

Sean A. Newsom, Ph.D.

Assistant Professor | Kinesiology
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A. EDUCATION AND EMPLOYMENT INFORMATION

Employment Information

Assistant Professor | Kinesiology 2015-Present
School of Biological and Population Health Sciences
College of Public Health and Human Sciences
Oregon State University, Corvallis, OR

Education and Training

Postdoctoral Fellow Division of Endocrinology, Metabolism and Diabetes 2014-2015
University of Colorado School of Medicine, Aurora, CO
Mentor: Bryan C. Bergman, Ph.D.

Postdoctoral Fellow Department of Pediatrics – Division of Neonatology 2012-2014
University of Colorado School of Medicine, Aurora, CO
Mentor: Jacob E. Friedman, Ph.D.

Ph.D. Kinesiology – Exercise Physiology 2007-2012
University of Michigan, Ann Arbor, MI
Mentor: Jeffrey F. Horowitz, Ph.D.

M.S. Health and Exercise Science – Exercise and Nutrition 2005-2007
Colorado State University, Fort Collins, CO
Mentor: Christopher Bell, Ph.D.

B.S. Kinesiology – Exercise Science 2000-2004
Michigan State University, East Lansing, MI
Mentor: Christopher J. Womack, Ph.D.

Certifications

2016-21 Advanced Cardiovascular Life Support (ACLS) Provider | American Heart Association

Professional Development

2012-13 Responsible Conduct of Research | University of Colorado School of Medicine
Interactive 9-part series related to ethical research practices

2013 Grant Writing Approach | University of Colorado School of Medicine
Interactive 1-day session dedicated to biomedical sciences grant writing

2013-14 Colorado Mentor Training Program | University of Colorado School of Medicine
Interactive 7-part series related to effective communication between mentors and mentees

2014 Laboratory Management | University of Colorado School of Medicine
Interactive 1-day session dedicated to biomedical sciences laboratory management

- 2014 Grant Writer's Seminar and Workshop | Oregon State University
Interactive 1-day session followed by assisted grant proposal development
- 2017 Workshop on High Resolution O2k-FluorRespirometry | Oroboros Instruments
Comprehensive 5-day course on mitochondrial measurements using O2k instruments
- 2017 Isotope Tracers in Metabolic Research | National Institutes of Health
Interactive 5-day course in isotope tracer methodology for metabolic research
- 2017 Visiting Scholar | Hospital for Sick Kids, Toronto, Canada
Trained with Amira Klip, Ph.D. as part of my KL2 career development
- 2018 Visiting Scholar | Oregon Health & Science University, Portland, OR
Trained with Charles Roberts, Ph.D. as part of my KL2 career development
- 2018 Grant Writer's Seminar and Workshop | Oregon Health & Science University
Interactive 1-day session with trainees and junior faculty
- 2018 Design Studio | Oregon Health & Science University
Interactive review of preliminary draft of a federal grant proposal
- 2019 Navigating Bias in Working and Learning Environments | Oregon State University
Interactive workshop to develop skills for recognizing and responding to bias incidents

Professional Memberships

American College of Sports Medicine
 American Diabetes Association
 American Physiological Society

B. TEACHING, ADVISING AND OTHER ASSIGNMENTS

Credit Courses – Oregon State University

<u>Term</u>	<u>Course</u>	<u>Credits</u>	<u>Role</u>	<u>Enrollment</u>
2015-Fall	KIN 324 Exercise Physiology	4	Instructor	79
2016-Spring	KIN 324 Exercise Physiology	4	Instructor	70
2016-Fall	KIN 324 Exercise Physiology	4	Instructor	83
2016-Fall	KIN 533 Energetics and Biochemistry of Exercise	3	Co-Instructor	6
2017-Fall	KIN 324 Exercise Physiology	4	Instructor	128
2018-Winter	KIN 324 Exercise Physiology	4	Instructor	62
2018-Fall	KIN 324 Exercise Physiology	4	Instructor	127
2018-Fall	KIN 533 Energetics and Biochemistry of Exercise	3	Instructor	6

Independent Study – Oregon State University

<u>Term</u>	<u>Course</u>	<u>Student</u>	<u>Credits</u>
2016-Fall	NUTR 603 Thesis	Sarah Ehrlicher	5
2017-Winter	KIN 601 Research and Scholarship	Harrison Stierwalt	6
2017-Winter	NUTR 603 Thesis	Sarah Ehrlicher	6
2017-Spring	NUTR 603 Thesis	Sarah Ehrlicher	4
2017-Summer	NUTR 603 Thesis	Sarah Ehrlicher	3
2017-Fall	NUTR 603 Thesis	Sarah Ehrlicher	12
2017-Fall	KIN 401 Research and Scholarship	Emily Burney	3

2017-Fall	KIN 401 Research and Scholarship	Bergen Sather	6
2017-Fall	NUTR 603 Thesis	Sarah Ehrlicher	12
2018-Winter	NUTR 603 Thesis	Sarah Ehrlicher	12
2018-Spring	NUTR 603 Thesis	Sarah Ehrlicher	1
2018-Fall	NUTR 603 Thesis	Sarah Ehrlicher	12
2019-Winter	NUTR 603 Thesis	Sarah Ehrlicher	12
2019-Spring	NUTR 603 Thesis	Sarah Ehrlicher	12

Curriculum Development

2015	Created all new course materials for KIN 324 Exercise Physiology, including use of the current edition of the textbook and enhanced focus on human health outcomes and applications.
2016	Developed a new course, KIN 531 Physiology of Physical Activity and Inactivity, including a successful Category II Proposal.
2016	Co-created all new course materials for KIN 533 Energetics and Biochemistry, including enhanced focus on reductionist human research study design and interpretation.

