**Nigel Kurgan**

**Phone: (905) 980-1204 E-mail: nigel.kurgan@brocku.ca**

**EDUCATION**

**Ph.D. – Health Biosciences,****Brock University, ON, Canada, 2022**

* **Conferred June 2022 with Distinction and a Graduate Student Research Excellence Award**
* **Natural Sciences and Engineering Research Council of Canada (NSERC) (2017-20) & Queen Elizabeth II Graduate Scholarship in Science and Technology (GEII-GSST) (2020-21) Funded**
* Thesis: Sclerostin influences body composition adaptations to exercise training
  + Supervisor: Dr. Panagiota Klentrou

**M.Sc. – Kinesiology, Brock University, ON, Canada, 2017**

* **Ontario Graduate Scholarship (2016-17) funded**
* Thesis: Physical training, inflammation, and bone integrity in elite female rowers
  + Supervisor: Dr. Panagiota Klentrou

**B.Sc.** **– Biomedical Sciences, Honours**, **Brock University, 2015**

* **Conferred June 2015 with First-Class Standing**
* Thesis: Mitochondrial function and phospholipid composition changes in *mdx* mice skeletal muscle
  + Supervisor: Dr. Paul J. LeBlanc

**ACADEMIC AWARDS & SCHOLARSHIPS**

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| ***Award Name*** | ***Type*** | ***Amount (CAD$)*** | ***Date*** |
| **NSERC Post Doctoral Fellowship** | International | 90,000 | 2023-25 |
| **Distinguished Graduate Student** | Institutional | 100 | 2022 |
| **CSEP Graduate Student Oral Presentation Finalist** | Research | 250 | 2021 |
| **QEII Graduate Scholarship in Science and Technology** | Provincial | 15,000 | 2020-21 |
| **Jack M Miller Excellence in Research** | Institutional | 1,341 | 2020 |
| **NSERC Postgraduate Scholarship – Doctoral** | National | 63,000 | 2017-19 |
| **Dean of Graduate Studies Excellence Scholarship** | Institutional | 21,000 | 2017-19 |
| **Dean of Graduate Studies Entrance Scholarship** | Institutional | 2,000 | 2017 |
| **Ontario Graduate Scholarship** | Provincial | 15,000 | 2016-17 |
| **Dean of Graduate Studies Excellence Scholarship** | Institutional | 2,500 | 2016-17 |
| **CSEP Poster Award Finalist** | Research | 0 | 2016 |
| **Dean of Graduate Studies Spring Research Fellowship** | Institutional | 4,000 | 2016 |
| **Dean of Graduate Studies Entrance Scholarship** | Institutional | 2,500 | 2015-16 |
| **Graduate Studies Fellowship** | Institutional | 7,000 | 2015 |
| **Dean’s Honour List** | Institutional | 0 | 2012-15 |
| **Brock Returning Scholars Award** | Institutional | 1,500 | 2012-14 |
| **Brock Entrance Scholars Award** | Institutional | 2,500 | 2010 |

