

Gregory C. Henderson, Ph.D.

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EDUCATION:

Ph.D., Integrative Biology, University of California, Berkeley, 5/2007

B.A., Integrative Biology, University of California, Berkeley, 5/2001

POSITIONS AND EMPLOYMENT:

Assistant Professor, Department of Nutrition Science, Purdue University, West Lafayette, IN (2019 – present)

R&D Scientist – Advanced, Clinical Mass Spectrometry Division, Agilent Technologies, Santa Clara, CA (2016 – 2019)

Senior Analytical Scientist, Kiverdi Inc., Hayward, CA (2015 – 2016)

Senior Scientist, Newomics Inc., Emeryville, CA (2014 – 2015)

Assistant Professor, Department of Exercise Science and Sport Studies, Rutgers University, New Brunswick, NJ (2010 – 2014)

Postdoctoral Research Fellow, Division of Endocrinology, Mayo Clinic, Rochester, MN (2007 – 2010)

Chemist, Bay Bioanalytical Laboratory, Hercules, CA (2001 – 2002)

AWARDS AND HONORS:

Top Reviewer Award, Lipids in Health and Disease Journal, Fourth Quarter (2020)

Star Reviewer, American Physiological Society Journals (2013)

Vernon R. Young International Award for Amino Acid Research, American Society for Nutrition (April, 2011)

Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award for Meritorious Research, American Physiological Society. Experimental Biology Annual Meeting (May, 2007)

Predocutorial Recognition Award, American Physiological Society, Environmental and Exercise Physiology Section. Experimental Biology Annual Meeting (April, 2007)

Outstanding Graduate Student Instructor Award, Integrative Biology. University of California, Berkeley (May, 2004)

PEER-REVIEWED JOURNAL ARTICLES:

1. Abdollahi A, Dowden BN, Buhman KK, Zembroski AS, **Henderson GC**. Albumin knockout mice exhibit reduced plasma free fatty acid concentration and enhanced insulin sensitivity. *Physiological Reports* 10(5): e15161, 2022.

2. **Henderson GC**. Plasma Free Fatty Acid Concentration as a Modifiable Risk Factor for Metabolic Disease. *Nutrients* 13: 2590, 2021.

3. **Henderson GC**, Meyer JM. Transient elevation of triacylglycerol content in the liver: a fundamental component of the acute response to exercise. *Journal of Applied Physiology* 130:1293-13032, 2021.
4. McMillan DW, **Henderson GC**, Nash MS, Jacobs KA. Effect of paraplegia on the time course of exogenous fatty acid incorporation into the plasma triacylglycerol pool in the postprandial state. *Frontiers in Physiology* 12: 626003, 2021.
5. **Henderson GC**, Martinez Tenorio V, Tuazon MA. Acute exercise in mice transiently remodels the hepatic lipidome in an intensity-dependent manner. *Lipids in Health and Disease* 19:219, 2020.
6. Xu H, Gajda AM, Zhou YX, Panetta C, Sifnakis Z, Fatima A, **Henderson GC**, Storch J. Muscle metabolic reprogramming underlies the resistance of LFABP-null mice to high-fat feeding-induced decline in exercise capacity. *J Biol Chem* 294: 15358-15372, 2019.
7. Koh JH, Johnson ML, Dasari S, Lebrasseur NK, Vuckovic I, **Henderson GC**, Cooper S, Shulman GI, Lanza IR, Nair KS. TFAM enhances fat oxidation and attenuates high fat diet induced insulin resistance in skeletal muscle. *Diabetes* 68(8):1552-1564, 2019.
8. Tuazon MA, Campbell SC, Klein DJ, Shapses S, Anacker KR, Anthony TG, Uzumcu M, **Henderson GC**. Effects of ovariectomy and exercise training intensity on energy substrate and hepatic lipid metabolism, and spontaneous physical activity in mice. *Metabolism: Clinical and Experimental* 83:234-244, 2018.
9. Bloomer SA, Wellen KE, **Henderson GC**. Sexual dimorphism in the hepatic protein response to a moderate trans fat diet in senescence-accelerated mice. *Lipids in Health and Disease* 16(1):243, 2017.
10. Davitt PM, **Henderson GC**, Walker AJ, Arent SM. Postprandial hormone response after endurance or resistance exercise in obese women. *Comparative Exercise Physiology* 13(4): 227-235, 2017.
11. **Henderson GC**. Lipid-Based Therapeutic Strategies for Sarcopenic and Dystrophic Muscular Impairments. *Cellular and Molecular Biology* 61:2, 2015.
12. Irving BA, Lanza IR, **Henderson GC**, Rao RR, Spiegelman BM, Nair KS. Combined Training Enhances Skeletal Muscle Mitochondrial Oxidative Capacity Independent of Age. *Journal of Clinical Endocrinology and Metabolism* 100(4): 1654-63. 2015.
13. Johnson ML, Irving BA, Lanza IR, Vendelbo MH, Konopka AR, Robinson MM, **Henderson GC**, Klaus KA, Morse DM, Heppelmann C, Bergen HR, Dasari S, Schimke JM, Jakaitis DR, Nair KS. Differential Effect of Endurance Training on Mitochondrial Protein Damage, Degradation, and Acetylation in the Context of Aging. *Journal of Gerontology A: Biological Sciences and Medical Sciences* 70(11):1386-93, 2015.
14. Wilson GJ, Lennox BA, She P, Mirek ET, Al Baghdadi RJ, Fusakio ME, Dixon J, **Henderson GC**, Wek RC, Anthony TG. GCN2 is required to increase fibroblast growth factor 21 and maintain hepatic triglyceride homeostasis during asparaginase treatment. *American Journal of Physiology: Endocrinology and Metabolism* 308(4): E283-93, 2015.
15. **Henderson GC**. Sexual dimorphism in the effects of exercise on metabolism of lipids to support resting metabolism. *Frontiers in Endocrinology* 2014 Oct 7;5:162.
16. Tuazon MA, McConnell TR, Wilson GJ, Anthony TG, **Henderson GC**. Intensity-dependent and sex-specific alterations in hepatic triglyceride metabolism in mice following acute exercise. *Journal of Applied Physiology* 118: 61-70, 2015.
17. **Henderson GC**, Evans NP, Grange RW, Tuazon MA. Compared with monounsaturated fatty acids, a high dietary intake of n-3 polyunsaturated fatty acids does not reduce the degree of pathology in mdx mice. *British Journal of Nutrition* 111:1791-800, 2014

