



## PRACTICE AREAS

### Collision Reconstruction

- Human Factors:
  - Perception Reaction Time
  - Nighttime Visibility
  - Roadway Design & Signage
- Pole & Barrier Impacts
- Pedestrian & Cyclist Collisions
- Tractor Trailer Collisions
- Snowmobile Collisions
- Winter Maintenance Assessment

### Personal Injury Claims

- Human Factors:
  - Slips, Trips & Falls
  - Staircase & Building Code Assessment
  - Coefficient of Friction Testing
  - Signage & Warnings
  - Ladder Accidents
  - Wheelchair & Segway Falls
- Playground & Fitness Equipment Assessment
- Zip Line & Challenge Course Assessment
- Pool, Waterpark & Waterslide Assessment
- Recreational Facility Assessment

### Product Failure Investigations

- Human Factors:
  - Product Warnings & Labels
  - Failure Analysis
  - Product Testing

## ACADEMIC BACKGROUND

Master's Degree in Biomedical Engineering, University of Toronto, 1998

- Master's level courses in Human Factors, Dynamics, Physiology, Mechanics of Materials

Bachelors Degree in Mechanical Engineering, University of Western Ontario, 1996

- Undergraduate level courses in Physics, Dynamics, Mechanical Design, Biomechanics, Materials, Hemodynamics



## ADDITIONAL COURSES & TRAINING

- ASTM F45 Unmanned Vehicle Standards Committee Meeting, July 2015
- ASTM F15 Toy Safety Committee Meetings, Sept 2012, January 2015 & March 2015
- ASTM F13 Pedestrian Safety & Footwear Committee Meetings, Toronto, June 2014
- ASTM F08 Sports Equipment & Facilities Committee Meetings, Toronto, May 2014
- ASTM F15 Consumer Products Committee Meetings, Toronto, May 2014
- “The Art of Interviewing & Cognitive Statement Taking”, OIAA Conference, Toronto, February 2014
- “Biomechanics & Insurance Claims”, OIAA Conference, Toronto, February 2014
- “Apparatus for Barefoot Friction Testing” & “Slip-Resistance-Matrix for Floors & Footwear”, Biomechanical Tribology Research Consortium Seminar, New Jersey, Nov 2013
- “Litigating Cross-Border Insurance & Product Liability Disputes”, BOS Law Conference, Toronto, Nov 2013
- Human Factors & Ergonomics Society Conferences, Oct 2013, Sept 2011 & Oct 2009
- “PC-Crash Expert Level Training Course: Rollovers”, MEA Forensics, September 2013
- Zip Line & Challenge Course Inspector Certification Course & Exams, Level I & II, ACCT, Baltimore, Aug 2013
- “PC-Crash Expert Level Training Course: Tractors & Trailers”, MEA Forensics, April 2013
- Sports Injury & Resort Liability Seminar Series, McCague Borlack, Toronto, March 2013, Sept, 2012, March 2012, March 2011 & June 2010
- “Minimum Maintenance Standards – 2013 Revisions”, Ontario Good Roads Association Webinar, March 2013
- “Examining Hybrid Electric Vehicles”, Advantage Forensics in-house seminar, December 2012
- “Product Liability Seminar”, McCague Borlack, Toronto, September 2012
- “Safer Infant Sleep Products”, Australian Safe Communities Foundation Webinar, September 2012
- Commercial Vehicle Event Data Recorder Downloading, Giffin Koerth in-house seminar, January 2012
- “Driver Distraction”, SAE Webinar, July 2011
- “The Human Factors Expert in Forensic Investigation & Litigation”, HFES Webinar, June 2011
- Crash Data Retrieval System Technician Certification Course, Toronto, March 2010
- “Introductory Segway Training”, San Antonio, October 2009
- Canadian Multidisciplinary Road Safety Conference, Saskatoon, June 2009
- “PC-Crash 8.1 Advanced Workshop”, MEA Training Course, Toronto, March 2009
- “Winning with Experts: Issues, Trends & Tactics”, Advocates’ Society, Toronto, December 2008
- “Designing & Signalizing Turn Lanes for Safety”, ITE Webinar, November 2008
- “Slip & Fall Prevention Research & Discussion”, Tile Council of America, July 2008
- “Practical Urban Maintenance”, C.S. Anderson Road School, University of Guelph, May 2008
- “Addressing Slip Resistance & Safety of Walking/Working Surfaces”, ASSE, June 2006
- “Advanced Driver Training”, BMW Training Course, Toronto, September 2005
- “Collision Reconstruction, Technology & Application”, CATAIR Conference, Burlington, August 2003
- “Estimating Driver Perception & Response Times”, CATAIR Training Course, Oshawa, December 2002
- Machine Shop Training Course, University of Western Ontario, London, 1994



