



Jennifer L. Yaek, PhD, PE
President and Principal Engineer

jyaek@impactanalysisinc.com

Dr. Jennifer Yaek, President and Principal Engineer of Impact Analysis, Inc. brings more than 25 years of extensive experience in accident reconstruction, vehicle dynamics, and data analysis to the organization. Her work in accident reconstruction includes all types of accidents including passenger vehicles, light and heavy-duty trucks, motorcycles, bicycles, pedestrians, buses, farm equipment, and industrial equipment. She specializes in the reconstruction of complex accident situations including front, rear, and side high-speed collisions, low-speed collisions, pole/guard rail impacts, and post-collision fuel-fed fires. Dr. Yaek also has extensive expertise in the investigation of vehicle rollover crashes including assessments of vehicle handling response, tire/component failure, rollover dynamics, and rollover stability.

Dr. Yaek received her Master Degree and PhD in Biomedical Engineering with a concentration in Impact Biomechanics and has provided expertise in the areas of human injury tolerance, occupant kinematics, and rigid body dynamics associated with transportation related impacts, sports activities, heavy equipment, farm equipment, falls, and consumer products since 2012. While at the University of Michigan, she was involved with the University of Michigan's Transportation Research Institute's (UMTRI) research in the areas of offset frontal impacts and lower extremity injuries, and her dissertation research involved analysis of child impact response in side impact collisions.

Dr. Yaek has conducted and been involved with numerous physical demonstrations including high and low-speed full-scale crash tests, sled tests, vehicle and ATD (anthropometric test device) component testing, and vehicle handling response demonstrations. She is also highly skilled in the analysis and use of computer programs and simulations as well as photogrammetry in the reconstruction of crashes and rollovers.

Prior to founding Impact Analysis, Inc., Dr. Yaek provided analyses, consultation and expert witness testimony for Exponent (2012-2020) and M.P. Holcomb Engineering (1996 -2012).

ACADEMIC CREDENTIALS & PROFESSIONAL HONORS

Ph.D., Biomedical Engineering, Wayne State University, 2017
M.S., Biomedical Engineering, Wayne State University, 2012
M.S., Mechanical Engineering, University of Michigan, Ann Arbor, 1996
B.S., Mechanical Engineering, Michigan Technological University, magna cum laude, 1994
Pi Tau Sigma
STAPP John Melvin Student Paper Award, 2018 and 2019

LICENSES AND CERTIFICATIONS

Licensed Professional Engineer, Michigan, #6201045041
Licensed Professional Engineer, Alabama, #28240
Licensed Professional Engineer, Mississippi, #19818
Certified Crash Data Retrieval (CDR) Analyst
Certified Crash Data Retrieval (CDR) Technician
Remote Pilot License, #4111699

PRIOR EXPERIENCE

Principal Engineer (2017-2020); Senior Managing Engineer (2012-2017), Exponent, Inc.
Partner and Consultant, M.P. Holcomb Engineering Corporation, 2004-2012
Consultant, M.P. Holcomb Engineering Corporation, 2000-2004
Engineer, M.P. Holcomb Engineering Corporation, 1996-2000
Engineering Intern, M.P. Holcomb Engineering Corporation, 1995-1996
Engineering Intern, Detroit Diesel, 1993

IMPACT ANALYSIS, INC

1477 S State Road ♦ Davison, Michigan 48423 ♦ 810.272.9010 ♦ ImpactAnalysisInc.com

PROFESSIONAL AFFILIATIONS

Society of Automotive Engineers (SAE)

- Accident Investigation and Reconstruction Practices Standards Committee (AIRP)
- Technical Paper Review/Transactions Selection Committee

Association for the Advancement of Automotive Medicine (AAAM)

- Scientific Program Committee - 2017 to present
- Educational Program Subcommittee Chair - 2019 to 2021
- Educational Program Committee - 2022 to Present
- Membership and Credentials Committee - 2001 to 2007
 - Committee Vice Chair - 2004 to 2005
 - Committee Chair - 2005 to 2006
- Nominations and Awards Committee - 2005 to 2006
- Board of Directors - 2006 to 2009

Society of Mechanical Engineers (ASME)

Society of Professional Engineers (NSPE)

Biomedical Engineering Society (BMES)

International Society of Biomechanics (ISB)

PUBLICATIONS

Yaek, JL, Brown T, Goertz, A. Accidental statistical distributions from NASS CDS – an update. Paper Number 2020-01-0518, Society of Automotive Engineers, 2020.