18. **Henderson GC**, Alderman BL. Determinants of resting lipid oxidation in response to a prior bout of endurance exercise. *Journal of Applied Physiology* 116: 95-103, 2014.
19. Liou J, Tuazon MA, Burdzy A, **Henderson GC**. Moderate compared to low dietary intake of trans-fatty acids impairs strength of old and aerobic capacity of young SAMP8 mice in both sexes. *Lipids* 48: 1135-1143, 2013.
20. Tuazon MA, **Henderson GC**. Fatty acid profile of cardiac muscle phospholipid and triacylglycerol in mdx mice and C57BL/10ScSnJ controls. *Lipids* 48: 849-51, 2013.
21. Davitt PM, Arent SM, Tuazon MA, Golem DL, **Henderson GC**. Postprandial triglyceride and free fatty acid metabolism in obese women after either endurance or resistance exercise. *Journal of Applied Physiology* 114: 1743-1754, 2013.
22. **Henderson GC**. Kinetic measurement techniques in the evaluation of lipid metabolism. *Current Drug Discovery Technologies* 10: 209-23, 2013.
23. Sinner DI, Kim JY, **Henderson GC**, Igal RA. StearoylCoA desaturase-5: a novel regulator of neuronal cell proliferation and differentiation. *PLoS ONE* 7: e39787, 2012.
24. Soop M, Nehra V, **Henderson GC**, Boirie Y, Ford GC, Nair KS. Co-ingestion of whey protein and casein in a mixed meal - demonstration of a more sustained anabolic effect of casein. *American Journal of Physiology: Endocrinology and Metabolism* 303: E152-62, 2012.
25. Tuazon MA, **Henderson GC**. Fatty acid profile of skeletal muscle phospholipid is altered in mdx mice and is predictive of disease markers. *Metabolism: clinical and experimental* 61: 801-811, 2012.
26. **Henderson GC**, Tuazon MA. Separation of positional and geometrical fatty acid isomers as 2-nitrophenylhydrazide derivatives by high performance liquid chromatography. *Analytical Biochemistry* 413: 66-68, 2011.
27. Jaleel A, **Henderson GC**, Madden BJ, Klaus KA, Morse DM, Gopala S, Nair KS. Identification of *de novo* synthesized and relatively older proteins – Accelerated oxidative damage to *de novo* synthesized ApoA-1 in type 1 diabetes. *Diabetes* 59: 2366-2374, 2010.
28. **Henderson GC**, Fattor JA, Krauss RM, Faghini N, Luke-Zeitoun M, Brooks GA. Plasma triglyceride concentrations are rapidly reduced following individual bouts of endurance exercise in women. *European Journal of Applied Physiology* 109: 721-730, 2010.
29. **Henderson GC**, Nadeau D, Horton ES, Nair KS. Effects of adiposity and 30 days of caloric restriction upon protein metabolism in moderately and severely obese women. *Obesity* 18: 1135-1142, 2010.
30. **Henderson GC**, Dhatariya K, Ford GC, Klaus KA, Basu R, Rizza RA, Jensen MD, Khosla S, O'Brien P, Nair KS. Higher muscle protein synthesis in women than men across the lifespan, and failure of androgen administration to amend age-related decrements. *FASEB Journal* 23: 631-641, 2009.
31. **Henderson GC**, Fattor JA, Horning MA, Faghini N, Johnson ML, Luke-Zeitoun M, Brooks GA. Glucoregulation is more precise in women than men during postexercise recovery. *American Journal of Clinical Nutrition* 87: 1686-1694, 2008.
32. **Henderson GC**, Fattor JA, Horning MA, Faghini N, Johnson ML, Mau TL, Luke-Zeitoun M, Brooks GA. Lipolysis and fatty acid metabolism in men and women during the postexercise recovery period. *Journal of Physiology* 584: 963-981, 2007.
33. **Henderson GC**, Fattor JA, Horning MA, Faghini N, Luke-Zeitoun M, Brooks GA. Retention of intravenously infused [¹³C]bicarbonate is transiently increased during recovery from hard exercise. *Journal of Applied Physiology* 103: 1604-1612, 2007.