## COURT QUALIFICATION HISTORY

- Qualified by Superior Court of Ontario on numerous occasions as expert in collision reconstruction, slips, trips & falls, human factors, perception reaction time, collision avoidance, and signage
- Qualified by Superior Court of California as expert in human factors, product failure & mechanical engineering
- Qualified at Ontario arbitrations as expert in mechanical engineering, slips, trips & falls, and human factors

## EMPLOYMENT HISTORY

### **Advantage Forensics Inc.**, Toronto

President, April 2012 to present

Lead investigator on 400+ collision reconstruction, personal injury & product failure cases

### **Giffin Koerth Inc.**, Toronto

Forensic Investigator & Head of Personal Injury Assessment Team, July 2002 to April 2012

Lead investigator on 1200+ collision reconstruction, personal injury & product failure cases

### **Algood Casters Ltd.**, Toronto

Mechanical Engineer, January 1999 to June 2002

Conducted failure analysis & destructive testing, developed standards, designed injection molding & stamping dies

### **Centre for Studies in Aging**, Toronto

Researcher, September 1996 to October 1998

Contributed to collision dynamics studies, wheelchair design, human factors studies & balance studies

### **Hand & Upper Limb Clinic**, St. Joseph's Health Centre, London

Student Researcher, September 1995 to April 1996

Developed prototype strength tester, contributed to biomechanics studies

## PROFESSIONAL SOCIETIES & ASSOCIATIONS

Professional Engineers Ontario, P.Eng. since 2002

Human Factors & Ergonomics Society, full member since 2003

Canadian Association for Technical Accident Investigators & Reconstructionists, member since 2002

American National Safety Institute B101.4 standard sub-committee since 2013

American Society for Testing & Materials, member since 2002:

- Committee E17: Vehicle-Pavement Systems  
E17.23 Sub-committee: Tire-Pavement Slip Resistance
- Committee E30: Forensic Sciences
- Committee E58: Forensic Engineering  
E58.02 Sub-committee: Product Defect Incidents  
E58.03 Sub-committee: Vehicular Incidents
- Committee F08: Sports Equipment & Facilities  
F08.12 Sub-committee: Gymnastics Equipment  
F08.17 Sub-committee: Trampoline Equipment  
F08.30 Sub-committee: Fitness Products  
F08.63 Sub-committee: Playground Surfacing Systems



