J. MICHIO CLARK, Ph.D.

PROFESSIONAL BIOGRAPHICAL OUTLINE

BACKGROUND

Dr. Clark earned a Bachelor of Science in Kinesiology from Brock University, St. Catharines, Ontario, Canada and a Master of Science in Human Kinetics from the University of Ottawa, Ottawa, Ontario, Canada. He went on to obtain his Ph.D. in Mechanical Engineering (Marie-Curie Innovative Training Networks) from University College Dublin, Dublin, Ireland. Through his educational and research background, Dr. Clark specializes in injury biomechanics with a specific interest in traumatic brain injuries.

His scientific research has focused on human impact responses, injury risk, and the protective effects of safety devices. Dr. Clark's graduate research involved the collection and analysis of brain injury data using anthropomorphic test devices (ATDs) in test protocols that reflect the mechanisms of injury, collecting, analyzing, and reconstructing real-world head impacts (using physical and computational models), analyzing helmet damage from real-world accidents, and assessing the protective capabilities of helmets. This research was completed in collaboration with several industry partners and governing bodies (e.g. Reebok-CCM, Charles Owen, British Horseracing Authority, British Eventing, British Equestrian Trade Association and the Irish Horseracing Regulatory Board) and was aimed at understanding how head injuries are caused and how they may be prevented. After the completion of his graduate studies, Dr. Clark's research has included assessing occupant kinematics in automotive accidents and developing methods to assess the risk of brain injury and other bodily injury.

Dr. Clark's academic and professional experience represents a unique combination of knowledge in biomechanical engineering, human anatomy, and physiology with experience in testing involving both instrumented ATDs and live human volunteers. Currently, he specializes in injury biomechanics, focusing on injury mechanisms and associated injury risk by analyzing human body dynamics during specific events. This enables Dr. Clark to perform thorough scientific investigations into a wide range of circumstances.

SUMMARY OF EXPERIENCE

- Conducted research involving the reconstruction of over 400 real-world head impacts aimed at evaluating the head kinematics and brain tissue response associated with concussion.
- Designed helmet testing protocols that reflect head impact event parameters associated with real-world concussive scenarios.
- Examined over 200 helmets involved in real-world equestrian sport accidents as part of research assessing the performance of equestrian helmets.
- Analyzed thousands of videos of real-world accidents in relation to brain injury biomechanics research.
- Conducted research evaluating brain injury risk for over 1,000 motor vehicle collision tests.
- Conducts testing on protective sports equipment to evaluate design, performance, and risk of injury.
- Performs engineering test programs to evaluate the kinematic and kinetic responses of the human body when exposed to a variety of external loading conditions
- Applies biomechanical engineering principles for the purpose of reconstructing various accident events and scenarios.
- Uses peer-reviewed and generally accepted techniques to evaluate the severity of events, the response of the human body, and the forces applied to determine the presence or absence of various injury mechanisms.

AREAS OF SPECIALTY

- Injury Causation Biomechanics
- Slip/Trip/Fall Kinematics and Kinetics
- Human Dynamic Analysis and Testing
- Injury Mechanism Analysis
- Impact Biomechanics
- Accident Reconstruction
- Video Analysis
- Traumatic Brain Injury

EDUCATION

- Bachelor of Science in Kinesiology, Brock University, St. Catharines, ON, Canada, 2013
- Master of Science in Human Kinetics; University of Ottawa, Ottawa, ON, Canada, 2015
- Doctor of Philosophy in Mechanical Engineering; (Marie-Curie ITN), University College Dublin, Dublin, Ireland, 2019

PROFESSIONAL EXPERIENCE

December 2024 – Present | ARCCA, LLC | Senior Biomechanist

- Perform biomechanical analysis related to human injury causation in automobile accidents, slip/trip/fall events, sports/recreation, construction, workplace, etc.
- Conduct field investigations to document accident scenes and gather information that is the basis for simulation, testing, and overall analysis.
- Analyze human body responses to external forces, assess injury mechanisms, and evaluate potential for injury.
- Determine whether preventative measures could have been implemented to mitigate injury mechanisms.
- Prepare technical reports of scientific findings and conclusions.
- Communicate technical findings to clients.