34. Friedlander AL, Braun B, Pollack M, MacDonald JR, Fulco CS, Muza SR, Rock PB, **Henderson GC**, Horning MA, Brooks GA, Hoffman AR, Cymerman A. Three weeks of caloric restriction alters protein metabolism in normal-weight, young men. *American Journal of Physiology: Endocrinology and Metabolism* 289: E446-455, 2005.
35. Kuo CC, Fattor JA, **Henderson GC**, and Brooks GA. Lipid oxidation in fit young adults during postexercise recovery. *Journal of Applied Physiology* 99: 349-356, 2005.
36. **Henderson GC**, Horning MA, Lehman SL, Wolfel EE, Bergman BC, and Brooks GA. Pyruvate shuttling during rest and exercise before and after endurance training in men. *Journal of Applied Physiology* 97: 317-325, 2004.

OTHER PUBLICATIONS:

1. **Henderson GC**, Hashimoto T, Irving BA, and Halliday TM. Editorial: Mechanisms Linking Transport and Utilization of Metabolic Fuels to the Impact of Nutrition and Exercise Upon Health. *Front. Nutr.*, 26 November 2021 | <https://doi.org/10.3389/fnut.2021.803369>
2. **Henderson GC**. Editorial: Lettuce romaine calm and manage our glycemia: adding leafy greens to a meal may improve postprandial metabolism. *Lipids in Health and Disease* 20(1): 67, 2021.
3. **Henderson GC**. Commentary: The diabetic brain during hypoglycemia; in the midst of plenty of lactate. *Diabetes* 62: 3024-3026, 2013.
4. **Henderson GC**, Irving BA, Nair KS. Editorial: Potential application of essential amino acid supplementation to treat sarcopenia in elderly people. *Journal of Clinical Endocrinology and Metabolism* 94: 1524-1526, 2009.
5. **Henderson GC**, Brooks GA. Women utilize lipid as fuel more than men during exercise - is there a paradox? *Physiology News* 71: 22-24, 2008.
6. **Henderson GC**, Horning MA, Wallis GA, Brooks GA. Letter to the editor: Pyruvate Metabolism in Working Human Skeletal Muscle. *American Journal of Physiology: Endocrinology and Metabolism* 292: E366, 2007.
7. Brooks GA, **Henderson GC**, Hashimoto T, Mau T, Fattor JA, Horning MA, Hussien R, Cho HS, Faghihnia N, Zarins Z. Point-Counterpoint Comments: Lactic acid accumulation is an advantage/disadvantage during muscle activity. *Journal of Applied Physiology* 100: 2100, 2006.

INVITED PRESENTATIONS:

1. Serum albumin and its role in the integration of lipid and glucose metabolism. 4th Big Ten Academic Alliance Lipids Symposium, University of Illinois, February 11, 2022.
2. Developing new approaches to manipulate plasma free fatty acid abundance to improve metabolic health. Purdue Center for Cancer Research Seminar. March 10, 2021.
3. Fatty acid transport from adipose tissue to liver: Role in the exercise response and regulation of metabolic health. Indiana University, Center for Diabetes and Metabolic Disease Seminar. November 30, 2020.
4. Exercise participation and gender as potent modulators of inter-organ lipid shuttling and fuel selection. Mayo Clinic, Scottsdale, AZ. Center for Metabolic and Vascular Biology Seminar, April, 2014.
5. Plasma triglyceride and fatty acid kinetics following exercise. Symposium: Lipid Metabolism-Molecular Regulation and Integrated Responses to Exercise. American College of Sports Medicine Annual Meeting, 2013.

6. The influence of sex in metabolism during exercise recovery. Symposium: Sex-based differences in exercise metabolism (American Physiological Society), Experimental Biology Annual Meeting, 2013.
7. Fatty acid composition of muscle phospholipid in the mouse model of duchenne muscular dystrophy. Rutgers Center for Lipid Research, Meeting. May, 2011.
8. Metabolism of triglyceride and fatty acids during the post-exercise recovery period. Symposium: Energy substrate partitioning during exercise and recovery. American College of Sports Medicine Conference on Integrative Physiology of Exercise. September, 2010.
9. Impacts of physical activity and energy balance upon metabolite kinetics. Rutgers University, Department of Nutritional Sciences, Departmental Seminar. March, 2010.
10. Overexpression of transcription factor A of mitochondria (TFAM) in skeletal muscle of mice. Mayo Clinic, Rochester, MN. Endocrine Research Unit Seminar. January, 2010.
11. Skeletal muscle protein synthesis: age, gender, and androgen supplementation. Mayo Clinic, Rochester, MN. Endocrine Research Unit Seminar. March, 2008.
12. Lipid Metabolism during Exercise and Post-exercise Recovery in Men and Women. California State University, Chico. Biological Sciences Departmental Seminar. October, 2006.
13. Lipid Metabolism in Exercise and Recovery. American College of Sports Medicine Conference on Integrative Physiology of Exercise, 2006.
14. Effects of Endurance Exercise upon Fat Utilization. National Strength and Conditioning Association, California State Annual Meeting, 2005.

