Sara Oikawa, Ph.D.

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Current Position

July 2022 - Present
Associate Principal Scientist- Research and Development
Gatorade Sports Science Institute, PepsiCo Inc.
700 Anderson Hill Rd, NY, USA 10577
Versatile health scientist experienced in research and development in industry, clinical, consulting, and academic settings. Lead of the claims program for the Gatorade Sports Science Institute in support of the Gatorade Performance Portfolio. Lead of the Gatorade Sports Science Institute External Research Program. Direct experience providing support for nutrition claims and strategy, clinical research project design and implementation, team leadership and matrixed project management, written and oral communication, and external engagement with business, trade, and academic collaborations.

Education

September 2015 – July 2019
Ph.D. Science, Kinesiology
Thesis: The role of protein quality and physical activity in skeletal muscle protein turnover in older adults. Supervisor: S.M. Phillips
McMaster University, Hamilton, ON, Canada

September 2013 - July 2015
Master of Science, Kinesiology
Thesis: Resistance training load mediated muscle hypertrophy. Supervisor: S.M. Phillips
McMaster University, Hamilton, ON, Canada

September 2008 - April 2012
Honours Bachelor of Science Kinesiology
McMaster University, Hamilton, ON, Canada

Awards

2019	Canadian Society for Exercise Physiology Graduate Student Award Oral Finalist
2019	European College of Sport Science Congress Young Investigator Award Finalist
2019	Gatorade Sports Science Institute Young Scholar Travel award
2018 - 2019	McMaster Graduate Student Association Leadership Service Award
2018 - 2019	Ontario Graduate Scholarship- Louis Hotz
2018	Yates Travel Award
2017 - 2018	Ontario Graduate Scholarship - Louis Hotz
2017	CIHR Travel Award- Summer Program in Aging
2016 - 2017	Ontario Graduate Scholarship - The Great West Life Assurance Company
2015	Joan Heimbecker Memorial Bursary
2012	Mary E. Keyes Citizenship Award

Certifications

Tri-council Policy Statement (TCPS) Core 2, Government of Canada 01/11/2016
Certificate of Phlebotomy Theory and Practicum 15/06/2017
MacPherson Institute: Teaching and Learning Foundations Certificate 01/18/2019
Reebok Cycling Instructor Certification 09/28/2009

SKILLS

Languages

Fluent in English (Native) and French (written and spoken)

Laboratory and Practical Skills

Human phlebotomy
Western blotting
Bioelectrical impedance
Biodex dynamometer testing
BodPod™ composition testing
Exercise performance testing
$\dot{V}O_2$ max testing
Single muscle fibre force analysis
Enzymatic assays
Muscle function and balance testing
Human muscle biopsy procedures
Skeletal muscle histochemistry
Dietary analyses
Tracer infusion protocols
GCMS analysis
OGTT administration

Publications

Peer Reviewed Articles

1. Davis JK, **Oikawa SY**, Halson S, Stephens J, O'Riordan S, Luhrs K, Sopena B, Baker LB (2021). In-Season Nutrition Strategies and Recovery Modalities to Enhance Recovery for Basketball Players: A Narrative Review. *Sports Medicine*. pp.1-23.

2. **Oikawa SY**, Brisbois TD, van Loon LJ, Rollo I (2021). Eat like an athlete: insights of sports nutrition science to support active aging in healthy older adults. *GeroScience*, 1-11.
3. Vann CG, Morton RW, Mobley CB, Vechetti IJ, Ferguson BK, Haun CT, Osburn SC, Sexton CL, Fox CD, Romero MA, Roberson PA, **Oikawa SY**, McGlory C, Young KC, McCarthy JJ, Phillips SM, Roberts MD (2021). An intron variant of the GLI family zinc finger 3 (GLI3) gene differentiates resistance training-induced muscle fiber hypertrophy in younger men. *The FASEB Journal*. 35(5) :e21587.

4. Dunford EC, Valentino SE, Dubberley J, **Oikawa SY**, McGlory C, Lonn EM, Jung ME, Gibala MJ, Phillips SM, Macdonald MJ. (2021) Brief vigorous stair climbing effectively improves cardiorespiratory fitness in patients with coronary artery disease: a randomized trial. *Frontiers in Sports and Active Living*. 3(26).

5. Stokes TJ, Tripp TR, Murphy KM, Morton RW, **Oikawa SY**, Choi HL, McGrath J, McGlory C, MacDonald MJ, Phillips SM. (2021) Methodological considerations for an validation of the ultrasonographic determination of human skeletal muscle hypertrophy and atrophy. *Physiological Reports*, 9(1), p. e14683.

