

ELIZABETH C. (SCHROEDER) LEFFERTS

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EDUCATION

Postdoctoral Research Scientist	Kinesiology <i>Iowa State University, Ames, IA</i> Concentration: Physical Activity Epidemiology Mentor: Dr. Duck-chul Lee	2020-2023
Ph.D.	Kinesiology and Nutrition <i>University of Illinois at Chicago, Chicago, IL</i> Concentration: Exercise Physiology Major Professor: Dr. Bo Fernhall Dissertation: Effect of age and fitness on vascular function and oxidative stress during acute inflammation	2015-2020
M.S.	Kinesiology <i>Iowa State University, Ames, IA</i> Concentration: Physical Activity Epidemiology Major Professor: Dr. Duck-chul Lee Thesis: Independent and Combined Effects of Aerobic and Resistance Training on Blood Pressure	2013-2015
B.A.	Major: Athletic Training Major: Movement and Exercise Science: Sport Psychology <i>University of Northern Iowa, Cedar Falls, IA</i>	2009-2013

PROFESSIONAL POSITIONS

Assistant Professor	Iowa State University, Ames, IA <i>Department of Kinesiology, College of Human Sciences</i>	Aug 2023 - Present
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RESEARCH

PUBLICATIONS **(45 published or in press [16 first author]; 3 under review)**

Peer-Reviewed Manuscripts

Presented in reverse chronological order; IF=2021 impact factor according to Web of Science

1. Saavedra JM, **Lefferts EC**, Song BK, Lee D. The associations of daily steps and body mass index with incident gastroesophageal reflux disease in older adults. Accepted for publication in *Frontiers in Sports and Active Living*.