Students and Postdoctoral Trainees

Ph.D. Committee Chair or Co-Chair*

<u>Student</u>	<u>Program</u>	<u>Year</u>
Sarah Ehrlicher*	Nutrition	2016-Present
Harrison Stierwalt*	Kinesiology	2016-Present

Ph.D. Committee Member

<u>Student</u>	<u>Program</u>	<u>Year</u>
Staci Bronson	Kinesiology	2016-Present
Félix Alberto Morales-Palomo	Universidad de Castilla-La Mancha	2018 (graduated)
Alexa Pullicin	Food Science and Technology	2019-Present

M.S. Committee Member

<u>Student</u>	<u>Program</u>	<u>Year</u>
Aaron Seipel	Kinesiology	2015-18 (graduated)

Graduate Council Representative

<u>Student</u>	<u>Program</u>	<u>Year</u>
Sanket Chiplunkar	Biomedical Sciences	2016-18 (graduated)
Vera Lattier (Chih-Ning Chang)	Molecular and Cellular Biology	2017-18 (graduated)
Timothy Muller	Comparative Health Sciences	2017-Present
Brandy Nagamine	Comparative Health Sciences	2017-Present
Ramila Gulieva	Bioengineering	2019-Present

Undergraduate Honors Thesis Committee Chair or Co-Chair*

<u>Student</u>	<u>Program</u>	<u>Year</u>
Bergen Sather*	Biology and Public Health	2015-18 (graduated)
Emily Burney*	Public Health	2016-18 (graduated)
Isabel Brinck*	Biochemistry and Biophysics	2018-Present

Undergraduate Honors Thesis Committee Member

<u>Student</u>	<u>Program</u>	<u>Year</u>
Tora Cobb	Chemistry	2015-16 (graduated)
Kevin Le	Kinesiology	2018 (graduated)

Other Undergraduate Mentorship or Co-Mentorship*

<u>Student</u>	<u>Program</u>	<u>Year</u>
Bergen Sather*	Undergraduate Research Awards Program (URAP)	2016
Bergen Sather*	Undergraduate Research, Innovation, Scholarship and Creativity Award (URISC)	2016
Bergen Sather*	Undergraduate Research Awards Program (URAP)	2017
Emily Burney*	Undergraduate Research Awards Program (URAP)	2017
Bergen Sather*	Summer Undergraduate Research Experience (SURE)	2017
Emily Burney*	Undergraduate Research, Innovation, Scholarship and Creativity Award (URISC)	2017-18
Ryan Wong*	Undergraduate Research Assistant	2017-18
Emily Burney*	DeLoach Work Scholarship	2018
Alysha Everett*	Undergraduate Research Assistant	2018
Bailey Sahnov*	Undergraduate Research Assistant	2018
Blake Nelson*	Undergraduate Research Assistant	2018-19
Catherine Du*	Undergraduate Research, Scholarship, and the Arts (URSA Engage)	2018-19
	Undergraduate Research, Scholarship, and the Arts (URSA Engage)	2018-19
Jason Hashimoto*	Undergraduate Research, Scholarship, and the Arts (URSA Engage)	2018-19
Jacqueline Oropeza-Castro*	Undergraduate Research Assistant	2018-Present
Victoria Boechler*	Undergraduate Research Assistant	2018-Present
Jackson Brim-Edwards*	Undergraduate Research Assistant	2018-Present
Jackson Brim-Edwards*	Experiential Learning Laboratory Assistant	2019

Visiting Scholar Mentorship

<u>Student</u>	<u>Program</u>	<u>Year</u>
Félix Alberto Morales-Palomo	Universidad de Castilla-La Mancha	2018

Student Evaluation

Course	Term	Year	Number of Evaluations/ Enrollment	Question 1* (Newsom/OSU)	Question 2 (Newsom/OSU)
KIN 324	Fall	2015	50 / 79	5.8 / 5.0	5.9 / 5.2
KIN 324	Spring	2016	47 / 68	5.8 / 5.0	5.9 / 5.2
KIN 324	Fall	2016	59 / 82	5.8 / 5.0	5.9 / 5.3
KIN 533	Fall	2016	5 / 6	5.3 / 5.0	5.7 / 5.3
KIN 324	Fall	2017	80 / 128	5.7 / 5.1	5.8 / 5.3
KIN 324	Winter	2018	27 / 62	5.8 / 5.0	6.0 / 5.2
KIN 324	Fall	2018	61 / 127	5.8 / 5.1	5.9 / 5.4
KIN 533	Fall	2018	5 / 6	6.0 / 5.1	6.0 / 5.4

*Median scores for Question 1: "This course as a whole was..." and Question 2: "The instructor's contribution to the course was..." with ratings of "1=very poor, 2=poor, 3=fair, 4= good, 5=very good and 6=excellent"