6. Lim C, Dunford EC, Valentino SE, **Oikawa SY**, McGlory C, Bakers SK, MacDonald MJ, Phillips SM. (2020) Both traditional and stair climbing-based HIIT cardiac rehabilitation induce beneficial muscle adaptations. *Medicine and Science in Sports and Exercise.* [Epub ahead of print]

7. Stokes TJ, Timmons JA, Crossland H, Tripp TR, Murphy KM, McGlory C, Mitchell CJ, **Oikawa SY,** Morton RW, Phillips BE, Baker SK, Atherton PJ, Wahlestedt C, Phillips SM. (2020) Molecular transducers of human skeletal muscle remodeling under different loading states. *Cell Reports*. 32(5), p. 107980.

8. **Oikawa SY**, Bahniwal R, Holloway TM, Lim C, McLeod JC, McGlory C, Baker S, Phillips SM. (2020) Potato Protein Isolate Stimulates Muscle Protein Synthesis at Rest and with Resistance Exercise in Young Women. *Nutrients*. 12, 1235.

9. Au JS, Shenouda N, **Oikawa SY**, Gillen JB, Morton RW, Gibala MJ, Phillips SM, MacDonald MJ. (2020). Carotid Artery longitudinal wall motion is unaffected by 12 weeks of endurance, sprint interval, or resistance exercise training. *Ultrasound in Medicine & Biology*. 46(4), 992-1000.

10. **Oikawa SY**, Kamal MJ, Webb EK, McGlory C, Baker SK, Phillips SM. (2020). Whey protein but not collagen peptides stimulate acute and longer-term muscle protein synthesis with and without resistance exercise in healthy older women: a randomized controlled trial. *The American Journal of Clinical Nutrition*, 111(3), 708-718.

11. **Oikawa SY**, MacInnis MJ, Tripp TR, McGlory C, Baker SK, Phillips SM. (2019). Lactalbumin, Not Collagen, Augments Muscle Protein Synthesis with Aerobic Exercise." *Medicine and science in sports and exercise*. 52(6), 1394-1403

12. McKendry J, Shad B, Smeuninx B, **Oikawa SY**, Wallis GA, Greig C, Phillips SM, and Breen L. (2019). Comparable rates of integrated myofibrillar protein synthesis between endurance-trained master athletes and untrained older individuals. *Frontiers in Physiology,* 10, 1084

13. **Oikawa SY**, Holloway TM, Phillips SM. (2019) The impact of muscle disuse and physical inactivity on muscle health in aging: protein and exercise as countermeasures. *Frontiers in Nutrition 6.*

14. **Oikawa SY**, Callahan DL, McGlory C, Toth MJ, Phillips SM. (2019). Maintenance of skeletal muscle function following reduced daily physical activity in healthy older adults: a pilot trial. *Applied Physiology, Nutrition, and Metabolism*, 44(10), 1052-1056.

15. Au JS, **Oikawa SY**, Morton RW, Phillips SM, MacDonald MJ, Stöhr EJ. (2019). Unaltered left ventricular mechanics and remodelling after 12 weeks of resistance exercise training–a longitudinal study in men. *Applied Physiology, Nutrition, and Metabolism*, 44(8), 820-826.

16. Morton RW, Sato K, Gallaugher MPB, **Oikawa SY**, McNicholas PD, Fujita S, Phillips SM (2018). Muscle Androgen Receptor Content but Not Systemic Hormones is Associated with Resistance Training-Induced Skeletal Muscle Hypertrophy in Healthy, Young Men. *Frontiers in Physiology*, 9, 1373.

17. **Oikawa SY**, McGlory C, D'Souza LK, Morgan AK, Saddler NI, Baker SK, Parise G, Phillips SM, (2018). A randomized controlled trial of the impact of protein supplementation on leg lean mass and integrated muscle protein synthesis during inactivity and energy restriction in older persons. *American Journal of Clinical Nutrition,* 108(5), 1060-1068.

18. Holloway TM, Morton RW, **Oikawa SY**, McKellar S, Baker SK, Phillips SM (2018). Microvascular Adaptations to Resistance Training are Independent of Load in Resistanc e Trained Young Men. *American Journal of Physiology- Regulatory, Integrative and Comparative Physiology*, 315(2). R267-R273.

19. Hodson, N, McGlory C, **Oikawa SY**, Jeromson S, Song Z, Ruegg M, Hamilton D, Phillips SM, Philp A (2017). Differential localisation and anabolic responsiveness of mTOR complexes in human skeletal muscle in response to feeding and exercise. *American Journal of Physiology- Cell Physiology*, 131(6), C604-C611.