2. Franke W, **Lefferts EC**, Lefferts WK, Keren N, Flynn MH, Lutrick L, Hinkhouse JJ, Ramey SL, Lang JA (2024). Law enforcement officers have an increased prevalence of subclinical cardiovascular disease that is not explained by traditional risk factors. Accepted for publication in *J of Occ Env Med*.
3. Brellenthin AG, Lee DC, **Lefferts EC**, Lefferts WK, Dougherty RJ, Kim Y (2024). Physical activity intensity and risk of dementia. *American Journal of Preventive Medicine* (ePub ahead of print). (IF=6.60)
4. **Lefferts EC**, Ranadive SM (2024). Vascular responses to acute induced inflammation with aging: Does fitness matter? *Exercise and Sport Science Reviews* (ePub ahead of print). (IF = 6.64)
5. Maroco JL, Rosenberg AJ, Grigoriadis G, **Lefferts EC**, Fernhall B, Baynard T (2023). Older females but not males exhibit increases in cerebral blood velocity, despite similar pulsatility increases after high-intensity resistance exercise. *American Journal of Physiology – Heart and Circulatory Physiology* 325(4):H909-H916. (IF = 5.13)
6. **Lefferts EC**, Saavedra JM, Song BK, Brellenthin AG, Pescatello LS, Lee DC (2023). Increasing lifestyle walking by 3,000 steps per day reduces blood pressure in sedentary older adults with hypertension. *Journal of Cardiovascular Development & Disease* 10: 317. (IF = 4.42)
7. Song BK, Saavedra JM, **Lefferts EC**, Brellenthin AG, Lee DC (2022). Associations between cardiorespiratory fitness and diverticulitis in older adults. *PLoS One* 17(9): e0275433. (IF=3.75)
8. Lefferts WK, Weiner CM, Mascone SE, Augustine JA, Heffernan KS, **Lefferts EC** (2022). Influence of sex and presence of cardiovascular risk factors on relations between cardiorespiratory fitness and cerebrovascular hemodynamics. *Journal of Applied Physiology* 133(4): 1019-1030. (IF=3.89)
9. Sherman SR, Lefferts WK, **Lefferts EC**, Lima NS, Grigoriadis G, Fernhall B, Baynard T, Rosenberg AJ (2022). The effect of aging on carotid artery wall mechanics during maximal resistance exercise. *European Journal of Applied Physiology* 122(11): 2477-2488. (IF=3.35)
10. Grigoriadis G, Sherman SR, Lima NS, **Lefferts EC**, Hibner BA, Ozemek HC, Danciu OC, Kanaloupitis D, Fernhall B, Baynard T (2022). Breast cancer survivors with preserved or rescued cardiorespiratory fitness have similar cardiac, pulmonary, and muscle function compared to controls. *European Journal of Applied Physiology* 122(10): 2189-2200. (IF=3.35)
11. Beck VDY, Wee SO, **Lefferts EC**, Hibner BA, Burton LC, Baynard T, Fernhall B, Hilgenkamp TIM (2022). Comprehensive cardiopulmonary profile in individuals with Down Syndrome. *Journal of Intellectual Disability Research* 66(12):978-987. (IF=3.65)
12. **Lefferts EC**, Saavedra J, Song BK, Lee DC (2022). Effect of COVID-19 pandemic on physical activity and sedentary behavior in older adults. *Journal of Clinical Medicine* 11:1568. (IF=4.96)
13. Lima NS, **Lefferts EC**, Clifford PS (2022). Reactive hyperaemia augments local heat-induced skin hyperaemia. *Experimental Physiology* 107: 383-389. (IF=2.86)
14. Hibner BA, **Lefferts EC**, Yan H, Horn GP, Smith DL, Rowland T, Fernhall B (2022). Effect of live-fire training on ventricular-vascular coupling. *European Journal of Applied Physiology* 122(3):591-597. (IF=3.35)
15. **Lefferts EC**, Hibner BA, Lefferts WK, Lima NS, Baynard T, Haus JM, Lane-Cordova AD, Phillips SA, Fernhall B (2021). Oral vitamin C restores endothelial function during acute inflammation in young and older adults. *Physiological Reports* 9: e15104.
16. Song BK, Kim GH, Kim JW, **Lefferts EC**, Lee DC, Kim MK, Choi BY, Kim YS (2021). Associations between quadriceps strength and type 2 diabetes mellitus in older adults: The Yangpyeong cohort of the Korean genome and epidemiology study. *Journal of Physical Activity and Health* 18(12): 1539-1546. (IF=3.0)
17. Kim GH, Song BK, Kim JW, **Lefferts EC**, Brellenthin AG, Lee DC, Kim MI, Choi BY, Kim YS (2021). Associations between relative grip strength and type 2 diabetes mellitus: The Yangpyeong cohort of the Korean genome and epidemiology study. *PLoSOne* 16(8): e0256550. (IF=3.75)
18. Lefferts WK, **Lefferts EC**, Hibner BA, Smith KJ, Fernhall B (2021). Impact of acute changes in blood pressure and arterial stiffness in cerebral pulsatile hemodynamics in young and middle-aged adults. *Experimental Physiology* 106(7): 1643-1653. (IF=2.86)