Peer Evaluation

C. SCHOLARSHIP AND CREATIVE ACTIVITY

Authorship Notations

¹Contributed to hypothesis and/or study design

²Collected and/or analyzed data

³Interpreted data

⁴Critical review and revision of manuscript

⁵Primary author of manuscript

⁶Senior author of manuscript

Advisee Notations

*Graduate student advisee at Oregon State University

**Undergraduate student advisee at Oregon State University

Refereed Journal Articles

1. **Newsom SA**^{1,2,3,5}, RJ Paxton, GM Rynn and C Bell. Oxidative stress and thermic effect of feeding in overweight and obese adults. *Obesity* 16(8): 1749-1754, 2008 PMID:18551121
2. **Newsom SA**^{1,2,3,5}, S Schenk, KM Thomas, MP Harber, ND Knuth, N Goldenberg and JF Horowitz. Energy deficit after exercise augments lipid mobilization but does not contribute to the exercise-induced increase in insulin sensitivity. *J Appl Physiol* 108(3):554-560, 2010 PMID:20044472
3. **Newsom SA**^{1,2,3,5}, JC Richards, TK Johnson, JN Kuzma, MC Lonac, RJ Paxton, G Rynn, WF Voyles and C Bell. Short-term sympathoadrenal inhibition augments the thermogenic response to beta-adrenergic receptor stimulation. *J Endocrinol* 206(3):307-315, 2010 PMID:20603265
4. **Newsom SA**^{1,2,3,5}, S Schenk, M Li, AC Everett and JF Horowitz. High fatty acid availability after exercise alters the regulation of muscle lipid metabolism. *Metabolism* 60(6):852-859, 2011 PMID:20870251
5. Paxton RJ, MP Malcolm, **SA Newsom**^{1,2,3,4}, JC Richards, GM Rynn and C Bell. Sympathetic responses to repetitive trans-spinal magnetic stimulation. *Clin Auton Res* 21(2):81-87, 2011 PMID:21113641
6. **Newsom SA**^{1,2,3,5}, AC Everett, A Hinko and JF Horowitz. A single session of low intensity exercise is sufficient to enhance insulin sensitivity into the next day in obese adults. *Diabetes Care* 36(9):2516-2522, 2013 PMID:23757424
7. Boyle KE, **SA Newsom**^{2,3,4}, RC Janssen, M Lappas and JE Friedman. Skeletal muscle MnSOD, mitochondrial complex II and SIRT3 enzyme activities are decreased in maternal obesity during human pregnancy and gestational diabetes mellitus. *J Clin Endocr Metab* 98(10):E1601-E1609, 2013 PMID:23956348
8. Thorn SR, K Baquero, **SA Newsom**^{1,2,3,4}, KC El Kasmi, BC Bergman, GI Shulman, KL Grove and JE Friedman. Maternal insulin resistance programs juvenile hepatic steatosis and inflammation. *Diabetes* 63(10):2702-2013, 2014 PMID:24705404
9. Van Pelt, DW, **SA Newsom**^{1,2,3,4}, S Schenk and JF Horowitz. Systemic fatty acid availability and skeletal muscle inflammatory pathway activation may contribute to the variability in insulin sensitivity found in obesity. *Int J Obes* 39(1):149-155, 2015 PMID: 24785103
10. **Newsom SA**^{1,2,3,5}, AC Everett, S Park, DW Van Pelt, A Hinko and JF Horowitz. Lipid mixtures containing a high proportion of saturated fatty acids only modestly impair insulin signaling in cultured muscle cells. *PLoS One* 10(3):e0120871, 2015 PMID:25793412
11. **Newsom SA**^{1,2,3,5}, JT Brozinick, K Kiseljak-Vassiliades, AN Strauss, SD Bacon, AA Kerege, HH Bui, P Sanders, P Siddall, T Wei, M Thomas, MS Kuo, T Nemkov, A D'Alessandro, KC Hansen, L Perreault and

BC Bergman. Skeletal muscle phosphatidylcholine and phosphatidylethanolamine are related to insulin sensitivity and respond to acute exercise in humans. *J Appl Physiol* 120(11):1355-63, 2016 PMID:27032901

12. **Newsom SA**^{2,3,4}, BF Miller, KL Hamilton, SE Ehrlicher*, HD Stierwalt* and MM Robinson. Long-term rates of mitochondrial protein synthesis are increased in mouse skeletal muscle with high fat feeding regardless of insulin sensitizing treatment. *Am J Physiol Endocrinol Metab* 313(5):E552-E562, 2017 PMID: 28698283
13. Perreault L, **SA Newsom**^{2,3,4}, A Strauss, A Kerege, D Kahn, K Harrison, J Snell-Bergeon, T Nemkov, A D'Alessandro, M Jackman, P MacLean and BC Bergman. Intracellular Localization of Diacylglycerols and Sphingolipids Influence Insulin Sensitivity, Mitochondrial Function in Human Skeletal Muscle. *JCI Insight* 3(3) pii:96805, 2018 PMID:29415895
14. Dasari S, **SA Newsom**^{1,2,3,4}, SE Ehrlicher*, HD Stierwalt* and MM Robinson. Remodeling of skeletal muscle proteome with high-fat diet involves greater changes to β -oxidation than electron transfer proteins in mice. *Am J Physiol Endocrinol Metab* 315(4):E425-34, 2018 PMID:29812987
15. Ehrlicher SE*, Stierwalt SD, S Dasari, **SA Newsom**^{1,2,3,4} and MM Robinson. Skeletal muscle autophagy remains responsive to hyperinsulinemia and hyperglycemia at higher plasma insulin concentrations in insulin-resistant mice. *Physiol Rep* 6(14):e13810, 2018 PMID:30047243
16. Stierwalt HD*, SE Ehrlicher*, BC Bergman, MM Robinson and **SA Newsom**^{1,2,3,6}. Insulin-stimulated Rac1-GTP binding is not impaired by palmitate treatment in L6 myotubes. *Physiol Rep* 6(24):e13956, 2018 PMID:30592185
17. Sachs S, S Zarini, DE Kahn, KA Harrison, L Perreault, T Phang, **SA Newsom**^{1,2,3,4}, A Strauss, A Kerege, JA Schoen, DH Bessesen, T Schwarzmayr, E Graf, D Lutter, J Krumsiek, S Hofmann and BC Bergman. Intermuscular adipose tissue (IMAT) directly modulates skeletal muscle insulin sensitivity in humans. *Am J Physiol Endocrinol Metab* 316(5):E866-79, 2019 PMID:30620635
18. Robinson MM, BK Sather**, ER Burney**, SE Ehrlicher*, HD Stierwalt*, MA Franco and **SA Newsom**^{1,2,3,5,6}. Robust intrinsic differences in mitochondrial metabolism between L6 and C2C12 cells. *Am J Physiol Cell Physiol* 217(2):C339-47, 2019 PMID:31091142
19. Axton ER, LM Beaver, L St. Mary, L Truong, CR Logan, SSpagnoli, MC Prater, RM Keller, M Garcia-Jaramillo, SE Ehrlicher, HD Stierwalt, **SA Newsom**, MM Robinson, RL Tanguay, JF Stevens and NG Hord. Nitrate treatment, but not nitrite, lowered the oxygen cost of exercise, and decreased glycolytic intermediates while increasing fatty acid metabolites in exercised zebrafish. *J Nutr* doi: 10.1093/jn/nxz202 [Epub ahead of print] PMID:3145890
20. Stierwalt HD*, SE Ehrlicher*, MM Robinson and **SA Newsom**^{1,2,3,6}. Regulation of skeletal muscle long-chain acyl-CoA synthetases by diet and exercise. *Med Sci Sports Exerc* – accepted for publication 9/9/2019

