Conference Program

2025 Ontario Biomechanics Conference

Ontario Tech Univeristity | May 21-23, 2025

OBC

ONTARIO BIOMECHANICS CONFERENCE

ONTARIO TECH UNIVERSITY

2025

OntarioTech UNIVERSITY

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Contents

GENERAL INFORMATION

Welcome to the 2025 Ontario Biomechanics Conference!

The annual Ontario Biomechanics Conference (OBC) highlights biomechanics research in Ontario while providing students with a casual and supportive environment to network and present their work. The conference is student-focused, with students leading presentations, sessions, and discussions.

Since its start in 2004 with 41 abstracts, OBC has grown significantly, with over 120 abstracts and 200 attendees at this year's meeting. Originally hosted at a central Ontario location, the conference now rotates among Ontario universities, showcasing campuses and biomechanics programs while offering students the opportunity to explore different institutions.

This year, OBC is being hosted at **Ontario Tech University** in **Oshawa, Ontario**.

The conference will take place in the Business & Information Technology Building (BIT) centrally located on Ontario Tech's North Campus. Parking will be available for free in Founders Lot 2 or the Commencement Lot for those staying in the campus residences.

Address:

Business & Information Technology Building (BIT)
Ontario Tech University, North Campus
20 Founders Drive
Oshawa, Canada, ON, L1G 0C5

Map Links:

BIT (formerly 'UB') Building: https://maps.app.goo.gl/VAf9FHwaocp2pV3H7

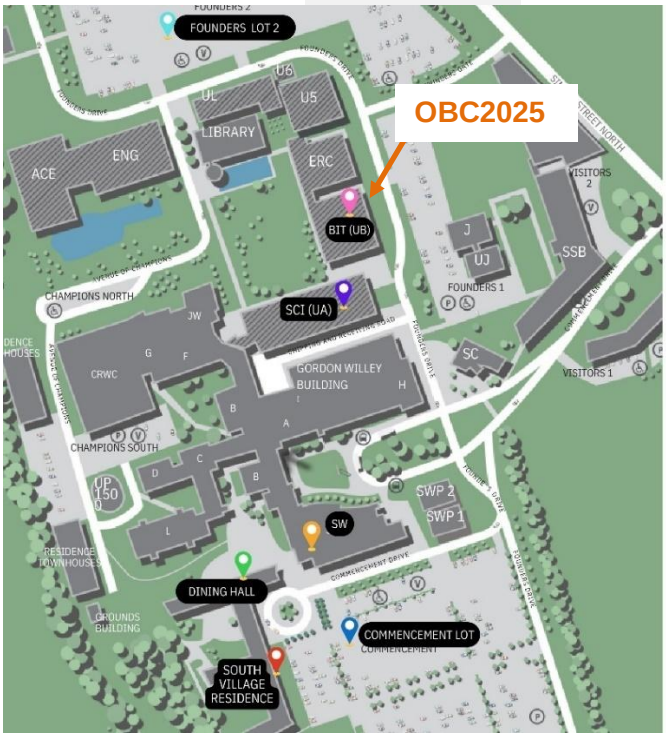
Founders Lot 2: https://maps.app.goo.gl/upxtw24HHmDxRRPL6

Commencement Lot: https://maps.app.goo.gl/LsdLzqAzR3YpiRqh9

South Village Residence: https://maps.app.goo.gl/U8j4qZkEB4y9LdFk7

2200 North Bar & Grill: https://maps.app.goo.gl/S9HLDsq3NMU3L2YK9

CAMPUS MAP



DIRECTIONAL MAP

SOUTH VILLAGE RESIDENCE TO BIT (UB) BUILDING

- Depart from South Village Residence
- Use the South Wing Entrance to access the building (SW)
- Take the stairs on the left side to the second floor
- Upon reaching the top of the stairs, turn left and proceed straight ahead
- Continue straight, passing Tim Hortons and walk to the end of the hall
- Turn right to enter the UA/SCI Building and follow the hallway around the corner
- You are now inside the UA/SCI Building
- You will pass the open Atrium - continue straight ahead to the UA/SCI East Atrium (where the Truedan Bubble Tea is)
- Take the exit on the left and head outside. Enter the next building which is BIT/UB

IMPORTANT PLACES ON CAMPUS

Founder Lot 2
Commencement Lot - Parking
South Village Residence
Dining Hall
South Wing
SCI (UA)
BIT (UB)