20. McGlory C, Nunes, EA, Tskaridis E, **Oikawa SY**, Phillips SM. (2017), Assessing the mechanistic target of rapamycin complex-1 pathway in response to resistance exercise and feeding in human skeletal muscle by multiplex assay. *Applied Physiology Nutrition and Metabolism* [Epub ahead of print].
21. Au JS, **Oikawa SY**, Morton RW Macdonald MJ & Phillips, SM (2017). Arterial Stiffness Is Reduced Regardless of Resistance Training Load in Young Men. *Medicine and science in sports and exercise*, 49(2), 342-348.

22. Morton RW, **Oikawa SY,** Wavell C, Mazara N, McGlory C, Quadrilatero J, Baechler BL & Phillips SM. (2016), Neither load nor systemic hormones determine resistance training-mediated hypertrophy or strength gains in resistance-trained young men. *Journal of Applied Physiology*, 121(1), 129-138.

23. Longland TM, **Oikawa SY**, Mitchell CJ, Baker SK & Phillips SM. (2016), Higher versus lower dietary protein during an energy deficit combined with intense exercise promotes greater lean mass gain and fat mass loss: a randomized trial. *American journal of Clinical Nutrition,* 103(3), 738-746.

24. Morton, RW, **Oikawa, SY**, Phillips, SM, Devries, MC, & Mitchell, CJ. (2016). Self–Myofascial Release: No Improvement of Functional Outcomes in "Tight" Hamstrings. *International journal of sports physiology and performance*, 11(5), 658-663.

25. Murphy CH, **Oikawa SY** & Phillips SM. (2016), Daily distribution of dietary protein in older adults: the importance of considering protein intake on a per meal basis. *Journal of Frailty and Aging*, 5(1) 49-58.

26. **Oikawa SY**, Bell KE & Hector AJ. (2015), Resistance exercise training and circulatory responses to feeding and skeletal muscle protein anabolism in older men. *Journal of Physiology*, 593(17), 3771-3772.

27. Mitchell CJ, **Oikawa SY**, Ogborn DI, Nates NJ, MacNeil LG, Tarnopolsky M, & Phillips, SM, (2014). Daily chocolate milk consumption does not enhance the effect of resistance training in young and old men: a randomized controlled trial. *Applied Physiology, Nutrition, and Metabolism*, *40*(2), 199-202.

Book Chapters

Devries MC**, Oikawa SY,** , Phillips SM. Dietary protein and physical training effects on body composition and performance. Body Composition in Health and Performance in Sport and Work, Edited by Lukaski HC, Boca Raton, Taylor & Francis, 2016.

Published Abstracts

Oikawa SY, Kamal MJ, Webb EK, McGlory C, Baker SK, Phillips SM. Whey not collagen protein stimulates acute and longer-term muscle protein synthesis with and without resistance exercise in healthy older women. Abstract. Applied Physiology Nutrition & Metabolism. 2019

Oikawa SY, MacInnis MJ, Tripp TR, McGlory C, Baker SK, Phillips SM. Greater stimulation of myofibrillar and sarcoplasmic skeletal muscle protein synthesis with α-lactalbumin compared to collagen peptide supplementation during overreaching in trained cyclists. Abstract. European Journal of Sport Science. 2019

Oikawa SY, McGlory C, D'Souza, LK, Morgan AK, Phillips SM. Whey protein augments recovery of skeletal muscle protein synthesis following inactivity in hypocaloric older adults. Abstract. Current developments in nutrition. 2018

Oikawa SY, McGlory C, Saddler NI,D'Souza LK, Morgan AK, Parise G, Phillips SM. High protein intake and the maintenance of skeletal muscle during energy deficit combined with reduced daily activity in older adults. Abstract. Journal of Frailty and Aging. 2018

Oikawa SY, McGlory C, D'Souza LK, Morgan AK, Phillips SM. Sex-based differences in lean mass and strength with inactivity in older energy-restricted adults. Abstract. Applied Physiology, Nutrition, and Metabolism, 2017, 42(10): S57-S105, doi.org/10.1139/apnm-2017-0432

Oikawa SY, Morton RW, Wavell CG, Mazara N, McGlory C., Phillips SM. The effect of resistance exercise repetition range on hypertrophy and strength in previously resistance trained young men. Abstract. 2015, 40(S1): S49, 10.1139/apnm-2015-0359

Morton, RW, **Oikawa SY**, Mazara N., Wavell CG, Quadrilatero J, Baechler BL, Phillips SM. Repetition-load and systemic hormone concentrations do not determine resistance training-mediated adaptations in trained young men. Proceedings of The Physiological Society. The Physiological Society, 2016.