Invited Articles

1. **Newsom SA**^{1,5}, KE Boyle and JE Friedman. Sirtuin 3: A major control point for obesity-related metabolic diseases? *Drug Discov Today Dis Mech* 10(1-2):e35-e40, 2013 PMID:23997790
2. **Newsom SA**^{1,5} and S Schenk. Interaction between lipid availability, endurance exercise and insulin sensitivity. *Medicine and Sports Science: Physical Activity and Diabetes*. Goedecke J, Ojuka EO (Eds). Karger Medical and Scientific Publishers, Basel, Switzerland. Vol. 60, 2014 PMID: 25226801

Manuscripts in Review

1. Ehrlicher SE*, HD Stierwalt*, BF Miller, **SA Newsom** and MM Robinson. Mitochondrial adaptations to exercise and high-fat diet-induced obesity do not require Bcl2-mediated autophagy but occur with BNIP3/Parkin activation.

Manuscripts in Progress

2. Stierwalt HD*, SE Ehrlicher*, BC Bergman, MM Robinson and **SA Newsom**. Acute combined hyperinsulinemia and hyperglycemia stimulates accumulation of skeletal muscle diacylglycerols and ceramides in high fat fed obese mice.

Peer-reviewed Conference Proceedings

1. Fitch SM*, K Kia*, **SA Newsom**^{1,2,3,4}, J Kim. Physiological and Muscular Stress Associated with Multi-axial Whole-Body Vibration Exposure in Mining Heavy Equipment Vehicle Environment. Human Factors and Ergonomics Society 2019 International Annual Meeting

Presented Abstracts

1. **Newsom SA**, RJ Paxton, LM Trombley, WF Voyles and C Bell. Use of clonidine to treat hypertension: implications for regulation of resting metabolism. North American Association for the Study of Obesity – 2006
2. **Newsom SA**, RJ Paxton, LM Trombley, WF Voyles and C Bell. Use of clonidine to treat hypertension: implications for regulation of resting metabolism. American College of Sports Medicine Rocky Mountain Chapter – 2006
3. Paxton RJ, MP Malcolm, **SA Newsom**, GM Rynn, HW Maddox, D Strevey, SK Little, JC Richards, RJ Supon, KR Heulin and C Bell, Manipulation of the sympathetic nervous system with repetitive trans-spinal magnetic stimulation in healthy adult humans. American College of Sports Medicine Rocky Mountain Chapter – 2006
4. Maddox HW, **SA Newsom**, RJ Paxton, GM Rynn, MK Tran, DR Strevey, SK Little and C Bell. Influence of ascorbic acid on the thermic effect of feeding in overweight and obese adults. American College of Sports Medicine Rocky Mountain Chapter - 2006
5. Bell C, **SA Newsom**, RJ Paxton, HW Maddox, GM Rynn, MK Tran, DR Strevey and SK Little. Influence of ascorbic acid on the thermic effect of feeding in overweight and obese adults. North American Association for the Study of Obesity – 2007
6. Paxton RJ, MP Malcolm, **SA Newsom**, GM Rynn, HW Maddox, D Strevey, SK Little, JC Richards, RJ Supon, KR Heulin and C Bell, Manipulation of the sympathetic nervous system with repetitive trans-spinal magnetic stimulation in healthy adult humans. Federation of American Societies for Experimental Biology – 2008
7. **Newsom SA**, S Schenk and JF Horowitz. Fat oxidation tracks with fatty acid availability at low but not high plasma fatty acid concentrations. Federation of American Societies for Experimental Biology Annual Meeting – 2008
8. **Newsom SA**, RJ Paxton, JC Richards, GM Rynn, WF Voyles and C Bell. Influence of Short-Term Inhibition of sympathetic nervous system activity on thermogenic response to beta-adrenergic receptor stimulation. North American Association for the Study of Obesity – 2008
9. **Newsom SA**, KM Thomas, S Schenk, MP Harber, ND Knuth, N Goldenberg and JF Horowitz. Reducing dietary fat from meals after exercise enhances muscle glycogen resynthesis. Integrative Biology of Exercise – 2008