CONFERENCE PROGRAM

Wednesday, May 21st

4:00pm – 6:00pm	Registration and Poster Set-up (Poster Session A)	BIT Atrium
6:00pm – 6:15pm	Welcome & Opening Remarks	BIT 2080
6:15pm – 7:15pm	Keynote Speaker – Dr. Lori Ann Vallis	BIT 2080
7:15pm – 7:45pm	Pizza Reception	BIT Mezzanine & Atrium
7:45pm – 8:45pm	Poster Session A	BIT Atrium
8:45 pm – 10:00 pm	Student-Led Socialization	2200 North

OntarioTech UNIVERSITY

Thursday, May 22nd

7:30 to 8:30 am	Breakfast	South Residence Dining Hall
8:00am – 8:45am	Registration and Coffee Poster Session B setup opens	BIT Mezzanine BIT Atrium
8:45am – 9:45am	Podium Session 1	BIT 2080
9:45am – 10:00am	Coffee Break	BIT Mezzanine
10:00am – 11:00am	Podium Session 2	BIT 2080
11:00am – 11:15am	Coffee Break	BIT Mezzanine
11:15am – 12:15pm	Podium Session 3	BIT 2080
12:15pm – 1:30pm	Lunch & Learn - Workshop by HAS motion. *Workshop to start at 12:30	BIT 2080
1:30pm – 2:40pm	Industry Panel	BIT 2080
2:40pm – 2:50pm	Coffee Break	BIT Mezzanine
2:50pm – 3:50pm	Podium Session 4	BIT 2080
3:50pm – 4:00pm	Exhibitor Presentations	BIT 2080
4:00pm – 6:00pm	Laboratory Tours (ACE Climatic Wind Tunnel, Biomechanics Labs) & Free Time	Meet in BIT Atrium
6:00pm – 7:00pm	Poster Session B	BIT Atrium
7:00pm – 10:00pm	Conference Dinner & Social	South Residence Dining Hall

Friday, May 23rd

7:30am to 8:30 am	Breakfast	South Residence Dining Hall
8:30am – 9:30am	Podium Session 5	BIT 2080
9:30am – 9:40am	Coffee Break	BIT Mezzanine
9:40am – 10:40am	Podium Session 6	BIT 2080
10:40am – 10:50am	Coffee Break	BIT Mezzanine
10:50am – 11:50am	Podium Session 7	BIT 2080
11:50am – 12:00pm	Closing Remarks	BIT Mezzanine
12:00pm – 1:00pm	Faculty Future Planning Meeting	**BIT 2050**

Podium Session 1

Thursday, May 22 (8:45am-9:45am)

Business and Information Technology Building (BIT) 2080

Co-chairs: Jessa Davidson (University of Waterloo) &

Katherine Wiebe (Carleton University)

8:45am-8:55am	**Ryan Chhiba** *McMaster University*	Distributed Loads Alter Internal Finger Loading
8:55am-9:05am	**Komal Azeem** *Queen's University*	Integrating Marker-Less Motion Capture with OpenSim for Musculoskeletal Modelling
9:05am-9:15am	**Claudia Town** *University of Waterloo*	Head Kinematic Responses Following Seated Translational Perturbations
9:15am-9:25am	**Pratham Singh** *University of Toronto*	Biomechanical Assessment of a Two-Foot Vertical Jump Following Anterior Cruciate Ligament Reconstruction
9:25am-9:35am	**Gillian Slade** *Ontario Tech University*	Determining Effective Durations in Lifting and Lowering Tasks
9:35am-9:45am	**Aliza Siebenaller** *University of Guelph*	Asymmetrical Thoracic and Lumbar Paraspinal Muscle Degeneration Affect Spinal Curvature in an Unexpected Way

Podium Session 2

Thursday, May 22 (10:00am -11:00am)

Business and Information Technology Building (BIT) 2080

Co-chairs: Pratham Singh (University of Toronto) &

Kate Posluszny (University of Waterloo)