August 2019 – October 2024 | Vector Scientific Inc. | Biomechanical Engineer / Research Investigator

- Forensic biomechanics case investigations and reconstructions in automobile, sport/recreation, and industrial/occupational accidents with a specialization in head injuries.
- Conducted inspections of accident scenes and of involved or exemplar vehicles, safety equipment, consumer products, and other items.
- Communicated forensic biomechanics case investigation findings in written and oral presentation formats in addition to testimony.
- Conducted and supervise original research to obtain and analyze relevant technical data.
- Presented and published independent research at scientific conferences and in peer-reviewed journals.
- Worked closely as part of a team of specialists to produce a holistic view of the accident and findings.
- Mentored, led, and guided other biomechanical engineers in the investigation and injury biomechanics analysis of automobile, sport/recreation, and industrial/occupational accidents.

March 2019 – April 2019 | GTD Scientific Inc. | Contract Biomechanist

- Created a Crime Scene Investigation (CSI) course for Grades 8-12 (Ages 12-18).

February 2019 – April 2019 | University of Ottawa | Research Assistant

- Collected American football helmet impact testing data using a three-dimensional (linear and rotational acceleration) test protocol.
- Conducted brain trauma profiling for youth in American football.

September 2015 – July 2019 | University College Dublin | Early Stage Researcher

- Funded by European Union's Horizon 2020 under the Marie-Curie Innovation Training Network, HEADS (**H**ead protection: a **E**uropean training network for **A**dvanced **D**esigns in **S**afety).
- Collected and analyzed brain injury data using three-dimensional (linear and rotational acceleration) test protocols that reflect the mechanisms of injury within sport.
- Reconstructed brain injury of sport cases using video analysis, Hybrid III, MADYMO, and finite element models.
- Collected and analyzed helmet damage sustained from real-world accidents.
- Created a publicly available accident database pertaining to impact parameters, head kinematics, brain tissue responses and helmet damage sustained from real-world equestrian accidents.
- Wrote deliverable reports released to the European Commission and public.
- Conducted and disseminated research findings through peer-reviewed journal articles as well presentations at conferences and events for audiences ranging from children to academics and governing bodies.
- Supervised undergraduate student research projects.

September 2015 – May 2018 | University College Dublin | Teaching Assistant

- Conducted labs in Mechanics for Engineers and Design and Materials.
- Taught 1st and 2nd year laboratories and tutorials in mechanical engineering theory and application of software such as ArchiCAD and Autodesk Inventor.
- Corrected class assignments.

May 2014 – August 2015 | University of Ottawa | Research Assistant

- Collected and analyzed of brain injury data using three-dimensional (linear and rotational acceleration) test protocols that reflect the mechanisms of injury within sport.
- Video analysis of sporting events resulting in concussion.
- Reconstructed brain injury of sport and hospital cases using Hybrid III, MADYMO, and finite element models.
- Analyzed of data from brain injury reconstructions using finite element modelling.
- Project Lead and managed data for large lab-based research project involving brain injury reconstructions.
- Conducted research as well as writing for journal and conference publications.

September 2013 – April 2015 | University of Ottawa | Teaching Assistant

- Conducted labs in courses such as Musculoskeletal Anatomy, Introduction to the Biomechanics of Human Movement, Laboratory Techniques in Exercise Physiology and Biomechanics and Psychomotor Behaviour Laboratory.
- Taught 1st, 2nd, and 3rd year laboratories in theory and application of biomechanical and psychomotor behaviour principles.
- Corrected class assignments.