10. **Newsom SA**, KM Thomas, S Schenk, MP Harber, ND Knuth, N Goldenberg and JF Horowitz. Energy deficit after exercise may not contribute to the exercise-induced increase in insulin sensitivity. International Biochemistry of Exercise Conference – 2009
11. **Newsom SA**, KM Thomas, S Schenk, MP Harber, ND Knuth, N Goldenberg and JF Horowitz. Energy deficit after exercise may not contribute to the exercise-induced increase in insulin sensitivity. Exercise in the Management and Prevention of Metabolic Disease symposium at the Karolinska Institute of Stockholm, Sweden – 2009
12. Tracy B, C Bell, C Feldman, L Hitchcock, **S Newsom**, R Paxton, J Richards, W Voyles and S Welsh. Reduced motor output fluctuations with sympathetic inhibition: potential age-related differences. Society for Neuroscience – 2009
13. **Newsom SA**, S Schenk, M Li, AC Everett and JF Horowitz. Elevated fatty acid availability after exercise increases intramyocellular triglyceride content by enhancing capacity for fatty acid flux into skeletal muscle. Federation of American Societies for Experimental Biology – 2010
14. **Newsom SA**, S Schenk, MP Harber, CF Burant and JF Horowitz. Insulin sensitivity is lowest in obese women with high rates of fatty acid uptake. American College of Sports Medicine Conference on the Integrative Physiology of Exercise – 2010
15. **Newsom SA**, AC Everett and JF Horowitz. A single session of exercise improves insulin sensitivity in obese adults: effects of exercise intensity. American College of Sports Medicine – 2011
16. **Newsom SA**, AC Everett, A Hinko and JF Horowitz. Improved insulin sensitivity the day after a modest session of exercise in obese adults. American College of Sports Medicine – 2012
17. **Newsom SA**, AC Everett, A Hinko and JF Horowitz. The severe impairment in insulin signaling with palmitate in cultured muscle cells not found with physiologic mixtures of fatty acids. American Diabetes Association Scientific Sessions – 2012
18. Park S, JP Gumucio, A Hinko, **SA Newsom** and JF Horowitz. Insulin signaling in myotubes derived from obese adults was not impaired in response to a mixture of fatty acids resembling that found in human plasma. Integrative Biology of Exercise – 2012
19. Thorn SR, **SA Newsom**, R Aikens, RC Janssen, K Baquero, DL Takahashi, A Kostuba, KL Grove and JE Friedman. Exposure to maternal high fat diet suppresses mitochondrial number and SIRT3 in non-human primate fetal liver: Further evidence for lipotoxicity in utero. Keystone Symposia Conference – Diabetes: New Insights into Mechanism of Disease and its Treatment – 2013
20. Van Pelt, DW, **SA Newsom**, S Schenk and JF Horowitz. Systemic fatty acid availability and skeletal muscle inflammatory pathway activation may contribute to the variability in insulin sensitivity found in obesity. Federation of American Societies for Experimental Biology – 2013
21. Boyle KE, **SA Newsom**, RC Janssen, M Lappas and JE Friedman. Decreased Sirt3 activity contributes to oxidative stress and mitochondrial dysfunction in skeletal muscle of obese women during pregnancy. American Diabetes Association Scientific Sessions – 2013
22. Thorn SR, **SA Newsom**, R Aikens, RC Janssen, K Baquero, DL Takahashi, A Kostuba, KL Grove and JE Friedman. Maternal resveratrol supplementation reverses fetal hepatic lipid accumulation during maternal high fat diet exposure in non-human primate: Effects on mitochondrial activity and stress signals. Endocrinology Society – 2013
23. **Newsom SA**, CM Castorena, RC Janssen, GD Cartee and JE Friedman. No evidence for impaired hepatic mitochondrial acetylation with acute high fat diet-induced insulin resistance and hepatic lipid accumulation. Keystone Symposia Conference – Obesity: A Multisystems Perspective – 2014

24. Danjun MA, **SA Newsom**, X Zhang, Y Qi, JF Horowitz and Z Yi. Exercise regulation on skeletal muscle phosphoproteome in obese insulin resistant adults. American Diabetes Association Scientific Sessions – 2014
25. **Newsom SA**, AK Kerege, L Perreault and BC Bergman. Improved skeletal muscle diacylglycerol localization and composition after a single session of exercise. American Diabetes Association Scientific Sessions – 2015
26. Sather BK**, CM Castorena, GD Cartee and **SA Newsom**. Influence of diacylglycerol on cytoskeleton and insulin signaling. Oregon State University Celebration of Undergraduate Excellence – 2016
27. Stierwalt HD*, **SA Newsom** and MM Robinson. High fat diet-induced insulin resistance is not associated with impaired mitochondrial respiration or increased H₂O₂ emission in mouse skeletal muscle. American Diabetes Association Scientific Sessions – 2017
28. Ehrlicher SE*, **SA Newsom** and MM Robinson. Long-term rates of skeletal muscle mitochondrial protein synthesis are increased with high fat feeding but not changed with insulin sensitizing treatment in mice. American Diabetes Association Scientific Sessions – 2017
29. Sather BK**, SE Ehrlicher*, HD Stierwalt*, MM Robinson and **SA Newsom**. Impaired cytoskeletal signaling as a mechanism of skeletal muscle insulin resistance. Oregon State University Celebration of Undergraduate Excellence – 2017
30. Burney ER**, BK Sather**, SE Ehrlicher*, HD Stierwalt*, **SA Newsom** and MM Robinson. Skeletal muscle autophagy remains responsive to insulin despite the development of insulin resistance. Oregon State University Celebration of Undergraduate Excellence – 2017
31. Stierwalt HD*, BC Bergman, MM Robinson and **SA Newsom**. Identifying lipids as regulators of skeletal muscle Rac1 using targeted lipidomics. Mayo Metabolomics Symposium – 2017
32. Ehrlicher SE*, S Dasari, **SA Newsom** and MM Robinson. Intact autophagy signaling and remodeling of the mitochondrial proteome towards enhanced lipid metabolism in skeletal muscle of high fat fed mice. Mayo Metabolomics Symposium – 2017
33. Sather BK**, SE Ehrlicher*, ER Burney**, MM Robinson and **SA Newsom**. Characterizing and comparing cellular respiration and mitochondrial metabolism in C2C12 and L6 myoblasts. Oregon State University College of Science Awards – 2017
34. Stierwalt HD*, BC Bergman, MM Robinson and **SA Newsom**. Regulation of skeletal muscle Rac1 by lipids in obesity-related insulin resistance. American College of Sports Medicine Northwest Annual Meeting – 2018
35. Ehrlicher SE*, S Dasari, **SA Newsom** and MM Robinson. Skeletal muscle mitochondrial remodeling and autophagy activation in high fat fed and exercise trained mice. American College of Sports Medicine Northwest Annual Meeting – 2018
36. Stierwalt HD*, BC Bergman, SE Ehrlicher*, MM Robinson and **SA Newsom**. Transient activation of skeletal muscle Rac1 in obesity-related insulin resistance. American Diabetes Association Scientific Sessions – 2018
37. Ehrlicher SE*, HD Stierwalt*, **SA Newsom** and MM Robinson. Mitochondrial function in high fat fed and exercise trained mice unable to induce autophagy. American Diabetes Association Scientific Sessions – 2018
38. **Newsom SA**, L Perreault, A Kerege, K Harrison, D Kahn, T Nemkov, A D'Alessandro and BC Bergman. Metabolic signatures of insulin resistance in human skeletal muscle are exacerbated with insulin stimulation. American Diabetes Association Scientific Sessions – 2018