10:00am-10:10am	**Bryan Rivera Calagua** *Queen's University*	Musculoskeletal Adaptation During Gait of Highly Functional Unilateral Transtibial Amputees
10:10am-10:20am	**Stephen Boulanger** *York University*	A Comparison of Rotator Cuff Fatty Infiltration in Older Adults with And Without Shoulder Pain and Its Relationship to Function
10:20am-10:30am	**Jonathan Ying** *University of Waterloo*	Quantifying Areal Bone Mineral Density Bias of Fiberglass Cast in a Standardized Forearm Dual-Energy X-Ray Absorptiometry Protocol
10:30am-10:40am	**Tiffany Tiu** *University of Toronto*	Quadricep Activation Patterns Between Closed- And Open-Kinetic Chain Exercises
10:40am-10:50am	**Daimen Landori-Hoffmann** *Ontario Tech University*	Hero Glove Insight: Utilizing Computer Vision and Force Sensors for Object-Specific Control
10:50am-11:00am	**Jessa Davidson** *University of Waterloo*	Assessing Cumulative Changes in Lumbar Spine Stiffness Throughout A Week of Prolonged Seated Work

Podium Session 3

Thursday, May 22 (11:15am -12:15pm)

Business and Information Technology Building (BIT) 2080

Co-chairs: Aliza Siebenaller (University of Guelph) &

Ryan Foley (Ontario Tech University)

11:15am-11:25am	**Sarah Hallman** *University of Waterloo*	Comparing Minimal Detectable Changes Between Squat and Gait
11:25am-11:35am	**Jessica Wanyan** *Wilfrid Laurier University*	Understanding Balance Control in Response to Gait Perturbations In Adults with Attention Deficit Hyperactivity Disorder (Adhd)
11:35am-11:45am	**Daniel Sheffield** *York University*	Relationship Among Age, Lumbopelvic Control, Physical Activity Level, Muscle Morphology, And Extensor Muscle Endurance
11:45am-11:55am	**Sarah Hynes** *University of Waterloo*	A Data-Driven Approach to Optical Motion Capture Gap-Filling
11:55am-12:05pm	**Josh Briar** *University of Guelph*	Paraspinal Muscle Function Impairments Following Intervertebral Disc Puncture in Rat Model
12:05pm-12:15pm	**Ian Scagnetti** *University of Guelph*	Sex-Differences in Reported Discomfort During Exposure To Seated Whole-Body Vibration

Lunch & Learn - Workshop by HAS Motion

"Shaping Big Data for Biomechanical Insights"

Thursday, May 22 (12:30pm – 1:30pm)

Business and Information Technology Building (BIT) 2080

Amy Coyle, M.Eng & Sharath Nandan

Workshop Summary:

Working with big data in biomechanics requires researchers to shift their thinking about how they will process their motion capture data. The knowledge discovery process provides a structured framework for reliably extracting insights from big data and consists of five steps: gathering, cleaning, shaping, analyzing, and reporting. Out of this process the step of shaping stands out as an important but neglected part of preparing data for analysis. This workshop will focus on what it means to shape data, including how shaping data is intimately connected to the research question being asked. Working with a publicly available dataset, the presenters will illustrate how simple decisions at this step impact what comes next and demonstrate how the same data can be put into distinctly different forms according to the research question at hand. A key takeaway is that there is no wrong way to shape data, but there are ways that better support the intended analysis. The workshop will conclude with an opportunity for audience members to ask questions about shaping data specifically and the idea of big data in biomechanics more generally.

Industry Panel

Thursday, May 22 (1:30pm – 2:40pm)

Co-chairs: Justin Davidson (University of Waterloo) &

Michael Watterworth (Ontario Tech University)

1:30pm-1:45pm	**Rob Mackowiak** *MLSE Sport Performance Lab & Toronto Raptors*
1:45pm-2:00pm	**Vicki Komisar** *Codes Canada (CBHCC)*
2:00pm-2:15pm	**Adam Hess** *Advanced Mechanical Technology Inc. (AMTI)*
2:15pm-2:40pm	**Panel Discussion**

Podium Session 4

Thursday, May 22 (2:50pm -3:50pm)

Business and Information Technology Building (BIT) 2080

Co-chairs: Josh Briar (University of Guelph) &

Claudia Town (University of Waterloo)

2:50pm-3:00pm	**Hailey Tabbert** *Ontario Tech University*	Understanding The Role of Vibration Exposure in Motor Skill Training and Performance
3:00pm-3:10pm	**Dominic Zapata** *York University*	A Biomechanical Analysis of Rehabilitative Exercises For Subacromial Impingement Syndrome and/or Rotator Cuff Tears
3:10pm-3:20pm	**Jared-Isaac Friedel** *University of Waterloo*	Accumulation And Recovery of Prolonged Low-Frequency Force Depression At Different Intensities of Repetitive Isometric Contractions
3:20pm-3:30pm	**Jarrod Smith** *University of Windsor*	Torque-Angle Regression Equations for Low-Back Exoskeletons
3:30pm-3:40pm	**Molly Malette** *McMaster University*	Stair Ascent and Descent in Older Adults with and Without Support
3:40pm-3:50pm	**Erinn McCreath Frangakis** *University of Waterloo*	Are Seated Spine Kinematics Associated with Between-Day Fluctuations In Low Back Pain Scores?