May 2013 – August 2013 | Impakt Protective Inc. | Student Intern

- Lead designer for a pendulum impactor and sliding table for use in helmet-based concussion sensor research.
- Research assistant for a Youth Football Study-NCAFA (Ottawa).

JOURNAL PEER REVIEWER

- Annals of Biomedical Engineering
- Biomechanics
- Biophysica
- Brain Sciences
- Computer Methods in Biomechanics and Biomedical Engineering
- International Journal of Environmental Research and Public Health
- Journal of Biomechanics
- Journal of Sport Rehabilitation
- Life
- Neurosurgery
- Proceedings of the iMeche, Part P: Journal of Sports Engineering and Technology

PUBLICATIONS

Doctoral Dissertation

Clark JM. (2019). "In-depth analysis and reconstruction of equestrian jockey accidents and their helmets". University College Dublin.

Master's (MSc) Thesis

Clark JM. (2015). "Evaluation of the protective capacity of ice hockey goaltender masks for three accident events using dynamic response and brain stress and strain". University of Ottawa.

Articles published in refereed journals

1. Murphy A, Post A, Gilchrist MD, **Clark JM**, Hoshizaki, TB. (2024). Comparing equestrian helmets with and without rotational technology using an equestrian concussive specific helmet test protocol. Sports Engineering. 27(1), 2.
2. **Clark JM**, Connor TA, Post A, Hoshizaki TB, Gilchrist MD. (2021). The influence of impact surface on head kinematics and brain tissue response during impacts with equestrian helmets. Sports Biomechanics. 20(6), 737-750.
3. **Clark JM**, Adanty K, Post A, Hoshizaki TB, Ni Annaidh A, Gilchrist MD. (2021). A parametric analysis of factors that determine head injury outcomes following equestrian fall accidents. International Journal of Crashworthiness. 26(3), 295-308.
4. Connor TA, **Clark JM**, Stewart M, Ní Annaidh A, Gilchrist MD. (2021). Post-accident evidence basis for new equestrian standards: Relationship between helmet liner residual crush and accident parameters. Applications in Engineering Science. 100044.
5. **Clark JM**, Williams C, Clissold J, McGoldrick A, Hill J, Ni Annaidh A, Gilchrist MD (2020). Video analysis of head injuries incidents in equestrian sports. Sports Engineering, 23, 1-9.