Parenteau C, Stephens G, Yaek J, and Gregory S. The effect of FMVSS 301R on vehicle structure and rear impact. Paper Number 2020-01-1226, Society of Automotive Engineers, 2020.

Yaek JL, Cavanaugh JM, Rouhana SW. Response Ratio Development for Lateral Pendulum Impact with Porcine Thorax and Abdomen Surrogate Equivalents. Stapp Car Crash Journal 2019 Nov; 63:177-194.

Yaek JL, Cavanaugh JM, Rouhana SW. Epidemiology of Injury Patterns for 4 to 10-Year-Olds in Side and Oblique Impacts. DOI: 10.1080/15389588.2018.1540041, Traffic Injury Prevention, 2018.

Yaek JL, Andrecovich CJ, Cavanaugh JM, Rouhana SW. Side impact and comparison of appropriate size and age equivalent porcine surrogates to scaled human side impact response biofidelity corridors. Stapp Car Crash Journal 2018 Nov; 62:359-377.

Yaek JL, Li Y, Lemanski PJ, Begeman PC, Rouhana SW, Cavanaugh JM. Biofidelity assessment of the 6-Year-Old ATDs in lateral impact. DOI: 10.1080/15389588.2015.1101080, Traffic Injury Prevention, 2015.

Yaek JL, Curry BA, Goertz AR. Review and comparison of published rollover test results. Paper Number 2010-01-0057, Society of Automotive Engineers, 2010.

Goertz AR, Yaek JL, Compton CP. Accident statistical distributions from NASS CDS. Paper Number 2010-01-0139, Society of Automotive Engineers, 2010.



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INVITED PRESENTATIONS

Yaek JL, Cavanaugh JM, Rouhana SW. Response Ratio Development for Lateral Pendulum Impact with Porcine Thorax and Abdomen Surrogate Equivalents. Stapp Car Crash Journal 2019 Nov; 63:177-194.

Yaek JL. Accident investigation, accident reconstruction, and the biomechanics of motor vehicle accidents", Guest Lecturer, Wayne State University, BME 8070 – Seminars in Biomedical Engineering, March 13, 2019; March 24, 2021; September 28, 2021.

Yaek JL, Andreovich CJ, Cavanaugh JM, Rouhana SW. Side impact assessment and comparison of appropriate size and age equivalent porcine surrogates to scaled human side impact response biofidelity corridors. Stapp
Yaek JL, Cavanaugh JM, Rouhana SW. Epidemiology of Injury Patterns for 4 to 10-Year-Olds in Side and Oblique Impacts. Association for the Advancement of Automotive Medicine Conference, Nashville, TN, October 8-10, 2018.

Yaek J, Andrewcovich C, Rouhana S, Cavanaugh J. Side impact assessment and comparison of appropriate size and age equivalent porcine surrogates to scaled human side impact response biofidelity corridors. Poster Presentation. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018.

Yaek JL. Biofidelity assessment of the 6 Year Old ATDs in side impact. Ohio State University Injury Biomechanics Symposium, 2014.

Yaek JL, Newberry W. Introduction to accident investigation, accident reconstruction, and the biomechanics of motor vehicle accidents. Wisconsin Defense Counsel Young Lawyers Section Event, 2013.

Yaek JL, Newberry W. Introduction to accident investigation, accident reconstruction, and the biomechanics of motor vehicle accidents - Webinar. Ohio Association of Civil Trial Attorneys, 2013.

Yaek JL, Curry BA, Goertz AR. Review and comparison of published rollover test results. Paper Number 2010-01-0057, Society of Automotive Engineers, 2010.

Goertz AR, Yaek JL, Compton CP. Accident statistical distributions from NASS CDS. Paper Number 2010-01-0139, Society of Automotive Engineers, 2010.

Yaek JL. Using science and accident reconstruction effectively at trial. Women Drive Results in Transportation Law National Program, Tort Trial & Insurance Practice Section - American Bar Association, 2008.

Yaek JL. Basics of accident reconstruction and occupant motion. Michigan Association of Traffic Accident Investigators, Training Conference, 2003.