Podium Session 5

Friday, May 23 (8:30am-9:30am)

Business and Information Technology Building (BIT) 2080

Co-chairs: Stephen Boulanger (York University) &

Hannah Coyle-Asbil (University of Guelph)

8:30am-8:40am	**Jake Gimmy** *McMaster University*	Evaluating The Influence of Self-Selected Versus Ergonomic Recommendation On Spinal Curvature
8:40am-8:50am	**Charlotte Gregus** *University of Guelph*	Effect Of Cutaneous Input to the Foot Sole on the Rate Of Plantar Flexor Muscle Activation
8:50am-9:00am	**Steven Taras** *Brock University*	A Novel Method for Mapping Walking Terrains
9:00am-9:10am	**Sarah Quayyum** *University of Waterloo*	Dual Energy CT for More Accurate Diagnosis and Monitoring Of Early Osteoarthritis-Related Shoulder Injuries
9:10am-9:20am	**Sharath Nandan** *HAS-Motion*	Assessing Different Kinematic Methods of Structuring Gait
9:20am-9:30am	**Umar Yousufy** *Brock University*	Comparing Center of Mass Excursion in Individuals with Varying Levels Of Anterior Reach Asymmetry

Podium Session 6

Friday, May 23 (9:40am-10:40am)

Business and Information Technology Building (BIT) 2080

Co-chairs: Daniel Sheffield (York University) &

Jarrod Smith (University of Windsor)

9:40am-9:50am	**Joanna Misquitta** *McMaster University*	Height and Sex Effects on Two-Person Team Lifting
9:50am-10:00am	**Claire Thompson** *University of Waterloo*	Development Of an Integrated Virtual Twin Lumbar Intervertebral Disc Model for a Spinal Loading Simulator
10:00am-10:10am	**Olivia Szczepanek** *University of Waterloo*	Effect Of Cashier Workstation Design on Upper Extremity Muscular Activation and Perceived Exertion
10:10am-10:20am	**Ryan Foley** *Ontario Tech University*	Comprehensive Review of Upper Limb Strength Asymmetry: Implications For Rehabilitation, Biomechanics, and Ergonomics
10:20am-10:30am	**Mahziyar Darvishi** *University of Toronto*	Influence Of Depression Elevation on Tibial Plateau Biomechanics Following Tibial Plateau Fracture Fixation
10:30am-10:40am	**Justin Davidson** *University of Waterloo*	A Field-Ready Approach for Measuring Ground Reaction Forces and Center of Pressure During Occupational Tasks

Podium Session 7

Friday, May 23 (10:50am-11:50am)

Business and Information Technology Building (BIT) 2080

Co-chairs: Olena Klahsen (University of Ottawa) &

Ryan Chhiba (McMaster University)

10:50am-11:00am	**Shaunacy Barron** *University of Guelph*	Exploring The Location Dependence of Cutaneous Reflexes in The Abductor Hallucis in Standing, With and Without Load
11:00am-11:10am	**Chloe Stiles** *University of Waterloo*	Validating Internal Density Calibration in The Proximal Humerus To Estimate Bone Stiffness for Stemless Shoulder Arthroplasty
11:10am-11:20am	**Eliza Cazzola** *University of Guelph*	Sex-Differences in Three-Dimensional Spine Angles During Seated Whole-Body Vibration Exposure
11:20am-11:30am	**Grace Collins** *University of Ottawa*	The Impact of Intravaginal Devices on Pelvic Floor Strain Among Females Who Experience Running-Induced Urinary Incontinence
11:30am-11:40am	**Emily Guzzo** *Western University*	Feasibility Of an MRI-Compatible Arthrometer for Quantifying Acl Elongation and Meniscal Deformation
11:40am-11:50am	**Taylor Tiessen** *Brock University*	Dynamic Strength Index and Countermovement Jump in Female and Male Collegiate Basketball Athletes Across a Season