6. **Clark JM**, Hoshizaki TB, Ni Annaidh A, Gilchrist MD. (2020). Equestrian helmet standards: Do they represent real-world accident conditions? Annals of Biomedical Engineering. 48(8), 2247-2267.
7. Connor TA, **Clark JM**, Brama P, Stewart M, Ní Annaidh A, Gilchrist MD. (2020). An evidence basis for future equestrian helmet lateral crush certification tests. Applied Sciences. 10(7), 2623.
8. Trotta A, **Clark JM**, McGoldrick A, Ni Annaidh A, Gilchrist MD. (2020). Biofidelic finite element modelling of brain trauma: Importance of the scalp in simulating head impact. International Journal of Mechanical Sciences. 173, 105448.
9. **Clark JM**, Connor TA, Williams C, Clissold J, McGoldrick A, Hill J, Ni Annaidh A, Gilchrist MD. (2020). Analysis of helmet damage and associated head injuries arising from real-world equestrian fall accidents. Journal of Testing and Evaluation. 48(3), 2185-2195.
10. **Clark JM**, Connor TA, Post A, Hoshizaki TB, Ni Annaidh A, Gilchrist MD. (2020). Could a compliant foam anvil characterise the biofidelic impact response of equestrian helmets?. Journal of Biomechanical Engineering. 146(6), 061006.
11. **Clark JM**, Adanty K, Post A, Hoshizaki TB, Clissold J, McGoldrick A, Hill J, Ni Annaidh A, and Gilchrist MD. (2020). Proposed injury thresholds for concussion in equestrian sports. Journal of Science and Medicine in Sport. 23(3), 222-236.
12. Adanty K, **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2020). Comparing two proposed protocols to test the oblique response of cycling helmets to fall impacts. International Journal of Crashworthiness. 25(6), 648-663.
13. **Clark JM**, Hoshizaki TB, Gilchrist MD. (2020). Event-specific impact test protocol for ice hockey goaltender masks. Sports Biomechanics. 19(4), 510-531.
14. Connor TA, **Clark JM**, Jayamohan J, Stewart M, McGoldrick A, Williams C, Seemungal BM, Smith R, Burek R, Gilchrist MD. (2019). Do equestrian helmets prevent concussion? A retrospective analysis of head injuries and helmet damage from real-world equestrian accidents. Sports Medicine-Open. 5(1), 1-8.
15. Post A, Hoshizaki TB, Karton C, **Clark JM**, Dawson L, Cournoyer J, Taylor K, Oeur RA, Gilchrist MD, Cusimano MD. (2019). The biomechanics of concussion for ice hockey head impact events. Computer Methods in Biomechanics and Biomedical Engineering. 22(6), 631-643.
16. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2018). Distribution of brain strain in the cerebrum for ice hockey goaltender impacts. Journal of Biomechanical Engineering. 140(12), 121007.
17. **Clark JM**, Taylor K, Post A, Hoshizaki TB, Gilchrist MD. (2018). Comparison of ice hockey goaltender helmets for concussion type impacts. Annals of Biomedical Engineering. 46(7), 986-1000.
18. Post A, Koncan D, Kendall M, Cournoyer J, **Clark JM**, Kosziwka G, Chen W, de Grau S, Hoshizaki TB. (2018). Analysis of speed accuracy using video analysis software. Sport Engineering. 21(3), 235-241.
19. **Clark JM**, Hoshizaki TB, Gilchrist MD. (2018). Assessing women's lacrosse head impacts using finite element modelling. Journal of the Mechanical Behavior of Biomedical Materials, 80, 20-26.
20. **Clark JM**, Hoshizaki TB, Gilchrist MD. (2017). Protective capacity of an ice hockey goaltender helmet for three events associated with concussion. Computer Methods in Biomechanics and Biomedical Engineering, 20(12), 1299-1311.
21. Post A, **Clark JM**, Robertson DGE, Hoshizaki TB, Gilchrist MD. (2017). The effect of acceleration signal processing for head impact numeric simulations. Sport Engineering, 20(2), 111-119.
22. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2016). Protective capacity of ice hockey helmets against different impact events. Annals of Biomedical Engineering, 44(12), 3693–3704.

23. **Clark JM**, Hoshizaki TB. (2016). The ability of men's lacrosse helmets to reduce the dynamic impact response for different striking techniques in women's field lacrosse. The American Journal of Sports Medicine, 44(4), 1047-1055.
24. Nur S, Kendall M, **Clark JM**, Hoshizaki TB. (2015). A comparison of the capacity of ice hockey goaltender masks for the protection from puck impacts. Sports Biomechanics, 14(4), 459-468.

Refereed Proceedings

1. **Clark JM**, Adanty K, Post A, Hoshizaki TB, Clissold J, McGoldrick A, Ni Annaidh A, and Gilchrist MD. (2018). Reconstruction of real world concussive and non-concussive accidents in equestrian sports. Proceedings of IRCOBI Conference, Athens, Greece, September 12-14.
2. **Clark JM**, Connor TA, Williams C, Gilchrist MD. (2017). Damage to real world equestrian helmets sustained from impact against different surfaces. Proceedings of IRCOBI Conference, Antwerp, Belgium, September 13-15.
3. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2016). The association among injury metrics for different events in ice hockey goaltender impacts. Proceedings of IRCOBI Conference, Malaga, Spain, September 14-16.
4. **Clark JM**, Post A, Connor TA, Hoshizaki TB, Gilchrist MD. (2016). Effect of impact surface in equestrian falls. Proceedings of 34th International Conference on Biomechanics in Sports, Tsukuba, Japan, July 18-22.
5. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2015). Determining the relationship between linear and rotational acceleration and MPS for different magnitudes of classified brain injury risk in ice hockey. Proceedings of IRCOBI Conference, Lyon, France, September 9-11.

