



Pamela D'Addario

MASc PEng

Principal, Senior Engineer

contact

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expertise

Human Factors

Collision Reconstruction

areas of specialization

Collision reconstruction

Human factors

Nighttime visibility

Pedestrian impacts

Motorcycle and recreation vehicles

Pamela D'Addario is a senior engineer and leads MEA Forensic's Human Factors group. Pamela investigates vehicle collisions: assessing issues such as collision severity, collision sequence, vehicle speed, avoidance potential, nighttime visibility, and driver response times. She analyses physical evidence using engineering principles and incorporates relevant scientific literature to arrive at robust conclusions.

Pamela has a Bachelor's degree in Mechanical Engineering from Ryerson University and a Master's degree in Mechanical and Industrial Engineering (Human Factors) from the University of Toronto. Her graduate work investigated the effects of cognitive distraction on driver perception-response time to various emergency roadway hazards.

As a human factors specialist, Pamela assesses the behavior of individuals to determine how their action, or lack of action, could have contributed to a collision or injury-causing event. This requires an understanding of the environment in which decisions were made. Frequently it is necessary to visit the accident site under similar conditions. For example, for nighttime visibility cases, Pam often measures the available lighting at the accident site, including light falling onto and reflected by objects from the driver's view. From this data, Pam can assess the contrast and visibility of the objects. "I help our clients understand their case from a scientific perspective," she explains.

In addition to her human factors work, Pamela is actively involved in MEA's research relating to crash reconstruction and vehicle behavior. For example, she tested snowmobiles to find that they can accelerate at rates similar to a motorcycle, while their maximum braking rate is about half that of a passenger car. By publishing her research results, Pamela contributes to the scientific literature and advances the state of knowledge in forensic engineering. "At MEA, we place a great deal of focus on education and research," she says.

education

Master of Applied Science, Mechanical and Industrial Engineering (Human Factors), University of Toronto, 2014.

Bachelor of Engineer, Mechanical Engineering (With Honours), Ryerson University, 2008.

professional status

Registered Professional Engineer, Professional Engineers Ontario, since 2012

professional associations

Society of Automotive Engineers (SAE), since 2009

Human Factors and Ergonomics Society (HFES), since 2012

Illuminating Engineering Society, since 2018

Canadian Association of Road Safety Professional (CARSP), since 2018

professional experience

MEA Forensic Engineers & Scientists

Senior Engineer, 2008 to present

Conducts technical investigations of motor vehicle collisions, including determining vehicle speed and avoidance potential, with specialization in cases involving human factors, nighttime visibility, pedestrians, motorcycles, snowmobiles and ATV's.

University of Toronto, Human Factors and Applied Statistics Laboratory

Graduate Researcher, 2011 to 2014

Undertook graduate research work investigating the effects of cognitive distraction on driver perception-response time to emergency roadway hazards using a driving simulator. Responsible for all phases of the project, including commissioning of equipment, design and development of driving scenarios, data acquisition, and statistical analysis.

Honda of Canada Manufacturing, Alliston, ON

May 2006 to August 2007

Completed a 16-month internship position as a member of the Paint department Engineering/Equipment group. As a project leader, was responsible for the design, installation and commissioning of new equipment to the production line.

research activities

Completed over 500 tests assessing the acceleration and braking capabilities of modern snowmobiles. Acceleration tests were performed at $\frac{1}{4}$, $\frac{1}{2}$, and full throttle. Braking tests were performed under locked track conditions as well as rolldown (engine braking) with engine power ON and power OFF.