MEETING ABSTRACTS:

1. Abdollahi A, Dowden B, Buhman KK, Zembroski AS, **Henderson GC**. Lack of serum albumin improves insulin sensitivity in both male and female mice. Experimental Biology Annual Meeting, 2022.
2. Abdollahi A, Dowden B, Buhman KK, Zembroski AS, **Henderson GC**. Lack of serum albumin improves insulin sensitivity in both male and female mice. HHS Fall Research Day, Purdue University, 2021.
3. Abdollahi A, Dowden B, **Henderson GC**. Albumin Knockout Mice Exhibit Reduced Plasma Free Fatty Acids but No Impairment in Whole Body Fat Oxidation. Annual Conference of the American Society for Nutrition; Nutrition 2021. (*oral presentation by A. Abdollahi*)
4. **Henderson GC**, Tuazon MA. Rapid Accumulation of Triacylglycerol in the Liver is a Component of the Acute Exercise Response and May Serve a Protective Role Against Lipotoxicity. Experimental Biology Annual Meeting, 2020. *Conference canceled, but abstracts were published.*
5. Doering JA, DeRusso A, Sarathy A, Zibamanzarmofrad M, Donnelly S, Creekmore A, Burkin DJ, **Henderson G**, Cheng Z, LeBlanc P, Chin E, Schmelz EM, Grange RW. Dietary sphingolipids modulate muscle power and inflammation in mdx mice. New Directions in Biology and Disease of Skeletal Muscle Conference, 2014.
6. **Henderson GC**, Campbell SC, Tuazon MA. Hepatic acetyl-CoA carboxylase expression and triglyceride content are increased in mice after ovariectomy. American Diabetes Association Annual Meeting, 2014

7. Tuazon MA, McConnell TR, Liou J, **Henderson GC**. Intensity-dependent and sex-specific alterations in hepatic triglyceride and perilipin-2 abundance following exercise. American College of Sports Medicine Annual Meeting, 2014.
8. Davitt PM, **Henderson GC**, Arent SM. Acute post-exercise endocrine response during the postprandial period in obese women. American College of Sports Medicine Annual Meeting, 2013.
9. Davitt PM, Arent SM, **Henderson GC**. Postprandial fatty acid trafficking in obese women after either endurance or resistance exercise. Experimental Biology Annual Meeting, 2013.
10. Tuazon MA, Liou J, **Henderson GC**. Sex differences in VLDL-triglyceride kinetics in the basal state and in response to high-intensity interval exercise. Experimental Biology Annual Meeting, 2013.
11. Tuazon MA, McConnell TR, Liou J, **Henderson GC**. Sex differences in hepatic triglyceride concentration in response to a single bout of high-intensity interval exercise. Nutrition, Endocrinology & Animal Biosciences, 6th Annual Conference. Rutgers University, 2013.
12. Irving BA, Lanza IR, **Henderson GC**, Weymiller A, Sun Y, Nair KS. Endurance, resistance, and combined training increase mixed muscle protein synthesis independently of age. Experimental Biology Annual Meeting, 2012.
13. Esposito D, Tuazon M, **Henderson GC**, Komarnytsky S, Raskin I. Brassinosteroid enhances C57BL/6J mice treadmill endurance. Experimental Biology Annual Meeting, 2012.
14. Davitt PM, **Henderson GC**, Arent SM. Acute Effects of Resistance Exercise vs. Endurance Exercise on Postprandial Fuel Partitioning. American College of Sports Medicine Annual Meeting, 2012.
15. Arent SM, Davitt PM, **Henderson GC**. Acute Effects of Resistance Exercise vs. Endurance Exercise on Exogenous Fat Oxidation in Obese Women. American College of Sports Medicine Annual Meeting, 2012.
16. **Henderson GC**, Tuazon MA. Effect of Lifelong trans-Fatty Acid Intake on Exercise Capacity In Senescence-accelerated Mice. American College of Sports Medicine Annual Meeting, 2012.
17. Irving B, Lanza IR, Dalla Man C, **Henderson GC**, Nelson R, Miles J, Cobelli C, Nair K; Effect of age, sex, mitochondrial function, and exercise training on insulin sensitivity, beta-cell responsivity, and fatty acid concentrations in response to a mixed-meal. European Association for the Study of Diabetes Annual Meeting, 2011.
18. Irving BA, Lanza IR, **Henderson GC**, Weymiller A, Schimke J, Morse D, Johnson L, Nair KS. Effect of Exercise Training Modality on Skeletal Muscle mRNA Abundance in Young and Older Adults. American College of Sports Medicine Annual Meeting, 2011.
19. Tuazon M, **Henderson GC**. Altered fatty acid composition of skeletal muscle phospholipid in *mdx* mice. Experimental Biology Annual Meeting, 2011.
20. Irving BA, Lanza I, **Henderson G**, A. Weymiller A, Schimke J, Morse D, Nair KS. Effect of exercise training modality on skeletal muscle mitochondrial biogenesis in young and older adults. Experimental Biology Annual Meeting, 2011.
21. Lanza IR, Irving BA, **Henderson GC**, Nair KS. Mitochondrial oxidative capacity and coupling: effects of aging and exercise training. Experimental Biology Annual Meeting, 2011.
22. Tuazon MA, **Henderson GC**. Content of omega-3 and omega-6 fatty acids in skeletal muscle phospholipid is altered in *mdx* mice and is predictive of disease severity. Nutrition, Endocrinology & Animal Biosciences, 4th Annual Conference. Rutgers University, 2011.