**LIST OF PUBLICATIONS**

*A. Published or in press*

1. Copeland EN, Whitley KC, Watson CJF, Baranowski BJ, **Kurgan N**, MacNeil AJ, MacPherson REK, Fajardo VA, Allison DJ. Kynurenine metabolism is altered in mdx mice: A potential muscle to brain connection. Exp Physiol. 2022 Aug 1. doi: 10.1113/EP090381. Epub ahead of print.
2. Prowting JL, Skelly LE, **Kurgan N**, Fraschetti EC, Klentrou P, Josse AR. Acute Effects of Milk vs Carbohydrate on Bone Turnover Biomarkers following Loading Exercise in Young Adult Females. Frontiers in Nutrition. Accepted April 29th, 2022. doi: 10.3389/fnut.2022.840973
3. Guzman A, **Kurgan N**, Moniz SC, Sale C, Logan-Sprenger H, Elliott-Sale K, Hazell TJ, Klentrou P. Menstrual Cycle Related Fluctuations in Circulating Markers of Bone Metabolism at Rest and in Response to Running in Eumenorrheic Females. Calcified Tissue International. Accepted April, 2022. doi: 10.1007/s00223-022-00970-4
4. **Kurgan N**, Islam H, Baranowski B, Stoikos J, VA Fajardo, MacPherson REK, Gurd B, Klentrou P. Subcutaneous adipose tissue sclerostin is reduced and Wnt signalling is enhanced following 4-weeks of sprint interval training in young men with obesity. Physiological Reports. doi: 10.14814/phy2.15232.
5. McKinlay BJ, Wallace PJ, Olansky S, Woods S, **Kurgan N**, Roy B, Josse AR, Falk B, Klentrou P. Intensified Training in Adolescent Female Athletes: A Cross-Over Study of Greek Yogurt Effects on Indices of Recovery. Journal of the International Society of Sports Nutrition. 2022 Mar. 19(1): 17-33. doi: 10.1080/15502783.2022.2044732
6. Klentrou P, McKee K, McKinlay BJ, **Kurgan N**, Roy BD, Falk B. Circulating Levels of Bone Markers after Short-Term Intense Training with Increased Dairy Consumption in Adolescent Female Athletes. Children (Basel). 2021 Oct; 8(11): 961. doi: 10.3390/children8110961.
7. Papadopoulos E, Gillen J, Moore D, Au D, **Kurgan N**, Klentrou P, Finelli A, Alibhai SMH, Santa Mina D. High-intensity interval training or resistance training versus usual care in men with prostate cancer on active surveillance: a 3-arm feasibility randomized controlled trial. Applied Physiology Nutrition and Metabolism. 2021 Dec;46(12): 1535-1544. doi: 10.1139/apnm-2021-0365.
8. Beigpoor A, McKinlay BJ, **Kurgan N**, Plyley MJ, O'Leary D, Falk B, Klentrou P. Cytokine concentrations in saliva vs. plasma at rest and in response to intense exercise in adolescent athletes. Annals of Human Biology. 2021 Aug; 48(5): 389-392. doi: 10.1080/03014460.2021.1980105.
9. Skelly LE, Barbour-Tuck EN, **Kurgan N**, Calleja M, Klentrou P, Falk B, Josse AR. Neutral Effect of Increased Dairy Product Intake, as Part of a Lifestyle Modification Program, on Cardiometabolic Health in Adolescent Girls With Overweight/Obesity: A Secondary Analysis From a Randomized Controlled Trial. Frontiers in Nutrition. 2021 May; 8:673589. doi: 10.3389/fnut.2021.673589.