Participated in crash tests designed to study the effect of vehicle offset on collision damage and to compare crush analysis methods using staged collisions. Five rear into barrier, four front into barrier, and five front into rear collision were staged using similar vehicles.

awards

The Canadian Society for Mechanical Engineering (CMSE) Gold Medal Award, 2006

Ryerson University JR Longstaffe Scholarship, 2006

Ryerson University Faculty Excellence Award, 2006

Ryerson University Faculty Excellence Award, 2005

Ryerson University American Society of Material Scholarship, 2005

Ryerson University Ontario Professional Engineers Foundation Scholarship, 2005

publications

The effect of cognitive distraction on perception-response time to unexpected abrupt and gradually onset roadway hazards

Predicting snowmobile speed from visible locked-track and rolldown marks in groomed/packed snow conditions

EMG provides an earlier glimpse into the effects of cognitive distraction on brake motor response

Driver-related delay in emergency braking response to a laterally-incurring hazard

Acceleration and braking performance of snowmobiles on groomed/packed snow

Front and Rear Car Crush Coefficients for Energy Calculations

lectures & presentations

October 2024 – The Role of Human Factors and Driver Behaviour in Accident Litigation. Will Trial Lawyers Conference, Virtual.

September 2024 – Brake Response Time and the Effects of Parked and Incurring Vehicles on Driver Behavior. Human Factors and Ergonomics Society 68th International Annual Meeting, Pheonix, AZ.

June 2024 – Human Factors, MEA Webinar Series, Virtual.

March 25, 2024 – Human Factors Applications: Forensics. Guest lecture for course EIN 4245 (Human Factors Applications), University of Florida, Virtual.

March 22, 2024 – Biomechanics and Forensic Analysis. Canadian Society of Medical Evaluators (CSME) Clinical Fundamentals Series: The Spine, Toronto, ON.

March 8, 2023 – Collision Reconstruction, MEA Webinar Series, Virtual.

January 2022 – Human Factors in Workplace Vehicular Accident Workshop, Ontario Ministry of Labour, Virtual.

October 29, 2020 – Analysis of Injury and Human Factors in Pedestrian-Car Crashes, MEA Webinar Series, Virtual.

August 2018 – Distracted Driving. CATAIR Annual General Meeting and Conference, Aylmer, ON.

March 2018 – The Human Factor: How Driver Performance Can Affect Liability. Canadian Defense Lawyers Law Clerks Annual Program, Toronto, ON.

June 2017 – Human Factors: Distracted Driving. Crash Course: The Life of a Claim, Toronto, ON.

April 2016 – Predicting Snowmobile Speed from Visible Locked-Track and Rolldown Marks in Groomed/Packed Snow Conditions. SAE World Congress, Detroit, MI.

October 2014 – EMG provides an earlier glimpse into the effects of cognitive distraction on brake motor response. Human Factors and Ergonomics Society 58th Annual Meeting, Chicago, IL.

February 2014 – Human Factors Experts. Guest lecture for insurance program students. McKeil School of Business, Mohawk College, Hamilton, ON.

January 2014 – Driver Perception-Response Time and the Effect of Cognitive Distraction. Invited talk for graduate course MIE 1414

(Human Factors in Transportation) University of Toronto.

April 2011 – Acceleration and Braking Performance of Snowmobiles on Groomed/Packed Snow. SAE World Congress, Detroit, MI.

training and professional development

September 2024 – Human Factors and Ergonomics 68th International Annual Meeting, Phoenix, AZ.

January 2024 – Transportation Research Board (TRB) 103rd Annual Meeting, Washington, DC.

June 27-28, 2023 – CloudCompare Training, ai2-3D Forensics, Eugene Liscio, Online.

June 5-8, 2023 – Using Warnings and Instructions to Increase Safety and Reduce Liability C866, University of Wisconsin-Madison, Virtual.

May 25, 2023 – Crash Data Retrieval Technician Update Course, Kent E. Boots & Associates, MEA.

March 8, 2023 – Study into Lane Change Manoeuvres by Cyclists, ITAI webinar, Virtual.

February 21, 2023 – Recon-3D Online Certificate Course, Virtual.

May 2-4, 2022 – Ontario Good Roads Association: Signs and Lines CSA15, Guelph, ON.

March 2022 – ProMetric Training PMI29 XB Colorimeter, Radiant Vision Systems, Virtual.