23. Jaleel A, **Henderson GC**, Madden BJ, Klaus KA, Morse DM, Gopala S, Nair KS. Increased oxidative damage to de novo synthesized ApoA-1 in untreated type 1 diabetic patients - a novel method to identify the relative age of proteins. European Association for the Study of Diabetes Annual Meeting, 2010.
24. **Henderson GC**, Nadeau D, Horton ES, Nair KS. Response of protein metabolism to 30 days of caloric restriction in moderately and severely obese women. American Diabetes Association Annual Meeting, 2009.
25. **Henderson GC**, Dhatariya K, Ford GC, Klaus KA, O'Brien P, Nair KS. Effects of age and gender upon skeletal muscle and whole body protein synthesis. Amino Acid/Protein Metabolism in Health and Disease, 7th International Symposium, 2008.
26. **Henderson GC**, Dhatariya K, Ford GC, Klaus KA, Mujeeb M, Nair KS. Skeletal muscle protein synthesis in the elderly: age, gender, and androgen supplementation. Experimental Biology Annual Meeting, 2008. (*oral presentation*)
27. Brooks GA, **Henderson GC**, Fattor JA, Horning MA, Faghihnia N, Johnson ML, Luke-Zeitoun M. Glucose flux is elevated in men, but not women, during the postexercise recovery period. Experimental Biology Annual Meeting, 2008.
28. **Henderson GC**, Fattor JA, Horning MA, Faghihnia N, Johnson ML, Luke-Zeitoun M, Brooks GA. Prior Exercise Increases Resting Lipolysis in Men but not Women. Experimental Biology Annual Meeting, 2007.
29. **Henderson GC**, Fattor JA, Faghihnia N, Mau TL, Luke-Zeitoun M, Brooks GA. Elevated Lipid Oxidation in Men Following Endurance Exercise. American College of Sports Medicine Annual Meeting, 2006.
30. **Henderson GC**, Fattor JA, Horning MA, Faghihnia N, Mau TL, Luke-Zeitoun M, Brooks GA. Palmitate oxidation during rest, exercise, and post-exercise recovery. Experimental Biology Annual Meeting, 2006.
31. **Henderson GC**, Horning MA, Lehman SL, Wolfel EE, Bergman BC, and Brooks GA. Pyruvate Shuttling in Men during Rest and Exercise. American Physiological Society Intersociety Meeting, 2004.
32. Brooks GA, **Henderson GC**, Horning MA, Lehman SL, Bergman BC, and Wolfel EE. Pyruvate-lactate shuttling in vivo. European College of Sport Science Annual Meeting, 2004.
33. Friedlander AL, **Henderson GC**, Horning MA, MacDonald JR, Pollack M, Braun B, Rock PB, Fulco CS, Muza SR, Hoffman AR, Brooks GA, Cyberman.A. High Altitude Exposure with and without Caloric Restriction Alters Leucine Kinetics in Young Men. American College of Sports Medicine Annual Meeting, 2004.
34. Jacobs KA, Friedlander AL, Horning MA, **Henderson G**, Pollack M, MacDonald JR, Braun B, Brooks GA, Hoffman AR, Cymerman A. Influence of Altitude and Caloric Restriction on Plasma Alanine and Glutamine During Exercise. American College of Sports Medicine Annual Meeting, 2001.

RESEARCH GRANTS:

McKinley Educational Initiative, \$75,000 Role: Principal Investigator Targeting fatty liver disease to prevent type 2 diabetes (renewal)	1/2022 – 12/2022
NIH (NIDDK), 1R56DK128008-01A1, \$125,000	9/2021 – 8/2022

Role: Principal Investigator

Plasma free fatty acids and albumin in metabolic disease

Ralph W. and Grace M. Showalter Research Trust, \$75,000

7/2021 – 7/2022

Role: Principal Investigator

Altering lipid metabolism to improve insulin sensitivity: impaired exercise capacity as a potential side effect

Center for Diabetes and Metabolic Disease at Indiana University

Pilot and Feasibility Award within NIH Grant P30 DK097512, \$50,000

7/2021 – 6/2022

Role: Principal Investigator

Targeting plasma free fatty acids through a novel approach as a potential intervention for insulin resistance

USDA National Institute of Food and Agriculture Hatch Award

2020 – 2025

Role: Principal Investigator

Fatty acid metabolism in obesity and metabolic dysfunction

McKinley Educational Initiative, \$50,000

1/2021 – 12/2021

Role: Principal Investigator

Targeting fatty liver disease to prevent type 2 diabetes (renewal)

McKinley Educational Initiative, \$30,000

1/2020 – 12/2020

Role: Principal Investigator

Targeting fatty liver disease to prevent type 2 diabetes

Indiana Clinical and Translational Sciences Institute, \$9,860

1/2020 – 12/2021

Funded by NIH, National Center for Advancing Translational Sciences (UL1TR002529)

Role: Principal Investigator

Proteomic and lipidomic characterization of an albumin-deficient mouse model for translational studies of fatty acid metabolism

American Diabetes Association (7-13-JF-27-BR), \$70,000

11/2013 – 9/2014

Role: Principal Investigator

Preclinical testing of exercise approaches in ovarian hormone deficiency

NIH, National Institute on Aging (1 R21 AG042403-01), \$232,125

4/2012 – 3/2014

PI: Monica Driscoll

Role: CollaboratorDevelopment of a *C. elegans* exercise model for evaluating healthy aging mechanism

Faculty Research Grant Program, Rutgers University, \$15,617

1/2012 – 12/2012

Role: Principal Investigator

Sexual dimorphism in blood triglyceride metabolism

Busch Memorial Fund, Biomedical Award, \$50,000

7/2010 – 5/2012

Principal Investigators: Gregory C. Henderson, Shawn M. Arent

Role: Principal Investigator

Resistance vs endurance exercise: Metabolic and hormonal responses in obese women.