Published abstracts

1. Gilchrist M, **Clark JM**, McGoldrick A, Clissold J, Hill J, Adanty K, Post A., Hoshizaki, TB, Ni Annaidh A, 2024. 12.8 Proposed injury thresholds for concussion in equestrian sports. British Journal of Sports Medicine. 58(Suppl 1), A66. 6th International Conference on Concussion in Sport. Amsterdam, Netherlands, October 27-30.
2. **Clark JM**, Baker WA, Wheeler JR, Wheeler JB. (2022). Rotational head acceleration in rear-end motor vehicle collision and associated concussion risk. North American Congress on Biomechanics, Ottawa, ON, Canada, August 21-25.
3. **Clark JM**, Wheeler JB. (2022). Development of refined injury corridors for evaluating concussion probability using maximum principal strain and direction sensitivity, 11th European Solid Mechanics Conference. Galway, Ireland, July 4-8.
4. Gilchrist MD, Connor TA, **Clark JM**, McGoldrick A. (2019). Computational Analysis of Traumatic Head Injuries Resulting from Falls and Impacts in Sports. AAFS Annual Conference, Baltimore, MD, USA, February 18-23.
5. Paiement B, Post A, Koncan D, Kendall M, Cournoyer J, **Clark JM**, Kosziwka G, Chen W, de Grau S, Hoshizaki TB. (2018). Analysis of speed accuracy using video analysis software. The 20th Biennial Meeting of the Canadian Society for Biomechanics, Halifax, Nova Scotia, Canada, August 14-17.
6. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2018). The kinematic response characteristics of falls to turf in equestrian sports. 8th World Congress of Biomechanics, Dublin Ireland, July 8-12.
7. Adanty K, **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2018). A comparison between two oblique impact test protocols for cycling helmets. 8th World Congress of Biomechanics, Dublin Ireland, July 8-12.

8. Karton C, Post A, Hoshizaki TB, **Clark JM**, Dawson L, Cournoyer J, Taylor K, Oeur RA, Gilchrist MD, Cusimano MD. (2017). The biomechanics of concussion for ice hockey head impact events. Mayo Clinic Sports Medicine Ice Hockey Summit III: Action on Concussion. Rochester, MN, USA, September 28-29.
9. Dawson LE, Post A, Gilchrist MD, **Clark JM**, Cournoyer J, Karton C, Oeur A, Taylor K, Hoshizaki TB. (2017). A biomechanical analysis of event specific concussive impacts in American Football. 26th Congress of the International Society of Biomechanics, Brisbane, Australia, July 23-27.
10. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2015). Protective capacity of ice hockey helmets for different mechanisms of head injury. 25th Congress of the International Society of Biomechanics, Glasgow, UK, July 12-16.
11. **Clark JM**, Hoshizaki TB. (2014). Risk of sustaining a concussion in women's field lacrosse. The Sport Concussion Conference, Chicago, IL, July 11-13.
12. **Clark JM**, Hoshizaki TB. (2014). Risk of sustaining a concussion in women's field lacrosse. 7th World Congress of Biomechanics, Boston, MA, USA, July 6-11.