POSTER SESSION A: Wednesday, May 21 (7:45pm-8:45pm)

1	**Marco Sladoje** *University of Windsor*	HOW DO HEAD IMPACTS IN YOUTH HOCKEY VARY BASED ON PLAYER POSITION, ON-ICE LOCATION, SCORE DIFFERENTIAL, AND PENALTY KILLS?
2	**Katherine Wiebe** *Carleton University*	QUANTIFIABLE MEASURES OF EYE-TRACKING AND THEIR CORRELATION WITH THE VOMS SCORE IN CONCUSSED SUBJECTS
3	**Emily Foest** *Brock University*	THE EFFECT OF KNEE BRACING ON THE BIOMECHANICS OF VOLLEYBALL-RELATED MOVEMENTS
4	**Hua-Bin Lin** *University of Waterloo*	COMPARING FRONTAL PLANE HIP AND KNEE MECHANICS BETWEEN DROP LATERAL JUMPS AND DROP VERTICAL JUMPS
5	**Hayden Hartwick** *University of Windsor*	ASSESSING DIFFERENCES IN HELMET FIT BETWEEN FEMALE AND MALE YOUTH HOCKEY PLAYERS
6	**Melanie Altamirano** *Brock University*	INVESTIGATING SEX DIFFERENCES IN FOREARM MOTOR UNIT PROPERTIES ACROSS CONTRACTION TYPE
7	**Caitlyn Baliki** *Queen's University*	THE EFFECT OF DISTRIBUTED PRACTICE ON LEARNING TO WALK WITH ROBOTIC ANKLE EXOSKELETONS
8	**Hannah Coyle-Asbil** *University of Guelph*	PREDICTING ENERGY EXPENDITURE IN PRESCHOOL CHILDREN USING ACCELEROMETER AND GYROSCOPE DATA
9	**Liam McKenna** *Brock University*	EFFECT OF REAR FOOT POSITION ON KICK START PERFORMANCE METRICS IN COMPETITIVE SWIMMERS
10	**Anastasia Sullivan** *Wilfrid Laurier University*	EFFECT OF SPINE EXTENSION ON THE ANNULUS FIBROSUS: INVESTIGATING DANCERS' RANGE OF MOTION AND ITS IMPACT ON ANNULUS INTEGRITY
11	**Paige Yoshida** *Carleton University*	USING ELECTRICAL IMPEDANCE TOMOGRAPHY AS A TOOL TO ANALYZE VENTILATION IN DIVERS
12	**Sylvia Masse** *University of Waterloo*	HOW DO JOINT CONTRIBUTIONS TO WHOLE-BODY DYNAMICS AND MUSCLE COORDINATION CHANGE ACROSS SINGLE LEG SQUAT VARIATIONS?

13	**Chiara Weinhardt** *Wilfrid Laurier University*	ANNULUS FIBROSUS STRENGTH IN AN OVINE MODEL
14	**Nolan Ford** *Ontario Tech University*	VALIDATION OF A WRIST-SUPPORTED GAMING MOUSE FOR REDUCING FOREARM STRAIN DURING FIRST-PERSON SHOOTER TASKS
15	**Evan Curd** *University of Toronto*	ELECTROMYOGRAPHY NORMALIZATION FOR GENERAL, DYNAMIC, AND SPORT SPECIFIC TASKS
16	**Hamed Tadayyoni** *Ontario Tech University*	INVESTIGATING THE EFFECTS OF PROPRIOCEPTIVE FEEDBACK IN MOTOR SKILL TRANSFER IN VR TRAINING
17	**John Li** *York University*	EXAMINING MUSCULAR FATIGUE DURING REPEATED GOLF SWINGS AND ITS RELATIONSHIP TO SKILL LEVEL
18	**Hayley Janes** *Ontario Tech University*	VALIDATING THEIA MARKERLESS SHOULDER ELEVATION ANGLES
19	**Patrick Crowley** *Wilfrid Laurier University*	CAN FOOTWEAR MODIFICATIONS IMPROVE BALANCE IN INDIVIDUALS WITH PARKINSON'S DISEASE?
20	**Dveeta Lal** *University of Toronto*	COMPARISON OF NIKE PHANTOM LUNA CLEATs VS. "STANDARD" CLEAT ON LOWER EXTREMITY KINEMATICS AND KINETICS FEMALE ATHLETES
21	**Abeer Malik** *University of Waterloo*	REFINING THE PHYSICAL LITERACY SCREEN: OPTIMIZING MOVEMENT ASSESSMENTS THROUGH VARIABLE REDUCTION
22	**Kelsie Czegeny** *Brock University*	EVALUATING THE IMPACT OF ECCENTRIC DAMAGE ON ABDOMINAL MUSCLE NEUROMUSCULAR CONTROL
23	**Ainsley Durnin** *University of Waterloo*	LUMBAR SPINE AND LOWER LIMB JOINT CONTRIBUTIONS TO WHOLE-BODY DYNAMICS DURING SINGLE-LEG LATERAL JUMPS
24	**Tiana Wertelecky** *Queen's University*	INCENTIVIZING CHANGES IN GAIT SYMMETRY USING LOWER-LIMB EXOSKELETONS THAT MODIFY ENERGETICS
25	**Juliana Bossom** *University of Waterloo*	THE EFFECTS OF LUMBAR EXTENSOR MUSCLE FATIGUE ON TRUNK NEUROMUSCULAR CONTROL DURING MEDIO-LATERAL PERTURBATIONS IN CONTACT-COLLISION ATHLETES