PROFESSIONAL MEMBERSHIPS:

American Physiological Society, Member

American Society for Nutrition, Member

Purdue University Center for Cancer Research, Associate Member
Purdue Institute of Inflammation, Immunology and Infectious Disease, Member

PROFESSIONAL SERVICE:

Associate Editor, Lipid and Fatty Acid Research Specialty Section; *Frontiers in Physiology*, *Frontiers in Cell and Developmental Biology*, and *Frontiers in Nutrition* (2022 – present)

Editorial Board Member, *Biomolecules*, Biomacromolecules: Lipids' Section (2022 – present)

Presenter at 'Purdue's for Me' events, aimed at recruiting admitted students to Nutrition majors at Purdue (2022)

Judge, Neuroscience Oral Presentations Session. 7th Annual Symposium, Center for Diabetes and Metabolic Diseases, Indiana University School of Medicine. Oct 5-6, 2021.

Editorial Board Member, *Nutrients*, Nutrition and Metabolism Section (2021 – present)

Director of the Nutrition Science Undergraduate Major, Department of Nutrition Science, Purdue University (2021)

Member, Advisory Committee to the Department Head. Department of Nutrition Science, Purdue University (2021)

Reviewer, Bilsland Dissertation Fellowship Applications, Department-Level Review, Department of Nutrition Science, Purdue University (2021)

Presenter for Department of Nutrition Science, Health and Human Sciences Virtual Admitted Students Days, Purdue University (2021)

Review Editor on the Editorial Board of Lipid and Fatty Acid Research Specialty Section; *Frontiers in Physiology*, *Frontiers in Cell and Developmental Biology*, and *Frontiers in Nutrition* (2021 – 2022)

CRC Director Search Committee Member, Department of Nutrition Science, Purdue University (2020-2021)

Qualifying Exam Question Contributor and Grader, Interdepartmental Nutrition Program, Purdue University (2021)

Abstract Reviewer, Nutrition 2021 Conference, American Society for Nutrition (2021)

Award Jury Member, Vernon Young International Award for Amino Acid Research, American Society for Nutrition (2020, 2021)

Member, Admissions Committee, Interdepartmental Nutrition Program, Purdue University (2020, 2021)

Guest Associate Editor, *Frontiers in Nutrition* (2020 – present)

Member, Undergraduate Education Policy and Curriculum Committee, Department of Nutrition Science, Purdue University (2020 – present)

Reviewer, Compton Travel Award Competition, Purdue University (2020)

Judge, 'Health and Disease: Science, Technology, Culture and Policy Research' poster session. Purdue University (2020)

Grant Reviewer, Agricultural Science and Extension for Economic Development (AgSEED) Program, Purdue University (2019)

Undergraduate Student Internship Program Director, Kiverdi Inc. (2015 – 2016)

Member, Rutgers Biomedical & Health Sciences Strategic Planning Workgroup: Obesity, Endocrinology and Diabetes Working Group (2014)

Admissions Committee Chair, Graduate Program in Kinesiology and Applied Physiology, Rutgers University (2014)

Strategic Planning Committee Member, Department of Exercise Science, Rutgers University (2014)

Exam Question Contributor and Grader, Nutritional Aspects of Disease (16:709:506), Department of Nutritional Sciences, Rutgers University (2013)

Grant Reviewer, Maryland Industrial Partnerships Program (2013)

Director of Metabolism/Lipid Core Group, New Jersey Obesity Group (2012 – 2014)

Qualifying Exam Question Contributor and Grader, Nutritional Sciences Graduate Program, Rutgers University (2012)

Qualifying Exam Grader for Research Proposals, Nutritional Sciences Graduate Program, Rutgers University (2011-2012)

Admissions Committee Member, Professional Science Master's Program in Kinesiology and Applied Physiology, Rutgers University (2011 – 2014)

Biomedical Research Advisory Committee, Member, Reviewer for Busch Biomedical Grant Competition, Rutgers University (2011 – 2012)

Exercise Science Curriculum Committee, Rutgers University (2011 – 2012)

Graduate Faculty Member, Endocrinology and Animal Biosciences, Rutgers University (2010 – 2014)

Graduate Faculty Member, Department of Nutritional Sciences, Rutgers University (2010 – 2014)

Faculty Search Committee Member, Department of Exercise Science and Sport Studies, Rutgers University (2010)

Mayo Clinic Young Investigator Research Symposium, Steering Committee Member (2008-2009)

Mayo Research Fellows Association, Vice President (2008 - 2009)

Annual Hansen Lecture on Environmental Physiology, Coordinator and host. University of California, Berkeley (2006 – 2007)

Faculty Search Committee, Member, Department of Integrative Biology, University of California, Berkeley (2004)

COURSE INSTRUCTION:

Evaluation of Nutrition Science Research (NUTR 496). Purdue University, Department of Nutrition Science. Role: Course Instructor.
Spring 2022

Nutrition in the 21st Century (NUTR 105). Purdue University, Department of Nutrition Science. Role: Course Instructor.
Fall 2020, Fall 2021

Nutrition Assessment (NUTR 436). Purdue University, Department of Nutrition Science. Role: Course Instructor.
Spring 2020, Spring 2021

Nutritional Biochemistry and Physiology II (NUTR 606). Purdue University, Department of Nutrition Science. Role: Course Instructor for 50% of course.
Spring 2020, Spring 2021, Spring 2022

Biochemistry of Exercise (01:377:381 and 16:137:516). Rutgers University, Department of Exercise Science. Role: Course instructor.
Fall 2010; Fall 2011; Summer 2012; Fall 2012; Fall 2013