Conference Presentations

1. Gilchrist M, **Clark JM**, McGoldrick A, Clissold J, Hill J, Adanty K, Post A., Hoshizaki, TB, Ni Annaidh A. (2022). *12.8 Proposed injury thresholds for concussion in equestrian sports*. 6th International Conference on Concussion in Sport, Amsterdam, Netherlands, October 27-30.
2. **Clark JM**, Baker WA, Wheeler JR, Wheeler JB. (2022). *Rotational head acceleration in rear-end motor vehicle collision and associated concussion risk*. North American Congress on Biomechanics, Ottawa, ON, Canada, August 21-25.
3. **Clark JM**, Wheeler JB. (2022). *Development of refined injury corridors for evaluating concussion probability using maximum principal strain and direction sensitivity*. 11th European Solid Mechanics Conference. Galway, Ireland, July 4-8.
4. Baker WA, **Clark JM**, Wheeler JR, Wheeler JB. (2021). *Validation of rotational head kinematics in IIHS rear-end impact tests determined by video analysis*. 49th NHTSA Workshop on Human Subjects for Biomechanical Research, Virtual, October 26-27.
5. **Clark JM**, Wheeler JB. (2020). *The effect of active head restraints (AHRs) on head kinematics in rear impact sled tests*. 48th NHTSA Workshop on Human Subjects for Biomechanical Research, Virtual, October 27-28.
6. Gilchrist MD, Connor TA, **Clark JM**, McGoldrick A. (2019). *Computational Analysis of Traumatic Head Injuries Resulting from Falls and Impacts in Sports*. AAFS Annual Conference, Baltimore, MD, USA, February 18-23.
7. **Clark JM**, Adanty K, Post A, Hoshizaki TB, Clissold J, McGoldrick A, Ni Annaidh A, and Gilchrist MD. (2018). *Reconstruction of real world concussive and non-concussive accidents in equestrian sports*. IRCOBI Conference, Athens, Greece, September 12-14.
8. Paiement B, Post A, Koncan D, Kendall M, Cournoyer J, **Clark JM**, Kosziwka G, Chen W, de Grau S, Hoshizaki TB. (2018). *Analysis of speed accuracy using video analysis software*. The 20th Biennial Meeting of the Canadian Society for Biomechanics, Halifax, NS, Canada, August 14-17.
9. Adanty K, **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2018). *A comparison between two oblique impact test protocols for cycling helmets*. 8th World Congress of Biomechanics.
10. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2018). *The kinematic response characteristics of falls to turf in equestrian sports*. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12.
11. Karton C, Post A, Hoshizaki TB, **Clark JM**, Dawson L, Cournoyer J, Taylor K, Oeur RA, Gilchrist MD, Cusimano MD. (2017). *The biomechanics of concussion for ice hockey head impact events*.

Mayo Clinic Sports Medicine Ice Hockey Summit III: Action on Concussion. Rochester, MN, USA, September 28-29.

12. **Clark JM**, Connor TA, Williams C, Gilchrist MD. (2017). *Damage to Real World Equestrian Helmets Sustained from Impact against Different Surfaces*. IRCOBI Conference, Antwerp, Belgium, September 13-15.
13. Dawson LE, Post A, Gilchrist MD, **Clark JM**, Cournoyer J, Karton C, Oeur A, Taylor K, Hoshizaki TB. (2017). *A biomechanical analysis of event specific concussive impacts in American Football*. 26th Congress of the International Society of Biomechanics, Brisbane, Australia, July 23-27.
14. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2016). *The association among injury metrics for different events in ice hockey goaltender impacts*. IRCOBI Conference, Malaga, Spain, September 14-16.
15. **Clark JM**, Post A, Connor TA, Hoshizaki TB, Gilchrist MD. (2016). *Effect of impact surface in equestrian falls*. 34th International Conference on Biomechanics in Sports, Tsukuba, Japan, July 18-22.
16. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2015). *Determining the relationship between linear and rotational acceleration and MPS for different magnitudes of classified brain injury risk in ice hockey*. IRCOBI Conference, Lyon, France, September 9-11.
17. **Clark JM**, Post A, Hoshizaki TB, Gilchrist MD. (2015). *Protective capacity of ice hockey helmets for different mechanisms of head injury*. 25th Congress of the International Society of Biomechanics, Glasgow, UK, July 12-16.
18. **Clark JM**, Hoshizaki TB. (2014). *Risk of sustaining a concussion in women's field lacrosse*. The Sport Concussion Conference, Chicago, IL, USA, July 11-13.
19. **Clark JM**, Hoshizaki TB. (2014). *Risk of sustaining a concussion in women's field lacrosse*. 7th World Congress of Biomechanics, Boston, MA, USA, July 6-11.