26	**Amr Youssef** *Queen's University*	ARE BIOMECHANICAL OUTCOMES USING QUADRICEPS TENDON GRAFT IN ANTERIOR CRUCIATE LIGAMENT SURGERY RECONSTRUCTION AS GOOD AS PATELLAR TENDON?
27	**Kate Posluszny** *University of Waterloo*	ESTIMATING COMMUNITY-BASED PERSONAL SUPPORT WORKER SPINE MOMENTS: DEVELOPING A WEARABLE TECHNOLOGY-BASED METHOD
28	**LE. Williams** *University of Waterloo*	IMPROVING JOINT COORDINATION AND MUSCLE CAPACITY UTILIZATION WITH A 16-WEEK EXERCISE PROGRAM FOR SEDENTARY ADULTS
29	**Kristen De Melo** *University of Guelph*	EFFICACY OF COGNITIVE VERSUS MOTOR + COGNITIVE TRAINING ON DUAL TASK PERFORMANCE IN VIRTUAL REALITY: IMPACT OF AGING
30	**Olivia Szczepanek** *University of Waterloo*	INVESTIGATING EFFECTIVENESS OF LANDMARKING TECHNIQUES IN YOUNG AND OLDER FEMALES OF DIFFERENT BODY COMPOSITIONS
31	**Isabella Shih** *Queen's University*	DOES PREFERRED RUNNING SPEED MINIMIZE COST OF TRANSPORT OR MAINTAIN EXERCISE INTENSITY?
32	**Quinn Mulligan** *University of Toronto*	NEUROMUSCULAR DYSFUNCTION AND ATROPHY AS FACTORS IN ANTERIOR CRUCIATE LIGAMENT REINJURY
33	**Aleena Butt** *Ontario Tech University*	COMPARING REAL-TIME JOINT ANGLES FROM AN IMU-BASED MOTION CAPTURE SYSTEM AND A DIGITAL HUMAN MODEL
34	**Olivia Yang** *University of Waterloo*	VALIDATION OF INTERNAL CALIBRATION METHODS FOR CT-BASED MUSCLE DENSITY ANALYSIS IN SHOULDER OSTEOARTHRITIS PATIENTS FOLLOWING ARTHROPLASTY
35	**Michael Watterworth** *Ontario Tech University*	USING THE ABOVE-SHOULDER TOOL TO ESTIMATE MAXIMUM ACCEPTABLE DUTY CYCLES
36	**Tzu-Ting Hsu** *Brock University*	THE POWER OF FLEX: EFFECT OF A FLEXED BOOT ON MARKERS OF SKATING EFFICIENCY IN ICE HOCKEY PLAYERS
37	**Gabrielle Collins** *Wilfrid Laurier University*	INTRALAMELLAR MATRIX STRENGTH OF THE ANNULUS FIBROSUS FOLLOWING VERTEBRAL FRACTURE

