Matthew James Slopecki

Ph.D. Candidate / Research Assistant

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A self-driven individual (shown through management of multiple professional and academic projects) who thrives working as part of a larger, multi-disciplinary team in a fast-paced environment, reflected through work and research in elite sports science.

Skills

Isokinetic Dynamometers (Cybex, Biodex)	Excellent
3D motion capture systems (**VICON**, Cortex)	Excellent
Force plates (**AMTI**, Kistler, PASCO)	Excellent
Inertial measurement units (**Xsens Dot**, Xsens MVN, Physiolog)	Excellent
Electromyography (surface and intramuscular) systems (**Delsys Trigno**)	Excellent
Scholarship & grant application writing	Excellent
Management of academic funds	Excellent

Software

Python (PyCharm, Anaconda, Matplotlib, GUI, device I/O)	Excellent
MATLAB	Excellent
Statistical Software (**R Studio**, IBM SPSS)	Excellent
Office Suites (Microsoft, Google, Apple)	Excellent

Motion Capture (**VICON Nexus**, Cortex, Biomechzoo) — Excellent

Data Visualization (MATLAB, R, Matplotlib, Seaborn) — Excellent

Machine Learning (Keras, Tensorflow) — Good

Database (**SQL**, MySQL) — Good

Work History

2020-10 - Current

Research Assistant

Institut national du sport du Québec, Montréal, Quebec

- Converting software from MATLAB to Python.
- Data science/programming role to innovate in-house MATLAB application for athlete testing (improving UI and code integration with databases)
- Developed performance testing application **utilized by Team Canada** (Short-Track Speed Skating, Water Polo and numerous other athletes).
- Implemented **version control** using GitHub.

2020-01 - Current

Teaching Assistant

McGill University, Montréal, Canada

- **Lecturing, grading, and administration** of EDKP 444 – Ergonomics (Fall 2020); EDKP 208 – Biomechanics and Motor Control (Winter 2020).
- Recorded grades for coursework and tests in online reporting system.

2019-11 - 2020-08

Research Assistant

Institut national du sport du Québec, Montréal, Quebec

- Aided PI with **IMU data collection** for national team water polo athletes.
- **Data processing** for water polo machine learning project.

2020-01 - 2020-04

Grader

McGill University, Montréal, Canada

- **Grading assignments** for EDKP 433 – Research Methods

2017-07 - 2018-06

Biomechanics Intern

Sports Surgery Clinic, Dublin, Ireland

- 1-year Biomechanics internship in a **3D motion capture lab** focused on ACL, Groin and Shoulder rehabilitation, performance testing and research
- Tested patients, ranging from **amateur to world-class athletes**
- Experience: 350+ hours of experience using a 12-camera (**VICON**) 3d optical motion capture lab with AMTI force plates

- Extensive experience performing a range of isokinetic dynamometry tests; including knee, ankle, and shoulder movements
- Developed proficiency in processing data in VICON Nexus and MATLAB, developing novel, custom-written codes when necessary for academic research use

Education

2020-09 - Current

Ph.D.: Kinesiology Sciences

McGill University - Montreal, QC

- Received **Mitacs accelerate doctoral fellowship** 2022 - 25 (funded by Swimming Canada).
- Received **Fonds de Recherche du Québec (Santé) doctoral training scholarship** 2022 - 26.
- Awarded international fee waiver (merit based) 2021 - 22.
- Elected to Vice President of Communication for Kinesiology and Physical Education Graduate students association in 2020 - 21.
- Elected to Vice President of Academics for Kinesiology and Physical Education Graduate students association in 2021 - 22.

2019-09 - 2020-08

Master of Science: Biomechanics And Neuroscience

McGill University - Montreal, QC

- **Fast-tracked in Kinesiology Sciences Ph.D.** program after first year of M.Sc.

2015-09 - 2019-08

Bachelor of Science (Honours): Sports, Health And Exercise Sciences

Brunel University London - London, UK

- **Specialization in Human Performance**.
- Completed **1-year internship in Biomechanics** at the Sports Surgery Clinic.