Morton RW, **Oikawa SY**, Mazara N, Wavell CG, McGlory C, Phillips SM. Neither exercise load nor acute hormonal responses affect resistance training-induced increases in muscle strength or hypertrophy. Abstract. Appl Physiol Nutr Metab. 2015, 40(S1): S44, 10.1139/apnm-2015-0359

Au JS, **Oikawa SY**, Morton RW, Phillips SM, MacDonald MJ. Arterial stiffness is reduced with 12 weeks of resistance exercise training in trained young men. Abstract. Appl Physiol Nutr Metab. 2015, 40(S1): S4, 10.1139/apnm-2015-0359

Oikawa SY, Mitchell CJ, Kuntz AB, Tanzos ME, Tarnopolsky M, Phillips SM. The effects of resistance raining in inflammatory markers, strength, physical function and balance in

older men and women. *Applied Physiology, Nutrition, and Metabolism*, 2013, 38(10): 1003-1091, 10.1139/apnm-2013-0299.

Longland TM, **Oikawa SY**, Mitchell CJ, Baker SK, Phillips, SM. Effects of protein supplementation during energy deficit with increase exercise. *Applied Physiology, Nutrition, and Metabolism*, 2013, 38(10): 1003-1091, 10.1139/apnm-2013-0299.

Publications- Media Article

Oikawa SY, Torres-Gonzalez M. The effects of protein supplementation and reduced daily physical activity in combination with an energy restricted diet in older adults: A clinical perspective (2020). *Today's Geriatric Medicine*, 13(1), 14.

Oikawa SY, van Loon LJC, Brisbois TD, Rollo I. Application of sports nutrition to healthy aging (2022). Gatorade Sports Science Institute *Sports Science Exchange,* SSE#224.

Related Experience

March 2020- July 09, 2022

Senior Scientist- Research and Development

Gatorade Sports Science Institute, PepsiCo Inc.

5500 34th Street West, Bradenton, FL, USA 34210

Versatile health scientist experienced in research and development in industry, clinical, consulting, and academic settings. Direct experience providing support for protein related claims and strategy, clinical research project design and implementation, team leadership and matrixed project management, written and oral communication, and external engagement with business, trade, and academic collaborations.

April 2018- Mary 2019

Vice President Internal- McMaster Graduate Student Association

McMaster University

Responsible for the oversight of promotion and organization of association related academic events and issues related to graduate students. I ensure representation of graduate student interests and concerns with student service related bodies at the upper university levels. My responsibilities include chairing the Academic Affairs Committee, the Graduate student services committee and acting on behalf of any graduate student member with an academic issue. In this role, I currently sit on Graduate Council, on the working groups for Program Structure and Student/Supervisor Relationships, and am heading Graduate Wellness Initiatives in collaboration with a student group and the School of Graduate Studies.

September 2016- August 2019

McMaster University- Committee Member

Committee on Science Graduate Curriculum, Policy, Admissions

Faculty of Science- McMaster University

My role in this position is to consider matters of policy and curriculum affecting graduate work in the Faculty of Science, including new programs and course changes, and to make recommendations thereon to the Faculty; to determine the admissibility to graduate study of any applicant recommended by a Department, School, Unit or Institute; to approve each graduate student's course program; to review annually the

progress of each graduate student; to determine action on the recommendation of a Department or School in instances of failure in a course; to recommend to the Graduate Council the students to receive graduate degrees; to decide on petitions from graduate students for special consideration in respect to off-campus or part-time study, extension of time to complete degree requirements, etc.; and to hear appeals of graduate students with respect to matters of academic standing involving substantive academic judgment.

December 2017- August 2019
Co-Chair- McMaster Institute for Research on Aging (MIRA) Trainee Network
McMaster University
Aid in development of the MIRA trainee network since it's inception in August of 2017. Organization and facilitation of monthly MIRA trainee meetings. Provide monthly updates to the trainee network and to the MIRA coordinators to provide feedback on how the network can be best utilized to benefit inter-faculty collaboration.

August 2015- August 2019
Reviewer- Kinesiology Student Research Ethics Committee (KSREC)
McMaster University- Department of Kinesiology
As a sub-committee of the McMaster Research Ethics Board, the kinesiology student research ethics board is used to ensure that all minimal risk undergraduate research projects comply with Canada's Tri-council policy statement on the ethical conduct of research involving humans. My role is to review protocols for clearance and to provide feedback to the researcher when protocols are submitted.

May 2018- August 2018
Graduate Curriculum Consultant
Department of Kinesiology Institutional Quality Assurance Process (IQAP)
MacPherson Institute- McMaster University
Work in collaboration with faculty of the Department of Kinesiology to provide perspective on the undergraduate and graduate programs to enhance the development and future directions of each program.