- F08.66 Sub-committee: Sports Facilities
- **Committee F09: Tires**
  - F09.20 Sub-committee: Vehicular Testing
- **Committee F13: Pedestrian Safety & Footwear**
  - F13.10 Sub-committee: Traction
  - F13.30 Sub-committee: Footwear
  - F13.50 Sub-committee: Walkway Surfaces
- **Committee F15: Consumer Products**
  - F15.09 Sub-committee: Home Playground Equipment
  - F15.17 Sub-committee: Carriages, Strollers & Walkers
  - F15.21 Sub-committee: Infant Carriers & Swings
  - F15.22 Sub-committee: Toy Safety
  - F15.29 Sub-committee: Playground Equipment
  - F15.38 Sub-committee: Window Fall Prevention
  - F15.42 Sub-committee: Furniture Safety
  - F15.49 Sub-committee: Pool Safety Standards
  - F15.52 Sub-committee: Scooters
  - F15.58 Sub-committee: Powered Scooters & Skateboards
- **Committee F24: Amusement Rides & Devices**
  - F24.24 Sub-committee: Design & Manufacture
  - F24.30 Sub-committee: Maintenance & Inspection
  - F24.40 Sub-committee: Operations
  - F24.61 Sub-committee: Adventure Attractions
  - F24.70 Sub-committee: Water Related Amusement Rides
- **Committee F27: Snow Skiing**
  - F27.10 Sub-committee: Binding Test Procedures
  - F27.30 Sub-committee: Skis & Boots
  - F27.85 Sub-committee: Snowboarding
- **Committee F45: Driverless Automatic Guided Vehicles**

## LECTURES & TEACHING ENGAGEMENTS

- Feature story expert: "Pedestrian Collisions Increasing", Global TV News Toronto, Oct 2015
- Guest expert commentator: "Nighttime Pedestrian Collisions", CBC Metro Morning show, Oct 2015
- Program developer & expert witness panellist: "Examining & Cross-Examining Experts", The Advocates Society, May 2015, May 2011 & May 2010
- Technical paper reviewer for HFES Human Factors Conference: 2015, 2014, 2013, 2012, 2011, 2010 & 2009
- Seminar presenter: "The New Minimum Maintenance Standards", McKenzie Lake, London, November 2014
- Seminar presenter: "New Advances in Slip, Trip & Fall Claims", McKenzie Lake, London, November 2014
- Seminar presenter: "MVA Injury Biomechanics", Grillone Bekiaris Law Firm, Mississauga, October 2014
- Expert panelist on Black Box Data: "Emerging Sources of Electronic Evidence", OBA, Toronto, June 2014
- Seminar presenter: "AODA Staff Training Workshop", Advantage Forensics, Toronto, January, 2014
- Guest lecturer: "Forensics of Human Factors & Ergonomics", MIE 345 Engineering Undergraduate Course, University of Toronto, November 2013
- Seminar presenter: "Nighttime Pedestrian Collisions", Hughes Amys, Toronto, November 2013
- Seminar presenter: "Forensic Tools for Slip Trip & Fall Claims", CIIA Ontario AGM, Grand Bend, June 2013
- Seminar presenter: "Black Boxes: 2013 & Beyond", CIIA Ontario AGM, Grand Bend, June 2013
- Seminar presenter: "Advanced Analysis of Slip, Trip & Fall Claims", Black Sutherland, Toronto, February 2013
- Guest lecturer: "Workplace Biomechanics & Human Factors in Forensics", MIE 240 Engineering Undergraduate Course, University of Toronto, January 2013
- Training instructor: "Segway Rider Training", Advantage Forensics, Toronto, November 2012