*A. Published or in press (Continued)*

1. **Kurgan N**, McKee K, Calleja M, Josse AR, Klentrou P. Cytokines, Adipokines, and Bone Markers at Rest and in Response to Plyometric Exercise in Obese vs Normal Weight Adolescent Females. Frontiers in Endocrinology (Lausanne). 2020 Dec; 11:531926. doi: 10.3389/fendo.2020.531926
2. McKinlay BJ, Theocharidis A, Adebero T, **Kurgan N**, Fajardo VA, Roy BD, Josse AR, M Logan-Sprenger H, Falk B, Klentrou P. Effects of Post-Exercise Whey Protein Consumption on Recovery Indices in Adolescent Swimmers. International Journal of Environmental Research and Public Health. 2020 Oct; 17(21): 7761. doi: 10.3390/ijerph17217761
3. Hamstra SI, Whitley KC, Baranowski RW, **Kurgan N**, Braun JL, Messner HN, Fajardo VA. The role of phospholamban and GSK3 in regulating rodent cardiac SERCA function. American Journal of Physiology-Cell Physiology. 2020 Oct; 319(4): C694-C699. doi: 10.1152/ajpcell.00318.2020.
4. Hamstra SI, **Kurgan N**, Baranowski RW, Qiu L, Watson CJF, Messner HN, MacPherson REK, MacNeil AJ, Roy BD, Fajardo VA. Low-dose lithium feeding increases the SERCA2a-to-phospholamban ratio, improving SERCA function in murine left ventricles. Experimental Physiology. 2020 Apr; 105(4):666-675. doi: 10.1113/EP088061
5. **Kurgan N**, Whitley KC, Maddalena LA, Moradi F, Stoikos J, Hamstra SI, Rubie EA, Kumar M, Roy BD, Woodgett JR, Stuart JA, Fajardo VA. A Low-Therapeutic Dose of Lithium Inhibits GSK3 and Enhances Myoblast Fusion in C2C12 Cells. Cells. 2019 Oct; 8(11):1340. doi: 10.3390/cells8111340.
6. **Kurgan N**, Noaman N, Pergande MR, Cologna SM, Coorssen JR, Klentrou P. Changes to the Human Serum Proteome in Response to High Intensity Interval Exercise: A Sequential Top-Down Proteomic Analysis. Frontiers in Physiology. 2019 Apr; 10(362). doi: 10.3389/fphys.209.00362.
7. **Kurgan N**, Bott KN, Helmeczi WE, Roy BD, Brindle ID, Klentrou P, Fajardo VA. Low dose lithium supplementation activates Wnt/β-catenin signalling and increases bone OPG/RANKL ratio in mice. Biochemical and Biophysical Research Communications. 2019 Apr; 511(2):394-397. doi: 10.1016/j.bbrc.2019.02.066.
8. Kouvelioti R, **Kurgan N**, Falk B, Ward WE, Josse AR, Klentrou P. Cytokine and Sclerostin Response to High-Intensity Interval Running versus Cycling. Medicine & Science in Sports & Exercise. 2019 Dec; 51(12): 2458-2464. doi: 10.1249/MSS.0000000000002076. Used as the cover of the issue.
9. Kouvelioti R, **Kurgan N**, Falk B, Ward WE, Josse AR, Klentrou P. Response of Sclerostin and Bone Turnover Markers to High Intensity Interval Exercise in Young Women: Does Impact Matter? Biomedical Research International. 2018 Nov; doi: 10.1155/2018/4864952.
10. Klentrou P, Angrish K, Awadia N, **Kurgan N**, Kouvelioti R, Falk B. Wnt Signaling-Related Osteokines at Rest and Following Plyometric Exercise in Prepubertal and Early Pubertal Boys and Girls. Pediatric Exercise Science. 2018 Nov; 30(4): p. 457-65.

*A. Published or in press (Continued)*

1. **Kurgan N**, Logan-Sprenger HM, Falk B, Klentrou P. Bone and Inflammatory Responses to Training in Female Rowers over an Olympic Year. Medicine & Science in Sports & Exercise. 2018 Sep; 50(9): p. 1810-17. Used as the cover of the issue; also featured in Time Magazine, Men's Health, and other prominent fitness magazines.
2. Dekker J, Nelson K, **Kurgan N**, B Falk, Josse AR, Klentrou P. Wnt Signaling-Related Osteokines and Transforming Growth Factors Before and After a Single Bout of Plyometric Exercise in Child and Adolescent Females. Pediatric Exercise Science. 2017 Nov; 29(4): p. 504-12.
3. **Kurgan N**, Tsakiridis E, Kouvelioti R, Moore J, Klentrou P, Tsiani E. Inhibition of Human Lung Cancer Cell Proliferation and Survival by Post- Exercise Serum Is Associated with the Inhibition of Akt, mTOR, p70 S6K, and Erk1/2. Cancers (Basel). 2017 May; 9(5): pii. E46. Used as the cover of the issue.