April 2017- August 2018
McMaster Graduate Student Association- Strategic Planning Committee
McMaster University
To evaluate the current strategic plan for the McMaster Graduate Student Association (GSA) and determine revisions that should be considered for the upcoming strategic plan that will be ratified in June of 2018. My role is to advocate for the graduate students in the faculty of science and provide insight in to needs these students might have. Our goal is to conduct and analyze an environmental scan of graduate students and key stakeholders to determine the future direction of the GSA.

April 2017- May 2018
McMaster Graduate Student Association- Faculty of Science Representative
McMaster University- Department of Kinesiology
Responsible for attending all Graduate Student Association (GSA) meetings and providing updates from SAM (Scientists At McMaster) to the GSA. Relaying information from the GSA to SAM. Sitting on GSA sub committees (GSA leagues committees). The GSA is looking to develop faculty sub-committees such that they are able to adequately service the needs of graduate students within their faculty with the GSA as the over-arching governing body. With this idea at the forefront, I have helped to implement

several strategies and operational changes within SAM in an effort to function more efficiently for students.

September 2013- August 2019
Teaching Assistant
McMaster University- Department of Kinesiology
Grading, teaching, preparing notes for undergraduate nutrition courses; leading application based labs for an undergraduate exercise testing and musculoskeletal anatomy courses.

September 2013- September 2017
Undergraduate Thesis Supervisor
Exercise Metabolism Research Group
McMaster University- Department of Kinesiology
1280 Main Street West, Hamilton, ON, L8S 4K1
Helped implement study design, testing and protocols for 5 undergraduate thesis students, provided editing and feedback to undergraduate researcher, supervised all participant sessions, aided in thesis preparation, worked with students on personal development projects.

January 2015- August 2019
Canadian Nutrition Society- Student Representative McMaster
McMaster University- Department of Kinesiology
Help to promote the CNS within the McMaster community. Spread awareness of CNS activity and ongoing meetings/webinars/seminar series that may be of pertinence to the McMaster academic community.

September 2015- August 2019
McMaster Kinesiology High School Physiology Lab Instructor
McMaster University- Department of Kinesiology
Provided high school exercise science students from across southern Ontario with experience in exercise testing and performance. In turn, we also serve as ambassadors to the department and McMaster to provide information for potential incoming students.

May of 2014, 2015, 2016, 2017
Performance Testing - Hockey Canada National Women's High Performance Program
McMaster University- Department of Kinesiology
Assisted with lactate threshold testing and BodPod body composition testing for Hockey Canada U22 camp.

June 2012-September 2013
Kinesiologist
McMaster University Medical Centre- Research Department of Pediatrics
1200 Main Street West, Hamilton, ON, L8N 3Z5
Responsible for overseeing physical activity progression and training adherence of participants, prescription of daily activities for pregnant women for additional exercise, analyzing exercise questionnaires and medical exercise physiology forms to determine exercise programs for individual participants. Worked along side a registered dietician in the creation of meal plans to facilitate higher protein intake during pregnancy.

May 2012 - September 2013

Research Assistant

Exercise Metabolism Research Group

McMaster University- Department of Kinesiology

1280 Main Street West, Hamilton, ON, L8S 4K1

Trained and tested participants on exercise equipment, maintained and updated scheduling of 80 participants, communicated and delegated responsibilities to other thesis students and volunteers, performed phlebotomy, assisted with blood processing, muscle biopsies, participant 1RM testing, $V0_2$ Max tests, body composition analyses (Bodpod, DEXA, $V0_2$), diet analysis, supplement preparation and assisted with manuscript preparation.

Other Work Experience

January 2010 – March 2020

Spinning Instructor

The Pulse Fitness Centre

McMaster University

Responsible for lesson planning and instructing classes of 20 people, help to facilitate continuing education for other instructors.

Extra Curricular Activities

April 2015- January 2018

Breakfast Clubs of Canada

Volunteer- Dr. Edgar Davey Public School

Help to prepare healthy breakfasts and snacks for elementary school children each week.

September 2013- 2016

Exercise is Medicine Canada- McMaster Chapter

Executive committee, department of Kinesiology representative. Help in designing programs and materials to educate health professionals on exercise as a prescription to combat and aid in disease states, provide representation of the committee at community and campus events.

October 2014- October 2015

Canadian Society of Exercise Physiology- 2015 Annual General Meeting Organizing Committee

Volunteer

Helped to promote and organize the upcoming National conference on behalf of McMaster University. Responsibilities included the preparation of promotional materials and organization of Graduate student events.