Advanced Exercise Physiology (01:377:454 and 16:137:515). Rutgers University, Department of Exercise Science. Role: Course instructor.
Spring 2011; Spring 2012; Spring 2013; Spring 2014

Mammalian Physiology Laboratory (IB132L). University of California, Berkeley, Department of Integrative Biology. Role: Graduate Student Instructor for laboratory section of IB132.
Spring 2003; Spring 2004

Exercise Physiology Laboratory (IB123L). University of California, Berkeley, Department of Integrative Biology. Role: Graduate Student Instructor for laboratory section of IB123.
Fall 2003

Human Anatomy Laboratory (IB131L). University of California, Berkeley, Department of Integrative Biology. Role: Graduate Student Instructor for laboratory section of IB131.
Fall 2002

COURSE GUEST LECTURES:

Principles of Public Health Science (HSCI 201). Purdue University, School of Health Sciences. Lecture title: **Obesity**. March 29, 2022.

Lipids and Cell Function (NUTR 590). Purdue University, Department of Nutrition Science. Lecture title: **Fatty acid transport and distribution between body compartments: An aqueous journey**. March 28, 2022.

Introduction to Nutrition Science (NUTR 107). Purdue University, Department of Nutrition Science. Lecture title: **Macronutrient Metabolism**. November 21, 2019.

Nutrition Science in the 21st Century (NUTR 105). Purdue University, Department of Nutrition Science. Lecture title: **Energy metabolism and metabolic fuel selection**. September 19, 2019.

Applied Topics in Physiology – Science from the Lab to the Real World (Human Biology 135s). Stanford University, Department of Human Biology. Lecture title: **The physiology and biochemistry of obesity – Applying biochemistry to public health**. May 23, 2017.

Obesity - Biology, Behavior, and Management (11:709:427:01). Rutgers University, Department of Nutritional Science. Lecture title: **Exercise and obesity**. February 27, 2013; February 18, 2014.

Colloquium in Kinesiology and Applied Physiology (16:137:505). Rutgers University, Professional Science Master's Program. Lecture title: **Considering specific populations in exercise and other lifestyle interventions**. March 8, 2012.

Nutritional Aspects of Disease (16:709:506). Rutgers University, Department of Nutritional Science. Lecture title: **Sarcopenia of Aging**. Nov 2, 2011; Oct 1, 2013.

Honors Research in Exercise Science (01:377:481). Rutgers University, Department of Exercise Science. Lecture title: **Completing the Research Process and Disseminating Research Findings**. April 22, 2010.

Honors Research in Exercise Science (01:377:481). Rutgers University, Department of Exercise Science. Lecture title: **Measuring Research Variables**. April 6, 2010.

Honors Research In Exercise Science (01:377:481). Rutgers University, Department of Exercise Science. Lecture title: **Writing an Introduction for a Journal Article or Thesis**. February 2, 2010.

UNDERGRADUATE STUDENT ADVISING AND MENTORING (RESEARCH INTERNS):

1. Ahmad Abdelaziz – Department of Exercise Science, Rutgers University (Spring 2011)
2. Alex Burdzy – Department of Exercise Science, Rutgers University (Spring 2011, Summer 2011, Fall 2011, Spring 2012)
3. Sebastian Roque – Department of Exercise Science, Rutgers University (Spring 2011, Summer 2011, Spring 2012)
4. Jesse Liou – Department of Nutritional Sciences, Rutgers University (Spring 2012, Summer 2012, Fall 2012, Spring 2013)
5. David Weinstock – Department of Cell Biology and Neuroscience, Rutgers University (Summer 2012, Fall 2012, Spring 2013)
6. Stephen Danischewski – Department of Exercise Science, Rutgers University (Summer 2012)
7. Taylor Rae McConnell – Department of Animal Sciences, Rutgers University (Summer 2012, Fall 2012, Spring 2013, Summer 2013, Fall 2013, Spring 2014)
8. Daphne Bienkiewicz – Department of Exercise Science, Rutgers University (Fall 2013, Spring 2014)
9. Kristen Rizkalla – Department of Exercise Science, Rutgers University (Fall 2013, Spring 2014, Summer 2014)
10. Zunaira Khan – Department of Exercise Science, Rutgers University (Fall 2013, Spring 2014, Summer 2014)
11. Haider Ali Bhatti – Department of Exercise Science, Rutgers University (Fall 2013, Spring 2014, Summer 2014)
12. Jeffrey Lo – Department of Exercise Science, Rutgers University (Fall 2013, Spring 2014, Summer 2014)
13. Sukhpreet Kaur – UC Berkeley Bio-Manufacturing to Market Program, Kiverdi Internship (Summer 2015)
14. Ken Lim – UC Berkeley Bio-Manufacturing to Market Program, Kiverdi Internship (Fall 2015)
15. Michael Jagadpramana – UC Berkeley Bio-Manufacturing to Market Program, Kiverdi Internship (Spring 2016)
16. Valeria Martinez-Tenorio – Department of Nutrition Science, Purdue University (Fall 2019, Spring 2020; Fall 2020, Spring 2021)
17. Bailey Foster – Department of Nutrition Science, Purdue University (Spring 2020; Fall 2020, Spring 2021, Fall 2021, Spring 2022)
18. Juliauna Meyer – Department of Biological Sciences, Purdue University (Spring 2020; Fall 2020, Spring 2021, Summer, 2021, Fall 2021)

UNDERGRADUATE HONORS THESIS COMMITTEES:

1. Daniel Burke – Date completed: 2011. Department of Molecular Biology and Biochemistry, Rutgers University.
Thesis title: Addressing the Role of Healthspan and Exercise in *C. Elegans* Aging.