- Seminar presenter: “Staircase Assessment, Slips, Trips & Falls”, Aviva, Hamilton, October 2012
- Seminar presenter: “Introduction to Forensic Investigation”, Bergel Magence, Toronto, April 2012
- Seminar presenter: “New Trends in Slips, Trips & Falls”, Hughes Amys, Toronto, March 2012
- Seminar presenter: “Investigating School Injury Claims”, Ontario School Board (OSBIE), Guelph, Dec. 2011
- Course instructor: “Intersection Safety”, Ontario Traffic Council, Markham, November 2011 & November 2010
- Seminar presenter: “New Trends in Slips, Trips & Falls”, Beard Winter, Toronto, February 2011
- Seminar presenter: “New Trends in Slips, Trips & Falls”, Travelers Insurance, Toronto, January 2011
- Seminar presenter: “Human Factors in Pedestrian & Cyclist Collisions”, Aviva, Niagara Falls, October 2009
- Course instructor: “Practical Urban Maintenance”, C.S. Anderson Road School, University of Guelph, May 2010 & May 2009
- Seminar presenter: “Nighttime Tractor Trailer Collisions”, Kingsway Insurance, Mississauga, February 2009
- Seminar presenter: “Specialization in Forensic Investigations”, TTC, Toronto, January 2009
- Seminar presenter: “Accident Reconstruction, Human Factors & Personal Injury”, Aviva, Toronto, June 2007
- Course instructor: “Utilizing Accident Reconstruction and Investigative Engineering Techniques to Litigate Personal Injury Claims”, The Canadian Institute, Toronto, February 2007
- Seminar presenter: “Claims Issues & Risk Management for Property Managers”, OBA, Toronto, January 2006
- Seminar presenter: “Slip & Fall Seminar”, Kingsway Insurance, Toronto, September 2002

## JOURNAL PAPERS & PUBLICATIONS

- Contributor to ASTM WK-48002: “Standard Practice for Design, Manufacture, Operation & Maintenance of Inflatable Amusement Devices”
- Contributor to ASTM WK-33154: “Standard Specification for Outdoor Fitness Equipment Intended for Unsupervised Public Use”
- Contributor to ASTM WK-43602: “Standard Specification for Externally Loaded Strength Training Equipment”
- “Practical Method for Forensic Testing of Fall Impact Effects on the Human Spine”, Proceedings of the 57<sup>th</sup> Annual Human Factors & Ergonomics Society Conference, San Diego, October 2013
- “Nighttime Collisions – The Dilemma of the Invisible Pedestrian”, WP Magazine, June 2013
- “The Changing World of Collision Fraud Investigation”, WP Magazine, May 2013
- “The Slip Tester”, Claims Canada, February/March 2012
- “Painted Concrete Surfaces: Slippery or Not?”, Claims Canada National Claims Manual, February 2012
- “Foot Placement in Oblique Stair Descent”, Proceedings of the 55<sup>th</sup> Annual Human Factors & Ergonomics Society Conference, Las Vegas, September 2011
- “Visibility of Tractor Trailer Reflective Strips at Small Viewing Angles”, Proceedings of the 53<sup>rd</sup> Annual Human Factors & Ergonomics Society Conference, San Antonio, October 2009
- “Determination of Snowmobile Deceleration Rates for Ejected Occupant Scenarios”, Proceedings of the 19<sup>th</sup> Canadian Multidisciplinary Road Safety Conference, Saskatoon, June 2009
- “What is a ‘Human Factors’ Expert Anyway?”, Claims Canada, April/May 2009
- “Road Design Issues in Motor Vehicle Collisions”, Without Prejudice, December 2008
- “Transportation Engineering Meets CSI: Forensic Engineering of Collisions”, Transportation Talk, Canadian Institute of Transportation Engineering, Fall 2008



- Contributor to ANSI Slip Testing Standards
- Contributor to ASTM WK-11411: “Standard Method for Measurement with Variable-Angle Tribometers”
- Contributor to ASTM WK-6587: “Standard Practice for Validation & Calibration of Walkway or Shoe Surface Tribometers using Reference Surfaces”
- Contributor to ANSI Rigid & Swivel Caster Standards A-A-55617 & A-A-55619
- Contributor to ANSI/RESNA Wheelchair Standards Vol. 1 & 2
- “Validation of Dynamic Models for Power Wheelchairs using Working Model”, Masters Engineering Thesis, Institute of Biomedical Engineering, University of Toronto, October 1998
- “Validation of dynamic models for power wheelchairs”, RESNA Conf. Proceedings, Minneapolis, June 1998
- “Design & development of a portable elbow torque meter for clinical use”, Undergraduate Engineering Thesis, University of Western Ontario, April 1996