39. Broussard JL, L Perreault, **SA Newsom**, DE Kahn, A Kerege, KA Harrison and BC Bergman. Sex differences in insulin sensitivity are related to muscle tissue acylcarnitines and serum lysophosphatidylcholines but not subcellular lipid distribution in humans. American Diabetes Association Scientific Sessions – 2018
40. Zarini S, L Perreault, **SA Newsom**, DE Kahn, A Kerege, KA Harrison and BC Bergman. Deoxysphingolipids – novel skeletal muscle lipids related to insulin resistance in humans that decrease insulin sensitivity in vitro. American Diabetes Association Scientific Sessions – 2018
41. Wong R**, HD Stierwalt*, SE Ehrlicher*, MM Robinson and **SA Newsom**. Identifying the role of complex II in beta-oxidation using high resolution respirometry. Oregon State University Summer Undergraduate Research Symposium – 2018
42. Stierwalt HD*, SE Ehrlicher*, MM Robinson and **SA Newsom**. Post-exercise insulin sensitivity is unrelated to metabolic flexibility or fat oxidation capacity in lean humans. Integrative Physiology of Exercise – 2018
43. Stierwalt HD*, SE Ehrlicher*, MM Robinson and **SA Newsom**. Regulation of skeletal muscle long chain acyl coenzyme A synthetase by diet and exercise. Annual Meeting for the Northwest American College of Sports Medicine – 2019
44. Brim-Edwards J**, HD Stierwalt*, MM Robinson and **SA Newsom**. Verification of glucose values measured by a handheld glucometer during insulin sensitivity testing in sedentary humans. Oregon State University Celebration of Undergraduate Excellence – 2019
45. Boechler V**, SE Ehrlicher*, HD Stierwalt*, **SA Newsom** and MM Robinson. Involvement of autophagy in electron transfer flavoprotein adaptations during exercise and high fat feeding in skeletal muscle of mice. Oregon State University Celebration of Undergraduate Excellence – 2019
46. Hashimoto J**, SE Ehrlicher*, HD Stierwalt*, **SA Newsom** and MM Robinson. Mitochondrial supercomplex analysis in skeletal muscle of younger and older mice. Oregon State University Celebration of Undergraduate Excellence – 2019
47. Kahn DE, Zarini S, L Perreault, **SA Newsom**, KA Harrison and BC Bergman. Intramuscular triglyceride subcellular localization is related to insulin sensitivity in humans. American Diabetes Association Scientific Sessions – 2019
48. Broussard JL, DE Kahn, **SA Newsom**, DE Kahn, JT Brozinick, H Bui, KD Roth, L Perreault and BC Bergman. Improvement in sphingolipids after combined weight loss and exercise training in adults with obesity and prediabetes. American Diabetes Association Scientific Sessions – 2019
49. Ehrlicher SE*, HD Stierwalt*, BF Miller, **SA Newsom** and MM Robinson. Obesity does not impair mitochondrial efficiency or adaptations to exercise training in autophagy deficient mice. FASEB Regulation of Glucose Metabolism Conference – 2019

Invited Presentations

1. Health 101: A 60 Minute Guide to Physical Activity and Nutrition. University of Michigan Air Force ROTC Annual Health and Wellness Lecture – 2007
2. Metabolic research at the Michigan Clinical Research Unit: Horowitz Lab Studies. Michigan Clinical Research Unit Continuing Education Seminar Series – 2010
3. Fatty acid partitioning: A major determinant of insulin sensitivity? Colorado State University Health and Exercise Science Seminar Series – 2012

4. Sirtuin 3: A therapeutic target for treatment of fatty liver? University of Colorado School of Medicine Division of Endocrinology, Metabolism and Diabetes Endocrine Research Conference – 2013
5. Improving metabolic health through translational science and refocused lifestyle interventions. Oregon State University School of Biological and Population Health Sciences Seminar Series – 2014
6. Altered skeletal muscle diacylglycerol localization and composition after exercise. University of Colorado School of Medicine Nutrition Seminar Series – 2014
7. Reshaping physical activity prescriptions for the treatment of insulin resistance. Linus Pauling Institute Diet and Optimum Health Conference – 2015
8. Lipid signaling in skeletal muscle responses to acute exercise. Symposium on Cell Signaling in Muscle and Tendon, American College of Sports Medicine Annual Meeting – 2016
9. Diacylglycerol regulation of skeletal muscle insulin signaling in obesity. Oregon State University Nutrition Seminar Series – 2016
10. Reframing physical activity prescriptions for improved metabolic health. Moore Family Center Food, Nutrition and Health Update – 2016
11. Translational metabolism research at Oregon State University. Oregon State University Nutrition Seminar Series – 2017
12. Translational metabolism research at Oregon State University. University of Oregon Human Physiology Seminar Series – 2017
13. Using acute exercise to identify novel treatment strategies for insulin resistance. American College of Sports Medicine Northwest Annual Meeting – 2018
14. Role of Rac1 in skeletal muscle insulin action and its regulation by lipids. Oregon State University College of Pharmacy Seminar Series – 2018