38	**Bhavna Birdi** *Wilfrid Laurier University*	INJECTING A NUCLEUS PULPOSUS HYDROGEL INTO THE INTERVERTEBRAL DISC COMBINED WITH ANNULAR CLOSURE TO ADDRESS DISC HEIGHT LOSS
39	**Alireza Karimi** *University of Waterloo*	EVALUATING THE EFFECTS OF CALISTHENICS ON NEUROMUSCULAR CONTROL AND PROPRIOCEPTION OF THE SHOULDER COMPLEX
40	**Hailey Nestor** *University of Waterloo*	USING RCRA TO ASSESS RISK FOR AN AUTOMOTIVE ELECTRICAL HARNESS INSTALLATION TASK: SENSITIVITY ANALYSIS OF RCRA INPUTS

POSTER SESSION B: Thursday, May 22 (6:00pm-7:00pm)

41	**Johannes Eichwalder** *University of Waterloo*	DEVELOPMENT OF NEXT-GENERATION SUBJECT-SPECIFIC SHOULDER FEMS USING ADVANCED EXPERIMENTAL TESTING METHODOLOGIES
42	**Mitchell Brydon** *University of Waterloo*	FOOT ORTHOTICS IN CHRONIC ANKLE INSTABILITY TREATMENT
43	**Elizabeth Pirritano** *Brock University*	CENTER OF MASS EXCURSIONS DURING BACKWARD WALKING IN CHILDREN
44	**Philip Martins** *York University*	FRACTAL PATTERNS IN GAIT WHILE NAVIGATING OBSTACLES MEASURED USING A SMARTPHONE ACCELEROMETER SYSTEM
45	**Julia De Oliveira** *University of Guelph*	TRAINING INTERVENTIONS EXPLORING COGNTIVE MOTOR DUAL TASK PERFROMANCE IN YOUNG ADULTS AND CHILDREN
46	**Benjamin Allen** *Ontario Tech University*	ARE EFFORT DURATIONS FOR AUTOMOTIVE MANUFACTURING TASKS AFFECTED BY WORKER EXPERIENCE?
47	**Jared Seick** *Brock University*	THE EFFECT OF ECCENTRIC MUSCLE DAMAGE ON THE TOPOGRAPHICAL ACTIVATION PATTERNS OF THE BICEPS BRACHII MUSCLE
48	**Sophia Nikitin** *Brock University*	INVESTIGATING MUSCLE ACTIVITY ACROSS VARYING VIOLIN STRING HEIGHTS
49	**Mackenzie Campbell** *Western University*	A NOVEL METHOD FOR IN-VIVO LUMBAR SPINE NEUTRAL ZONE QUANTIFICATION
50	**Sashen Costa** *Wilfrid Laurier University*	INFLUENCE OF INTERVERTEBRAL DISC PRESSURE ON VERTEBRAL FRACTURE MORPHOLOGY
51	**Paris Forlin** *Brock University*	EXAMINATION OF DIFFERENCES IN SELF-REPORTED PHYSICAL LITERACY BETWEEN MALE AND FEMALE CHILDREN
52	**Cameron Lang** *Brock University*	FROM DESK TO AUGMENTED REALITY: EVALUATING THE PHYSICAL DEMANDS OF COMPUTER TASKS IN AR

53	**Ian Doctor** *Brock University*	ASSESSING THE EFFECT OF INTER-ATHLETE SPATIOTEMPORAL COORDINATION ON PAIRS ROWING PERFORMANCE TIMES
54	**Meera Sayal** *Brock University*	THE INFLUENCE OF ARM POSTURE ON WRIST PROPRIOCEPTION AND HAND TACKING ABILITY: IMPICATIONS FOR ROBOTIC SURGERY
55	**Olena Klahsen** *University of Ottawa*	MAXIMUM VOLUNTARY PELVIC FLOOR MUSCLE CONTRACTIONS ARE IMPACTED BY AGE BUT NOT PARITY
56	**Julia Li** *University of Waterloo*	DETERMINING THE MAXIMUM FEASIBLE BOX DIMENSIONS AND BOX WEIGHTS FOR ONE-HANDED BOX TRANSFERS FROM VARYING HEIGHTS
57	**Jeffrey Lim** *University of Guelph*	HAND-ARM VIBRATION EXPOSURE PREDICTION USING MACHINE LEARNING
58	**Ashley Vanderhaeghe** *University of Guelph*	THE INFLUENCE OF MENTHOL AND CAMPHOR ON ANKLE PROPRIOCEPTION: A PROPOSAL
59	**Allison Penner** *Wilfrid Laurier University*	THE EFFECTIVENESS OF ROCKERED FOOTWEAR ON REDUCING FOREFOOT PLANTAR PRESSURES IN METATARSALGIA
60	**Harish Balasubramaniam** *Wilfrid Laurier University*	FOOT ORTHOTICS ON TREATING CHRONIC LOW BACK PAIN
61	**David Imeson** *University of Waterloo*	A COMPARISON OF THA TECHNIQUES ON POST-SURGICAL MUSCLE STATE
62	**Kosaran Gumarathas** *University of Toronto*	DEVELOPMENT OF A PROGRESSIVE CYCLICAL LOADING PROTOCOL TO SIMULATE CHRONIC ACL DEFICIENT PATHOLOGY: A CADAVERIC MODEL
63	**Peter Ditner** *University of Windsor*	DETERMINING KINEMATIC JOINT VARIABILITY FOR AUTOMOTIVE ASSEMBLY WORKERS
64	**Jared Hughes** *University of Guelph*	CUTANEOUS STIMULATION OF THE FOOT SOLE MAY MODULATE RATE OF TORQUE DEVELOPMENT IN FATIGUED FEMALES DURING PLANTARFLEXION
65	**Katherine Carter** *University of Windsor*	ADVANCED MASSAGE APPLICATION IN AUTOMOTIVE SEATING