Primary advisor: Monica Driscoll

Role: **Committee member**.

2. Jesse Liou – Date completed: 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: Effect of *trans*-fatty acids on sarcopenia in SAMP8 mice.

Primary advisor: Gregory Henderson

Role: **Primary advisor**.

3. David Weinstock – Date completed: 2013. Department of Cell Biology and Neuroscience, Rutgers University.

Thesis title: Effects of α -linolenic acid supplementation on disease severity in mdx mice.

Primary advisor: Gregory Henderson

Role: **Primary advisor**.

4. Kayla Pinzone – Date completed: 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: Nutritional Supplement Consumption Among College and High School Athletes and the Reasons Behind Use.

Primary advisor: Shawn Arent

Role: **Reader**

5. Brianna Costabile – Date completed: 2014. Department of Food Science, Rutgers University.

Thesis title: Role of Low-Density Lipoprotein Receptor in the Uptake and Metabolism of B-Carotene in the Maternal Liver

Primary advisor: Loredana Quadro

Role: **Reader**

6. Brian Chang – Date completed: 2014. Department of Molecular Biology and Biochemistry, Rutgers University.

Thesis title: Vitamin D receptor and estrogen receptor gene polymorphisms influence bone health

Primary advisor: Sue Shapses

Role: **Committee member**.

7. Keith Anacker – Date completed: 2015. Department of Exercise Science, Rutgers University.

Thesis title: Exercise as a countermeasure against bone loss in ovarian hormone deficiency.

Primary advisor: Brandon Alderman

Role: **Research advisor**.

8. Albert Chang – Date completed: 2015. Department of Exercise Science, Rutgers University.

Thesis title: Energy substrate selection during sitting, standing, and walking.

Primary advisor: Brandon Alderman

Role: **Research advisor**.

MASTERS THESIS COMMITTEES:

1. Claudia Pop – Date completed: 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: Bone Mineral Density and Hormonal Response to Moderate Weight Loss in Older Men

Primary advisor: Sue Shapse

Role: **Committee member**.

2. Samantha Dori – Date completed: 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: The Role of Glutamine in the Function and Cytokine Secretion of 3T3-L1 Adipocytes and RAW264.7 Macrophages

Primary advisor: Malcolm Watford

Role: **Committee member**.

3. James Foster – Date completed: 2021. Department of Nutrition Science, Purdue University.
Thesis title: Impact of Consumption of a Mediterranean-Style Eating Pattern Including Modified Protein Sources on Plasma Lipid Profiles and Health Status Markers in Moderately Obese Middle-Aged Adults.
Primary advisor: Jay Burgess
Role: **Committee member**.

DOCTORAL THESIS COMMITTEES:

1. Devon L. Golem – Date completed: May, 2012. Department of Nutritional Sciences, Rutgers University.

Thesis title: Improving Physical Performance: the role of jaw repositioning.

Primary advisor: Shawn Arent

Role: **Committee member**.

2. Patrick M. Davitt – Date completed: January, 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: Endurance and Resistance Exercise, Acute Postprandial Effects and Chronic Training Adaptations.

Primary advisor: Shawn Arent

Role: **Committee member**.

3. Varsha Shete – Date completed: September, 2013. Department of Food Science, Rutgers University.

Thesis title: The role of lipoprotein receptors in the uptake of maternally circulating β -carotene by the developing tissues

Primary advisor: Loredana Quadro

Role: **Committee member**.

4. John Douglas – Date completed: December, 2013. Department of Nutritional Sciences, Rutgers University.

Thesis title: Accumulation and metabolism of neutral lipids in obesity.

Primary advisor: Judith Storch

Role: **Committee member**.

5. Marc A. Tuazon – Date completed: April, 2015. Department of Nutritional Sciences, Rutgers University.

Thesis title: Hepatic triglyceride secretion and metabolism in response to exercise

Primary advisor: Sarah Campbell

Role: **Research advisor**.

6. Heli Xu – Date completed: February, 2019. Department of Nutritional Sciences, Rutgers University.

Thesis title: Metabolic changes in skeletal muscle underlie improved exercise capacity in liver fatty acid-binding protein null mice.

Primary advisor: Judith Storch

Role: **External committee member**.

7. Jiamin Qui – Date completed: TBD. Department of Animal Sciences, Purdue University.

Thesis title: TBD.

Primary advisor: Shihuan Kang

Role: **Committee member**.

8. Gavin Connolly – Date completed: TBD. Department of Nutrition Science, Purdue University.

Thesis title: TBD.

Primary advisor: Wayne Campbell

Role: **Committee member**.

9. Alyssa Zembroski – Date completed: April 2, 2021. Department of Nutrition Science, Purdue University.

Thesis title: Cytoplasmic lipid droplets in metabolic disease.

Primary advisor: Kim Buhman

Role: **Committee member**.

10. Afsoun Abdollahi – Date completed: TBD. Department of Nutrition Science, Purdue University.

Thesis title: TBD.

Primary advisor: Gregory Henderson

Role: **Primary advisor**

11. Yi Zhang – Date completed: TBD. Department of Nutrition Science, Purdue University.

Thesis title: TBD.

Primary advisor: Gregory Henderson

Role: **Primary advisor**