Grant Funding

Current

- John. C. Erkkila, M.D. Endowment for Health and Human Performance 07/2019-06/2020
 (PI: Robinson/Newsom)
 Title: *Use of exercise to restore mitochondrial protein turnover in obesity*
 Purpose: To identify impairments in mitochondrial protein turnover as a consequence of obesity that can be reversed by exercise activity.
 Role: Co-Principal Investigator
 Requested Funds: \$25,000
- Industry Partner Research Award (PI: Lim) 12/2018-06/2021
 Title: *Sensory mechanisms underlying preabsorptive glycemic responses*
 The goal of this collaborative project is to identify mechanisms responsible for the cephalic-phase insulin response following starch ingestion.
 Role: Consultant
 Direct Funds: \$418,075
- Alpha Foundation AFC618 (PI: Kim/Newsom) 08/2017-10/2019
 Title: *Effects of Whole-Body Vibration Exposure on Physiological Stresses in Mining Heavy Equipment Vehicle Operators*
 Purpose: To investigate mechanisms of musculoskeletal injury resulting from occupational whole-body vibration exposures in humans.

Role: Co-Principal Investigator
Direct Funds: \$129,000

Pending

ADA Innovative Clinical or Translational Science Award (PI: Robinson) Submitted 07/2019
Title: *Reversible regulation of muscle fat oxidation in type 2 diabetes*
Purpose: To provide critical and much needed insight into the regulation of skeletal muscle ETF function in humans, including the impact of obesity, T2D and exercise training on ETF activity and regulatory mechanisms.
Role: Collaborating Investigator
Requested Funds: \$600,000

Medical Research Foundation New Investigator Grant (PI: Newsom) Submitted 08/2019
Title: *Identifying mechanisms and reversal of excessive skeletal muscle lipid accumulation in obesity*
Purpose: To identify the role of insulin as a mechanism for skeletal muscle lipid accumulation in obesity.
Role: Principal Investigator
Requested Funds: \$50,000

Completed

KL2TR002370 (PI: Jacoby) 09/2017-09/2019
NIH/NCATS Mentored Career Development Award
Title: *Mechanisms of lipid-related skeletal muscle insulin resistance in obesity*
Purpose: To identify impairments in insulin-stimulated cytoskeletal remodeling in skeletal muscle of obese humans and to determine whether a single session of exercise is sufficient to reverse these impairments.
Role: PI/KL2 Scholar
Direct Funds: \$200,000

John. C. Erkkila, M.D. Endowment for Health and Human Performance 07/2017-06/2018
(PI: Newsom/Robinson)
Title: *Use of Exercise to Understand and Reverse Obesity-related Insulin Resistance*
Purpose: To investigate mechanisms of exercise improvements to skeletal muscle insulin signaling in humans.
Role: Co-Principal Investigator
Direct Funds: \$25,000

Collins Medical Trust Medical Research Grant (PI: Newsom/Robinson) 11/2016-11/2017
Title: *Novel and reversible mechanisms of skeletal muscle insulin resistance in human obesity*
Purpose: To identify impairments in insulin-stimulated cytoskeletal remodeling in skeletal muscle of obese humans and to determine whether a single session of exercise is sufficient to reverse these impairments.
Role: Co-Principal Investigator
Total Funds: \$30,000

Nutrition Obesity Research Center Pilot & Feasibility Grant (PI: Newsom) 09/2014-08/2015
University of Colorado School of Medicine
Title: *Exercise-induced skeletal muscle diacylglycerol localization and composition*
Purpose: To determine whether a single session of exercise is sufficient to favorably alter skeletal muscle diacylglycerol localization and composition.
Role: Principal Investigator
Total Funds: \$20,000

T32 DK07658 (PI: Krebs) 05/2014-04/2015
NIH/NIDDK Nutrition Research Fellowship Training Grant
Title: *Exercise-induced skeletal muscle diacylglycerol localization and composition*
Purpose: To determine whether a single session of exercise is sufficient to favorably alter skeletal muscle diacylglycerol localization and composition.

Role: PI/Postdoctoral Fellow (Research)
Funds: NIH Stipend

F32 DK095509 (PI: Newsom) 05/2012-04/2014
NIH/NIDDK Ruth L. Kirschstein National Research Service Award
Role of Sirt3 in modulation of lipotoxicity in liver
Purpose: To determine whether rescuing Sirt3 activity in the face of caloric excess may be sufficient to rescue liver function and attenuate the progression of metabolic disease.
Role: PI/Postdoctoral Fellow (Research)
Funds: NIH Stipend

Rackham Predoctoral Fellowship (PI: Newsom) 09/2010-08/2011
University of Michigan Rackham Graduate School
Effects of acute exercise and nutrient intake on muscle fat metabolism and insulin resistance in obesity
Purpose: To understand regulation of insulin action after exercise and enhance exercise and dietary lifestyle programs aimed at maximizing metabolic benefits of each exercise session in obese individuals.
Role: Predoctoral Fellow (Research)
Funds: Stipend/Tuition