Publications

Slopecki, M., Hasanbarani, F., Yang, C., Bailey, C., Côté. J. N. (Accepted). Uncontrolled manifold analysis of the effects of different fatigue locations on kinematic coordination during a repetitive upper-limb task. *Accepted for publication in Motor Control.*

Bailey, C., Hasanbarani, F., **Slopecki, M.,** Yang, C., Côté. J. N. (In Revision). Uncontrolled manifold analysis of sex and age effects during a fatiguing, repetitive upper-limb task. *In revision with Journal of Motor Behavior.*

Hasanbarani, F., Yang, C., Bailey, C. A., **Slopecki, M.,** & Cote, J. N. (2021). Sex-specific effects of a repetitive fatiguing task on stability: Analysis with Motor Equivalence model. *Journal of Biomechanics*, 110769. https://doi.org/https://doi.org/10.1016/j.jbiomech.2021.11076

Slopecki, M., Messing, K., & Côté, J. N. (2020). Is sex a proxy for mechanical variables during an upper limb repetitive movement task? An investigation of the effects of sex and of anthropometric load on muscle fatigue. *Biology of sex differences*, *11*(1). https://doi.org/10.1186/s13293-020-00336-1

Publications (In Progress)

Slopecki, M., Fanning, C., Daniels, K., (In Progress). Biomechanical upper-extremity joint position sense tests in collision and contact athletes. No journal/anticipated submission date currently.

Conference and Symposium Oral Presentations

Slopecki, M. (2022) *The effect of different fatigue locations on repetitive pointing task performance: What novel information can we gain from uncontrolled manifold analyses?* Oral presentation (15 minutes) at the International Society of Electrophysiology and Kinesiology 2022 Congress, Quebec City, Canada.

Slopecki, M., Hasanbarani, F., Bailey, C., Yang, C., Côté. J. N. (2021). *Uncontrolled manifold analysis of effects of different fatigue locations on coordination during a repetitive pointing task.* Oral presentation (10 minutes) at the 12th Symposium on Motor Control at the 28th Congress of the International Society of Biomechanics, Stockholm, Sweden (Online).

Bailey, C., Hasanbarani, F., **Slopecki, M.,** Yang, C., Côté. J. N. (2021). *Size and structure of joint angle variability in young and old adults performing a fatiguing repetitive reaching task*. Oral presentation at 28th Congress of the International Society of Biomechanics, Stockholm, Sweden (Online).

Slopecki, M. (2021). *Motor Variability of the Shoulder: Advanced Metrics*. Oral presentation (10 minutes) at the 1st Virtual Symposium on Upper Limb Fatigue. Montreal, Canada (Online).

Conference Poster Presentations

Hasanbarani, F., Yang, C., Bailey, C., **Slopecki, M.,** Côté. J. N. (2021). *Sex differences and fatiguing movement effects on task-specific stability.* Poster presented at 28th Congress of the International Society of Biomechanics, Stockholm, Sweden (Online).

Slopecki, M., Côté. J. N. (2021). *Conventional measures overestimate sex differences in kinematics during fatiguing upper-limb repetitive pointing.* Poster presented at 21st Biennial Meeting of Canadian Society of Biomechanics, Montreal, Canada (Online). http://dx.doi.org/10.13140/RG.2.2.29974.27204

Slopecki, M., Côté. J. N. (2020). *Interaction effect of anthropometric load and sex on the progression of fatigue during an upper limb repetitive movement task.* Poster accepted for presentation to 11th

Annual International Conference of Applied Human Factors and Ergonomics (Online), San Diego, USA.