*B. In Review and Pre-Prints*

1. **Kurgan N**, Skelly LE, Ludwa I, Klentrou P, Josse A. Twelve weeks of a diet and exercise intervention that reduces fat mass improves the bone response to acute exercise in adolescent females with overweight/obesity. Bone. Submitted April 17, 2022
2. **Kurgan N**, Baranowski B, Stoikos J, AJ MacNeil, VA Fajardo, MacPherson REK, Klentrou P. Characterization of sclerostin’s response within white adipose tissue to an obesogenic diet at rest and in response to acute exercise in male mice. Physiological Reports*.* 2022 Feb; Manuscript ID: PHY2-2022-02-0067.
3. **Kurgan N**, Stoikos J, Baranowski B, Yumol J, Dhaliwal, R, Sweezey-Munroe JB, Gittings W, Fajardo VA, MacPherson REK, Klentrou P. Sclerostin influences exercise-induced adaptations in energy expenditure and body composition in male mice. bioRxiv 2022.06.29.498123; doi: https://doi.org/10.1101/2022.06.29.498123

**KNOWN METHODOLOGIES AND TECHNIQUES**

* + - Kinetic protein assays (e.g., creatine kinase, citrate synthase, and GSK3b)
    - Immunoblotting
    - Co-immunoprecipitation
    - Enzyme-linked immunosorbent assays
    - Accredited certificates in blood collection (cardiac puncture), mouse handling and injections (s.c. and i.p.), rodent anesthesia and analgesia, and rodent euthanasia from the Canadian Council of Animal Care and Use of Experimental Animals
    - Extensive experience in running exercise and dietary interventions in humans and mice
    - Mouse dissection (cardiac puncture, adipose tissue depots, muscle (e.g., EDL, soleus, tricep), heart, and liver)
    - Insulin tolerance testing
    - Muscle fiber typing
    - Adipose tissue histology
    - Cell culture (cell lines: C2C12, A549, H460, H1299, and MRC5)
    - Myoblast fusion, cell proliferation assays, cell survival assays
    - Subsarcolemmal mitochondrial isolations

**KNOWN METHODOLOGIES AND TECHNIQUES (CONTINUED)**

* + - Mitochondrial respiration (Clark-type electrode)
    - Metabolic cart (humans) and caging (mice)
    - Body composition (Humans: BIA or air displacement plethysmograph. Small animals: DXA)
    - Bead-based multiplex fluorescent assays
    - Human Phlebotomy
    - Muscle ultrasound (cross-sectional area)
    - Extracellular vesicle isolation (ultracentrifugation, density-based, and size exclusion chromatography)
    - Extracellular vesicle imaging (SEM) and nanoparticle tracking for size and quantity (Nanosight)
    - Sample preparation for LC-MS/MS (protein extraction, clean up, in-gel sample trypsin digestion)
    - Top-down proteomics workflow (2D gel electrophoresis 🡪 in-gel digestion 🡪 imaging 🡪LC-MS/MS)
    - Proficient in Luminex and Bioplex manager software
    - Proficient in ImageJ (histology) and Image lab (densitometry)
    - Proficient in SPSS, GraphPad Prism, and currently learning RStudio.

**WORK EXPERIENCE**

*Instructor*

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| KINE 2P09 – Human Physiology, *Brock University*  Responsible for the syllabus, lecturing, and designing testing material  Halfway I had to adapt and conduct the course virtually because of the pandemic | Jan-Apr 2020 |

*Guest Lectures and Invited Talks*

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| Keynote Speaker at Brock University’s ‘FAHSiology’ conference  HLSC 4P98 – Proteomics and Exercise Adaptations (x4), *Brock University*  GERO 5P88 – Mechanisms of Age-Related Bone loss, *Brock University*  KINE 2P97 – GSK3 Signaling in Health & Disease (x4), *Brock University*  KINE 1P90 – Gas Exchange and Transport (x4), *Brock University*  KINE 1P90 – The Blood and its Constituents (x4), *Brock University*  HSLC 2P09 – Ion Channels and Action Potentials (x2), *Brock University* | Feb 2021  Oct 2018-21  July 2020  Sept 2017-20  July 2017-20  July 2017-20  Mar 2017&18 |