INVITED SPEAKER

1. Lewis Devin J, **Clark JM**. (2025). *Assessing Injury Causation: The Role of a Biomechanical Engineer*. CLA Accredited Seminar, Pennsylvania, USA February 26.
2. **Clark JM**. (2024). *Assessing Brain Injury Biomechanics in Insurance Claims*. 28th Annual Wyoming Insurance Claims Seminar, Virtual, February 9.
3. **Clark JM**. (2022). *Forensic Biomechanics*. University of Ottawa - APA 4118: Biomechanical Basis of Injury, Ottawa, ON, Canada, February 14.
4. Wheeler JB, Weimer Z, Storvik SG, **Clark JM**, Baker WA, Sreedhar A. (2021, 2022). *Accident reconstruction and injury biomechanics in low-speed motor vehicle collisions*. CLA Accredited Seminars, Arizona, Colorado, and Neveda, USA.
5. **Clark JM**. (2018). *Head injury and protection in Equestrian Sports*. CAFRE Enniskillen - Equine Health and Safety Day, Enniskillen, UK, November 15.
6. **Clark JM**. (2018). *Current R&D in Helmet Design and Testing: Dealing with Rotational Impact*. National Equine Forum, London, UK, March 8.

AWARDS/PRIZES

- Canadian Interuniversity Sport Academic All-Canadian Honour Roll (2011-2012)
- Canadian Interuniversity Sport Academic All-Canadian Honour Roll (2010-2011)

COMMITTEES

Canadian Standards Association (CSA)

- Member of the CSA Hockey Working Group 2, subcommittee on ice hockey goalie helmet standards.

Student Advisory

1. Murphy A. (2022). Comparing equestrian helmets with and without rotational technology using an equestrian specific helmet test protocol. MSc. Thesis. University of Ottawa.

PROFESSIONAL MEMBERSHIPS

- Society of Automotive Engineers (SAE)

TRAINING SESSIONS/WORKSHOPS ATTENDED

Counterfeit Airbags (July 19th, 2024)

- 2-hour online training class regarding counterfeit airbags identification can performance.
- Online training class organized by National Association of Professional Accident Reconstruction Specialists (NAPARS) and presented by Mr. Thomas Nichols of General Motors and Wade Bartlett, NAPARS Administrator.

Zero to Hero in CloudCompare (July 9-10th, 2024)

- 8-hour online training class regarding use and application of CloudCompare.
- Online training class organized by ai2-3D Forensics and taught by Mr. Eugene Liscio.

National Child Passenger Safety Board Continuing Education Units Webinar: Air Bags 201 (June 22nd, 2023)

- 1-hour webinar on understanding the physics of motor vehicle crashes and now airbags are designed to reduce injury risk.
- Webinar organized by National Child Passenger Safety Board (NCPSB) and presented by Jennifer Pelky of Toyota USA.

Investigation of Motorcycle Crashes - Level I (Online) (March 6th – April 9th, 2023)

- 40 hours course on investigation of motorcycle crashes and use of advanced mathematical formulas.
- Course conducted through the Institute of Police Technology and Management (University of North Florida) and instructed by Mr. David Benn.

50th NHTSA Workshop on Human Subjects for Biomechanical Research (October 26-27th, 2022)

- Workshop on current research in the field of injury biomechanics.
- Virtual workshop organized by the National Highway Traffic Safety Administration (NHSTA).