Slopecki, M., Daniels, K., Fanning, E., Falvey, E. (2018, September). *The role of torque in shoulder joint position sense*. Poster presented at Royal College of Surgeons Ireland – Return to Play: The Shoulder, Dublin, Ireland. http://dx.doi.org/10.13140/RG.2.2.20175.82083

Other Presentations

- Prospective Student Webinar (McGill University – Department of Kinesiology and Physical Education) (11/2021)
- Student Perspectives Panel (McGill University - Research Methods EDKP 605) (11/2021)
- Continuous Relative Phase: Introductory Lecture (Brunel University London - Biomechanics of Human Movement SP2801) (11/2021)
- Biomechanics in Ergonomics Lecture (McGill University - Ergonomics EDKP 444) (11/2020)
- Linear and Angular Kinematics (McGill University – Motor Control EDKP 208) (11/2020)
- Center for Interdisciplinary Research in Rehabilitation – Talking Research series: "Is sex a proxy for anthropometric variables during fatiguing, upper-limb repetitive movement: What researchers and clinicians should know" (10/2020)

Accomplishments

Academic Funding

Fellowships and Scholarships:

- Mitacs Accelerate Doctoral Fellowship – 2022-2025
- Fonds de Recherche Québec (Santé) – Doctoral Training Scholarship 2022-2026
- Canadian Institutes of Health Research (CIHR) Team for Gender Considerations in Knowledge Transfer Interventions – Scholarship For Knowledge Sharing 2020

Awards:

- MSK Network Conference Travel Award 2022
- CSB Conference Travel Award 2022
- McGill University GREAT Travel Award 2022
- Canadian Society of Biomechanics (CSB) NACOB Travel Award 2022
- McGill University Department of Education Graduate Student Society (EGSS) – Professional and Research Development Award 2021
- International Society of Biomechanics Motor Control Group – ISB Sponsored Motor Control Group Student Award 2021
- International Society of Biomechanics (ISB) – International Travel Grant 2021
- McGill University Department of Kinesiology and Physical Education – Differential Fee Waiver 2021-22
- McGill University Graduate & Postdoctoral Studies – Virtual Mobility Award 2021
- McGill University Postgraduate Students Society Travel Award 2021
- Mitacs GlobalLink Research Award Abroad 2021 (Declined due to COVID-19 pandemic)
- McGill University Graduate Excellence Award 2020 – 2022

- McGill University Graduate Excellence Award 2020
- McGill University GREAT Travel Award 2020
- REPAR Travel Award - Support for Students for Presentation in Scientific Events 2019-2020
- McGill University Department of Kinesiology and Physical Education Recruitment Award 2019 - 2020

Stipends (Received: $57,300| Declined: $14,000):

- Research Stipend from Dr. Julie N. Côté's Natural Sciences and Engineering Research Council of Canada Grant 2022 - 2023 (Declined due to external funding)
- Research Stipend from Dr. Julie N. Côté's Natural Sciences and Engineering Research Council of Canada Grant 2021 - 2022
- Research Stipend from Dr. Julie N. Côté's McGill Sports Science Research Grant 2020 - 2021
- Research Stipend from Dr. Julie N. Côté's Natural Sciences and Engineering Research Council of Canada Grant 2020 – 2021
- Research Stipend from Dr. Julie N. Côté's Natural Sciences and Engineering Research Council of Canada Grant 2019-2020

Service Experience

- **Independent reviewer** for Applied Ergonomics, Current Research in Physiology, Kinesiology
- **Conference organizing committee member** - Minds in Motion 2022 (Department of Kinesiology and Physical Education, McGill University)

Mentorship

- Undergraduate Students: **16-week summer internship** in BOS laboratory. Funded by **NSERC USRA** program

Affiliations

- **International Society of Biomechanics in Sports (Student Member)** – 01/2022 - Present
- **Sport Scientist Canada (Student Member)** – 02/2021 - Present
- **International Society of Biomechanics (Student Member)** - 12/2020 – Present
- **Quebec Rehabilitation Research Network (Student Member)** - 09/2019 – Present
- **Center for Interdisciplinary Research in Rehabilitation (Student Member)** - 12/2019 – Present
- **Canadian Institutes of Health Research - MSK Network (Student Member)** - 12/2019 – Present