*Teaching Assistant*

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| KINE 2P09 – Human Physiology, *Brock University*  KINE 2P97 – Exercise Metabolism, *Brock University*  GERO 5P88 – The Process of Aging, *Brock University*  KINE 1P98 – Musculoskeletal Anatomy, *Brock University*  KINE 1P90 – Human Anatomy and Physiology, *Brock University*  HLSC 1F90 – Introduction to Health Sciences, *Brock University* | Sep 2021-Dec 2021 &  Sep 2020-Dec 2020  Jan 2021-April 2021  July-Sep 2020  Sep 2018-Dec 2019  Apr-Jun 2017 & 2018  Sep 2016-Apr 2018 |

*Lab Demonstrator*

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| AHSC 7P96 – Top-Down Proteomics, *Brock University*  HLSC 4P95 – Human Pathology, *Brock University*  HLSC 3P02 – Introduction to Human Immunology, *Brock University* | Jan-Apr 2020  Jan-Apr 2016  Sep-Dec 2015 |

**CONTRIBUTIONS TO RESEARCH & DEVELOPMENT**

*Research Assistant*

|  |  |
| --- | --- |
| Top-down proteomic analysis, method development and teaching (Brock University, Biology)  Blood and saliva collection and analysis from professional female athletes (Canadian Sports Institute of Ontario)  Peer support for physical activity in special populations (Brock University, Kinesiology)  Mitochondrial isolations and respiration (Brock University, Biology) | 2017-20  2016  2011-15  2014-15 |

*Journal Peer Reviewing*

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| Computational and Structural Biotechnology Journal (2)  Archives of Physiology and Biochemistry (1)  Physiological Reports (1) | 2020-Present |

*Conference Planning*

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| 2021 Brock University’s Muscle Health and Education Forum  Link: <https://brocku.ca/bone-and-muscle-health/events/mhef-2021/> | 2021 |

*Conference Symposia Chair*

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| Free Communication chair – Health Science and Biotechnology, Mapping the New Knowledges Meeting  Sessional Chair – Powerhouse Physiology, Ontario Exercise Physiology Conference  Chair and Master of Ceremony – Brock’s Math and Science Undergraduate Research Conference | | | 2018-20  2017  2015 |
|  | |  |  | | |

**CONFERENCE PUBLICATIONS**

*A. Peer-reviewed abstracts*

1. **Kurgan N**, Stoikos J, Baranowski BJ, Dhaliwal R, Sweezey-Munroe JB, Fajardo VA, MacPherson REK, Klentrou P. Sclerostin regulates exercise-induced adaptations in energy expenditure and body composition in C57BL/6J mice. *APNM*, 46 (2021). **Graduate Student Oral Award Finalist.**
2. Prowting JL, Skelly LE, **Kurgan N**, Klentrou P, and Josse AR. Acute Effects of Milk vs Carbohydrate on Bone Turnover Biomarkers following Exercise in Young Adult Females. *APNM*, 46 (2021). **Poster Presentation.**
3. KlentrouP, Theocharidis A, McKinlayB, VlachopoulosD, KouveliotiR, **Kurgan N**, Falk B.Effects of Post-Exercise Protein Supplementation on Bone Turnover in Adolescent Swimmers. *ECSS* (2020). **Oral Presentation.**
4. Barbour-Tuck EN, Skelly LE, **Kurgan N**, Klentrou P, Josse AR. A lifestyle modification program including higher dairy product intake and exercise is associated with improvements in global cardiometabolic risk in adolescent girls with overweight/obesity. *CNS* (2020). **Poster Presentation.**
5. Hamstra SI, **Kurgan N**, Baranowski R, Qiu L, Watson CJF, Messner H, MacNeil AJ, Roy BD, Fajardo VA. Low dose lithium feeding improves murine left ventricular SERCA function by regulating SERCA2a and phospholamban expression. CSEP, Kelowna, BC. Published in *APNM*, 44 (2019). **Oral Presentation.**
6. **Kurgan N**, Maddalena LA, Roy BD, Stuart JA, Fajardo VA. Low therapeutic and sub-therapeutic doses of lithium enhance calcineurin signalling and myoblast fusion in C2C12 cells. CSEP, Niagara Falls, ON. Published in *APNM*, 43 (2018). **Poster Presentation.**