March 2022 – Interactive Driver Response Research (I.DRR) User Forum, Virtual.

February 2022 – Photogrammetry: Forensic Applications Using Photodeler, DCM Technical Services, Virtual.

April/May 2021 – Illuminating Engineering Society (IES) Fundamentals of Lighting Course, Online.

March 22–25, 2021 – INPUT-ACE Video Evidence Symposium 2021, Online.

January 2021 – Transportation Research Board (TRB) Annual Meeting, Virtual.

October 2020 – Illuminating Engineering Society (IES) Street & Area Lighting Conference, Virtual.

October 2020 – Human Factors and Ergonomics Society 64th Annual Meeting, Virtual.

May 2019 – ANSI/IES-RP-8-18-Practice for Design and Maintenance of Roadway and Parking Facility Lighting, IES Webinar.

August 2018 – CATAIR Annual General Meeting and Conference, Aylmer, ON.

February 2018 – Interactive Driver Response Research (I.DRR) User Forum, Austin, TX

September 7, 2016 – Recognition: Closing Speed vs. Closing Threshold, Webinar, Crash Safety Solutions LLC.

July 20, 2016 – Path intrusion and reaction time studies, Webinar, Crash Safety Solutions LLC.

June 24, 2016 – Driver, rider and truck driver forward, backing and lateral acceleration, Webinar, Crash Safety Solutions LLC.

April 2016 – SAE World Congress, Detroit, MI.

October 2015 – Human Factors and Ergonomics Society 59th Annual Meeting, Los Angeles, CA.

July 26-30, 2015 – 6th International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV.

July 6, 2015 – Building Code Overview, Ontario Society of Automotive Engineers, Mississauga, ON.

October 27-31, 2014 – Human Factors and Ergonomics Society 58th Annual Meeting, Chicago, IL.

September 2014 – National Association of Professional Accident Reconstruction Specialists (NAPARS), Portland, ME.

July 2014 – PC Crash 10.0 Training Workshop, Toronto, ON.

May 27-28, 2014 – AUTO21 Conference, Niagara Falls, ON.

March 16-20, 2014 – Optics, Lighting, Visibility and Digital Photography for the Forensic Investigator, Laughlin, NV.

March 14-15, 2014 – Southwestern Association of Technical Accident Investigators (SATAI) Spring Conference, Laughlin, NV.

November 2013 – Psychonomic Society Annual Meeting, Toronto, ON.

October 2013 – Human Factors and Ergonomics Society 57th Annual Meeting, San Diego, CA.

May 22-23, 2013 – AUTO21 Conference, Toronto, ON.

April 2013 – PC Crash Expert: Tractors and Trailers Online Workshop.

August 2012 – Third International Symposium on Naturalistic Driving Research, Virginia Tech, Blacksburg, VA.

March 2012 – Advanced Crash Reconstruction Utilizing Human Factors Research, Northwestern University, Evanston, IL.

March 2012 – International Conference on Distracted Driving, Toronto, ON.

April 2011 – SAE World Congress, Detroit, MI.

September – October 2010 – Advanced Motorcycle Maintenance, Humber College, ON.

September 27-29, 2010 – The National Crash Analysis Conference, George Washington University, Ashburn, VA.

February 10, 2010 – Canadian Safety Council Snowmobile Training Course, Canadian Motorcycle Training Services, Horseshoe Resort, ON.

November 16, 2009 – Canadian Safety Council ATV Training Course, Horseshoe Resort, ON.

April 2009 – SAE World Congress, Detroit, MI.

February 2009 – Crash Data Retrieval System Data Analyst Course, Toronto, ON.

February 2009 – Crash Data Retrieval System Technician Certification Course, Toronto, ON.

August 2008 – PC-Crash Expert Animations Workshop, Vancouver, BC.

August 2008 – PC-Crash Essentials Workshop, Vancouver, BC.

August 2003 – Motorcycle Safety Training Course, Canada Safety Council, Barrie, ON.