D. SERVICE & VOLUNTEERISM

Program, School and College

- | | |
|---------|---|
| 2016 | Table Host CPHHS Ovation
<i>Facilitated discussion among students, preceptors and donors</i> |
| 2017 | Table Host CPHHS Ovation
<i>Facilitated discussion among students, preceptors and donors</i> |
| 2017 | Small Group Member Kinesiology Graduate Student Evaluation Policies and Procedures
<i>Revised the process for evaluating and reporting graduate student progress</i> |
| 2017-18 | Committee Member Kinesiology Experiential Learning Coordinator Search
<i>Evaluated candidates to fill Experiential Learning Coordinator position in Kinesiology</i> |
| 2017-18 | Committee Member CPHHS Curriculum Committee
<i>Reviewed curriculum changes and proposal for the College</i> |
| 2018 | Presenter CPHHS Board of Trustees Dinner
<i>Described aims and purpose of my research to trustees and University leadership</i> |
| 2018 | Peer Evaluator CPHHS Peer Teaching Observation
<i>Evaluated teaching and course materials for peer instructor</i> |
| 2018 | Poster Judge CPHHS Annual Graduate Student Research Poster Session
<i>Served as judge for graduate student research posters</i> |
| 2018 | Committee Member CPHHS Strategic Planning
<i>Contributed to 5-year planning related to research goals and tactics for the College</i> |
| 2018 | Host Laboratory CPHHS Undergraduate Research Program
<i>Provided 2-part research learning opportunity for undergraduate students</i> |
| 2019 | Poster Judge CPHHS Annual Graduate Student Research Poster Session
<i>Served as judge for graduate student research posters</i> |

- 2019 Peer Evaluator | CPHHS Peer Teaching Observation
Evaluated teaching and course materials for peer instructor
- 2019-20 Committee Member | CPHHS Graduate Quantitative Methods and Analysis Committee
Reviewed graduate-level quantitative methods curriculum for the College

University

- 2016-17 Committee Member | Institutional Review Board LEAN Team
Revised institutional human participant research review process
- 2018-19 Faculty Mentor | Faculty Student Mentoring Program
Served as a faculty mentor for students new to Oregon State University as part of a pilot program connecting students with faculty
- 2019 Invited Participant | Research Office Review of HRPP and IRB
Provided feedback regarding Human Research Protection Program and the Institutional Review Board to HRP Consulting Group
- 2019-20 Faculty Mentor | Faculty Student Mentoring Program
Served as a faculty mentor for students new to Oregon State University as part of program connecting students with faculty

Profession

Regular Reviewer for Professional Journals

Journal of Applied Physiology (Editorial Advisory Board 2019-21)

Ad hoc Reviewer for Professional Journals

Applied Physiology, Nutrition, and Metabolism
American Journal of Physiology – Endocrinology and Metabolism
American Journal of Physiology – Regulatory, Integrative and Comparative Physiology
Biochimica et Biophysica Acta
Clinical Diabetes
Diabetes
Diabetes, Obesity and Metabolism
Diabetic Medicine
Endocrine
Endocrinology
Experimental Physiology
International Journal of Sports Medicine
Journal of Applied Physiology
Journal of Endocrinology
Journal of Sport Sciences
Molecular and Cellular Endocrinology
Molecular Nutrition and Food Research
Nutrients
PLoS One
Physiological Genomics
Physiological Reports
Prostaglandins and Other Lipid Mediators
Scientific Reports
Translational Journal of the American College of Sports Medicine

Regular Reviewer for Granting Agencies

2018-20 American College of Sports Medicine Research Review Committee

Ad hoc Reviewer for Granting Agencies

2013 Central Michigan University Early Career Research Grant

2014 University of Michigan Nicholas Leoni Endowment Fund

2017 American College of Sports Medicine Research Review Committee

2018 Oregon Clinical & Translational Research Institute TL1 Review Committee

2019 Oregon Clinical & Translational Research Institute TL1 Review Committee

Other Professional Service

- 2016 Research Symposium Chair | American Diabetes Association
Chaired "All things in-between – The extracellular matrix and insulin resistance" session at the annual Scientific Sessions meeting in New Orleans, LA
- 2017 Thematic Poster Moderator | American Diabetes Association
Moderated highlighted "Integrated Physiology – Muscle" posters at the annual Scientific Sessions meeting in San Diego, CA
- 2017 Planning Committee Advisor | American Diabetes Association
Generated symposia comprising Exercise content for the 2018 Scientific Sessions annual meeting in Orlando, FL
- 2018 Poster Presentation Judge | American College of Sports Medicine Northwest
Evaluated doctoral student research poster presentations at the annual meeting in Bend, OR
- 2018 Planning Committee Advisor | American Diabetes Association
Generated symposia comprising Exercise content for the 2019 Scientific Sessions annual meeting in San Francisco, CA
- 2019 Abstract Review | American Diabetes Association
Reviewed abstracts comprising Exercise content for the 2019 Scientific Sessions annual meeting in San Francisco, CA
- 2019-20 Integration Task Force | American College of Sports Medicine
Identified opportunities and suggested initiatives creating cross-disciplinary collaboration among the various facets of the American College of Sports Medicine.

E. AWARDS

2004 Outstanding Senior Award | Michigan State University Department of Kinesiology

2004 High Honor Graduate | Michigan State University

2007 First Place Abstract and Oral Presentation | Rocky Mountain American College of Sports Medicine

2008 Outstanding Graduate Student Instructor Nominee | University of Michigan

2009 Student's Choice Graduate Student Teacher of the Year | University of Michigan School of Kinesiology

2009 Shirley Cooper International Research Travel Award | University of Michigan School of Kinesiology

2010 Rackham Graduate School Predoctoral Fellowship | University of Michigan

2011 Paul A. Hunsicker Memorial Award | University of Michigan School of Kinesiology

2012 Charles M. Tipton National Student Research Award | American College of Sports Medicine

2012 Ruth L. Kirschstein National Research Service Award (F32) | NIH-NIDDK

2014 Postdoctoral Trainee Fellowship (T32) | NIH-NIDDK

2018 Loan Repayment Program | NIH-NCATS