*A. Peer-reviewed abstracts (continued)*

1. **Kurgan N**, Noaman N, Coorssen JR, Klentrou P. Sequential top-down analysis of the human serum proteome in response to high intensity exercise and recovery. CSEP, Niagara Falls, ON. Published in *APNM*, 43 (2018). **Oral Presentation.**
2. **Kurgan N**, B Falk, P Klentrou. Effect of plyometric exercise on Wnt related osteokines in boys and girls. CSEP, Winnipeg, MB. Published in *APNM*, 42 (2017). **Oral Presentation.**
3. Nelson K, **Kurgan N**, Root Z, Adebero T, Falk B, Klentrou P. The effect of plyometric exercise on serum osteokines in younger and older women. CSEP, Winnipeg, MB. Published in *APNM*, 42 (2017). **Oral Presentation.**
4. **Kurgan N**, Pepper C, Logan-Sprenger H, Falk B, and Klentrou P. Changes in Osteoprotegerin and Sclerostin Across a Training Season in Olympic Female Rowers. EB, Chicago, IL. Published in *FASEBJ*, 31 (2017). **Poster Presentation.**
5. **Kurgan N**, Tsakiridis E, Kouvelioti R, Moore J, Klentrou P, Tsiani E. Inhibition of Human Lung Cancer Cell Proliferation and Survival by Post-Exercise Serum Is Associated with the Inhibition of Akt, mTOR, and Erk1/2. CSEP, Victoria, BC. Published in *APNM*, 41 (2016). **Graduate Student Poster Award Finalist.**

*B. Non-peer-reviewed abstracts*

1. **Kurgan N**, Skelly LE, Ludwa LA, Klentrou P, and Josse AR. Do exercise training and dairy consumption influence the acute bone response in adolescent females with overweight/obesity? *Proceedings of 18th IBEC –* Hosted by York University, Toronto Canada (2022). **Poster Presentation.**
2. Fraschetti EC, Prowting JL, Skelly LE, **Kurgan N**, Klentrou P, and Josse AR. The Relationship between Inflammatory and Bone Biomarker Responses following Acute High-impact Exercise. *Proceedings of 18th IBEC –* Hosted by York University, Toronto Canada (2022).**Poster Presentation.**
3. **Kurgan N**, N Noaman, M Pergande, SM Cologna, JR Coorssen, P Klentrou. An anti-inflammatory phenotype following high intensity interval exercise: a sequential top-down proteomic analysis of human serum. *Proceedings of ‘Cell’ - Exercise Metabolism Conference*, Sitges, Spain (2019). **Poster Presentation.**
4. **Kurgan N**, Logan-Sprenger H, Falk B, Klentrou P. Sclerostin and Osteoprotegerin response to fluctuations in training volume in elite female rowers. Ontario Exercise Physiology Conference, Barrie, ON, Canada (2017). **Oral Presentation.**
5. **Kurgan N**, Pepper C. Logan-Sprenger H, Falk B, Klentrou P. Overtraining in elite female endurance sport and bone metabolism. *Proceedings of the 2016 Exercise is Medicine Conference.* Western University ON, Canada (2016). **Oral Presentation.**
6. **Kurgan N**, Logan-Sprenger H, Falk B, Klentrou P. Cytokine and bone turnover response to fluctuations in training load in elite female rowers. *Proceedings of* *Mapping the New Knowledges.* Brock University, St. Catharines ON, Canada (2016). **Oral Presentation.**
7. **Kurgan N**, Logan-Sprenger H, Falk B, Klentrou P. The effect of training for a year on cytokine response and bone health in the Canadian Olympic rowing team. *Proceedings of Ontario Exercise Physiology.* Barrie ON, Canada (2016). **Oral Presentation.**