Accident Reconstruction Digital Summit (March October 29-30th, 2022)

- Digital Summit on best practices, what information needs to be collected at a crash site, how to prioritize key data, how to interpret results, emerging vehicle technology, and more.
- Virtual workshop organized by the SAE International.

49th NHTSA Workshop on Human Subjects for Biomechanical Research (October 26-27th, 2021)

- Workshop on current research in the field of injury biomechanics.
- Virtual workshop organized by the National Highway Traffic Safety Administration (NHSTA).

Pedestrian/Bicycle Crash Investigation – Level I (Online) (April 19th – May 23rd, 2021)

- 40 hours course on the special dynamics involved in pedestrian and bicycle traffic crashes.
- Course conducted through the Institute of Police Technology and Management (University of North Florida) and instructed by Mr. Kenneth B. Harmon.

48th NHTSA Workshop on Human Subjects for Biomechanical Research (October 27-28th, 2020)

- Workshop on current research in the field of injury biomechanics.
- Virtual workshop organized by the National Highway Traffic Safety Administration (NHSTA).

Principles of Dynamic Data Collection (April 30th, 2020, May 6th, 2020)

- Two-part webinar on the principles of dynamic data collection.
- Webinar sessions with Mike Beckage BS of Diversified Technical Systems, Seal Beach, CA, USA.

HEADS Automotive Winter School (November 23rd-24th, 2016)

- Workshop on the application of real-world accident data used to improve safety and design within the automotive industry.
- Completed as part of Doctorate studies under the Marie-Curie Innovation Training Network, HEADS (Head protection: a European training network for Advanced Designs in Safety.

IRCOBI 2016 Pre-Conference Workshop: Crash Reconstruction (September 13th, 2016)

- Workshop on different techniques used in crash reconstructions pointing out at the benefits and limitations of each of them at Sala Oyarzábal of the Palacio Provincial of Diputación de Málaga, Malaga, Spain.

HEADS Workshop on Neuroanatomy (April 25-29th, 2016)

- Workshop on neuroanatomy with sessions conducted by Prof. Bart Depreitere at KU Leuven, Leuven, Belgium.
- Workshop on medical imaging with sessions conducted by Ir. Karen De Leener and Dr. Ir. Eva Verhoelst at Materialise OnSite, Leuven, Belgium.
- Completed as part of Doctorate studies under the Marie-Curie Innovation Training Network, HEADS (Head protection: a European training network for Advanced Designs in Safety.

Intellectual Property Management (April 27th, 2016)

- Workshop on intellectual property and innovation with sessions conducted by Dr. Ir. Siegfried Jaecques at KU Leuven, Leuven, Belgium.
- Completed as part of Doctorate studies under the Marie-Curie Innovation Training Network, HEADS (Head protection: a European training network for Advanced Designs in Safety.

International Winter School: New Challenges in the Physics of the Brain (February 14-19th, 2016)

- Workshop on the physics of the brain form cells to organs at École de Physique des Houches, Les Houches, France.
- Completed as part of Doctorate studies under the Marie-Curie Innovation Training Network, HEADS (Head protection: a European training network for Advanced Designs in Safety.

UCD HEADS Innovation Workshop Week (October 19th-23rd, 2015)

- Workshop on design-thinking and innovation with sessions conducted by Christine Kurjan of Innovation Delivery at University College Dublin, Belfield, Dublin 4, Ireland.
- Completed as part of Doctorate studies under the Marie-Curie Innovation Training Network, HEADS (Head protection: a European training network for Advanced Designs in Safety.

IRCOBI-NOCSAE-PDB-Snell Workshop: "Angular Head Motions: their importance and measurement" (September 8th, 2015)

- Workshop on the importance of angular kinematics in the measurement of brain injury risk at the Institut français des sciences et technologies des transports, de l'aménagement et des réseaux (IFSTTAR), Lyon, France.