatrics, Middletown Fire Company, Media, PA, June 2014
- Safe Kids of Southeastern Pennsylvania, Children's Hospital of Philadelphia, October 2013

- Montgomery County Department of Health, Plymouth Community Ambulance, Plymouth Township, PA, September 2013
- American Academy of Pediatrics, Minquas Fire Company, Downingtown, PA, June 2012
- American Academy of Pediatrics, Norco Fire Company, Pottstown, PA, March 2012
- American Academy of Pediatrics and SafeKids, Pennridge Regional Police Department, Sellersville, PA, February 2012
- American Academy of Pediatrics, Levittown-Fairless Hills Rescue Squad, Levittown, PA, November 2011
- American Academy of Pediatrics, St. Christopher's Hospital for Children, Philadelphia, PA, December 2010
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, July 2010
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, October 2008
- American Academy of Pediatrics, Chester County Highway Safety, Exton, PA, April 2008
- American Academy of Pediatrics, Meissner Chevrolet Megastore, Philadelphia, PA, February 2008
- American Academy of Pediatrics, Pottstown Memorial Medical Center, Pottstown, PA, October-November 2007
- Chester County Highway Safety, Exton, PA, May 2007
- Bryn Athyn Fire Company, Bryn Athyn, PA, October 2006
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, May 2006
- Chester County Highway Safety, Exton, PA, August 2005
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, April 2005
- Delaware County Emergency Services Training Center, Sharon Hill, PA, September 2004
- Chester County Highway Safety, Exton, PA, June 2004
- Graco Children's Products, Exton, PA, February 2004
- Graco Children's Products, Delaware County Emergency Services Training Center, Sharon Hill, PA, November 2003
- National Highway Traffic Safety Administration, Mercy Hospital, Philadelphia, PA, July 2003
- Safe Kids of Southeastern Pennsylvania, Lower Salford Police Department, May 2003
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, March 2003
- Safe Kids of Southeastern Pennsylvania, Children's Hospital of Philadelphia, August 2002
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, July 2002
- American Academy of Pediatrics, Abington Police Department, Abington, PA, December 2001
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, November 2001
- Safe Kids of Southeastern Pennsylvania, Children's Hospital of Philadelphia, August 2001
- Bucks County Highway Safety Program, Bucks County Emergency Services Training Center, Doylestown, July 2001
- Safe Kids of Southeastern Pennsylvania, North Penn Volunteer Medical Services, PA, March 2001
- Bucks County Highway Safety Program, Bucks County Rescue Squad, Bristol, PA, February 2001
- North Central Highway Safety Network, Exeter Township Police Department, Reading, PA, January 2001
- Pennsylvania State Police, Troop H, Hershey, PA, September 2000

Child Passenger Safety Refresher class, April 2005

Crash Protection Systems Testing, presented at the Occupant Crash Protection Training Course at the Naval Air Warfare Center (NAWC), Patuxent River, MD, November 1998