66	**Ryuta Dharmaputra** *Ontario Tech University*	COMPARING DIGITAL HUMAN MODEL OUTPUTS BETWEEN SEVERAL BODY TRACKING MODALITIES IN VIRTUAL REALITY
67	**Sadie Finch** *University of Waterloo*	CAN ABDOMINAL BRACING AND HIP MOTION COACHING ACUTLEY REDUCE LUMBAR FLEXION ANGLES AND EXTENSOR MOMENTS DURING LIFTING?
68	**Isabel Evans** *Western University*	EXPLORING MAXIMAL SHOES AS A VIABLE INTERVENTION FOR MITIGATING LOW BACK PAIN DURING PROLONGED STANDING IN HEALTHCARE PROFESSIONALS
69	**Adam Rusin** *University of Waterloo*	QUANTIFYING UPPER EXTREMITY DEMAND IN HIGH AND LOW SKILL E-SPORT GAMERS DURING COMPUTER GAMES
70	**Alexandra Blandford** *University of Waterloo*	ASSESSING MOTION CAPTURE ACCURACY IN AUTODESK MAYA'S QUICK RIG: THE IMPACT OF ANTHROPOMETRIC VARIABILITY
71	**Stefania Di Leo** *University of Toronto*	FINITE ELEMENT MODELING TO SIMULATE GYMNASTICS-TYPE LOADING IN ADOLESCENT WRISTS
72	**Olivia Ruest** *University of Guelph*	THE EFFECT OF MENTHOL ON SKIN SENSITIVTY OF THE FOOT DORSUM
73	**Marcel Tesolin** *York University*	EXPOSURE EFFECTS OF BIOFEEDBACK ON QUIET STANCE
74	**Lea Gerditschke** *Trent University*	THE INFLUENCE OF FOREARM SUPPORT AND FOREARM POSTURE ON UPPER ARM MUSCLE ACTIVITY DURING ISOMETRIC WRIST CONTRACTIONS
75	**Tyler Brown** *Brock University*	VALIDATING A FORCE MEASURING GLOVE FOR USE IN DISTAL UPPER LIMB ERGONOMIC ASSESSMENT TOOLS
76	**Dylan Mun** *University of Waterloo*	INVESTIGATING THE SENSITIVITY OF LUMBAR MICROMOVEMENT ALOGORITHMS IN SITTING AND STANDING OFFICE WORK
77	**Vanessa Bechard** *University of Windsor*	A DESCRIPTIVE ANALYSIS OF TACKLING TECHNIQUES IN YOUTH FOOTBALL

78	**Laura Blackburn** *University of Guelph*	QUANTIFYING PASSIVE ELASTIC MODULUS IN ERECTOR SPINAE FIBRE BUNDLES FROM CANINES TREATED FOR INTERVERTEBRAL DISC EXTRUSION
79	**Aidan Armitage** *University of Waterloo*	ESTABLISHING THE INFLUENCE OF UPPER EXTREMITY KINEMATICS ON COMMAND ACROSS PITCH TYPES IN ELITE LEVEL BASEBALL PITCHERS
80	**Madi Hunter** *Brock University*	QUANTIFYING SPINE AND SHOULDER KINEMATICS DURING TWO PERSON PATIENT HANDLING TASKS