19. Hilgenkamp TIM, **Lefferts EC**, White DW, Baynard T, Fernhall B (2021). Blunted autonomic response to standing up and head-up tilt in individuals with intellectual disabilities. *Journal of Applied Physiology* 130(6): 1778-1785. (IF=3.89)
20. Gutierrez-Martinez L, Brellenthin AG, **Lefferts EC**, Lee DC, Sui X, Lavie CJ, Blair SN (2021). Resting heart rate and risk of cancer mortality. *Cancer Epidemiology Biomarkers and Prevention* 30(6): 1072-1078. (IF=4.09)
21. **Lefferts EC**, Bakker EA, Lavie CJ, Carbone S, Lee DC (2021). Associations of total and aerobic steps with the prevalence and incidence of frailty in older adults with hypertension. *Progress in Cardiovascular Diseases* 67: 18-25. (IF=11.28)
22. Beck VDY, Baynard T, **Lefferts EC**, Hibner BA, Fernhall B, Hilgenkamp TIM (2021). Anthropometry does not fully explain low fitness among adults with Down syndrome. *Journal of Intellectual Disability Research* 65(4): 373-379. (IF=3.65)
23. **Lefferts EC**, Rosenberg AJ, Grigoriadis G, Wee SO, Horn GP, Smith DL, Fernhall B (2021). Firefighter hemodynamic responses to different fire training environments. *Vascular Medicine* 26(3): 240-246. (IF=4.74)
24. Lefferts WK, Rosenberg AJ, **Schroeder EC**, Grigoriadis G, Sandroff B, Motl R, Baynard T (2021). Assessment of cerebrovascular dynamics and cognitive function with acute aerobic exercise in persons with Multiple sclerosis. *International Journal of MS Care* 23(4): 162-169.
25. Bunsawat K, **Lefferts EC**, Grigoriadis G, Wee SO, Rader MM, Fadel PJ, Clifford PS, Fernhall B, Baynard T (2021). Central and peripheral post-exercise blood pressure and vascular responses in adults with obesity. *Medicine & Science in Sports & Exercise* 53(5): 994-1002. (IF=5.41)
26. Sherman SR, **Schroeder EC**, Baynard T, Fernhall B, Hilgenkamp TIM (2021). Hemodynamic response to isometric handgrip exercise in adults with intellectual disability. *Medicine & Science in Sports & Exercise* 53(3): 606-612. (IF=5.41)
27. **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Fernhall B (2020). Mild acute inflammation does not impair maintenance of blood pressure during a hypotensive stimulus. *Artery Research* 26(3): 180-182. (IF=0.81)
28. Rosenberg AJ, **Schroeder EC**, Grigoriadis G, Wee SO, Bunsawat K, Heffernan KS, Fernhall B, Baynard T (2020). Aging reduces cerebral hemodynamic regulation following an acute hypertensive stimulus. *Journal of Applied Physiology* 128: 1186-1195. (IF=3.89)
29. Hibner BA, Hilgenkamp TIM, **Schroeder EC**, Grigoriadis G, Bollaert R, Motl RW, Griffith G, Baynard T, Fernhall B (2020). Physical activity and peak oxygen consumption are associated with walking in multiple sclerosis. *Multiple Sclerosis and Related Disorders* 40: 101941. (IF=4.81)
30. **Schroeder EC**, DuBois L, Sadowsky M, Hilgenkamp TIM (2020). Hypertension in adults with intellectual disability: Prevalence and risk factors. *American Journal of Preventive Medicine* 58(5): 630-637. (IF=6.60)
31. Hilgenkamp TIM, **Schroeder EC**, Wee SO, Grigoriadis G, Rosenberg AJ, Baynard T, Fernhall B (2019). Altered central hemodynamics in individuals with Down syndrome. *Artery Research* 25(3): 107-112. (IF=0.81)
32. Grigoriadis G, Rosenberg AJ, Lefferts WK, Wee SO, **Schroeder EC**, Fernhall B, Baynard T (2020). Similar effects of acute resistance exercise on carotid stiffness in men and women. *International Journal of Sports Medicine* 41(2): 82-88. (IF=3.00)
33. **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Robinson NS, Baynard T, Fernhall B (2019). No effect of fitness on brachial or forearm vascular function during acute inflammation in young adults. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 317: R746-R753. (IF=3.17)
34. **Schroeder EC**, Lefferts WK, Hilgenkamp TIM, Fernhall B (2019). Acute systemic inflammation reduces both carotid and aortic wave reflection in healthy adults. *Physiological Reports* 7(15): e14203.

35. Bunsawat K, Grigoriadis G, **Schroeder EC**, Rosenberg AJ, Rader MM, Fadel PJ, Clifford PS, Fernhall B, Baynard T (2019). Preserved ability to blunt sympathetically-mediated vasoconstriction in exercising skeletal muscle of young obese humans. *Physiological Reports* 7(8): e14068.
36. Boonman AJN, **Schroeder EC**, Hopman MTE, Fernhall B, Hilgenkamp TIM (2019). Cardiopulmonary profile of individuals with intellectual disabilities during exercise. *Medicine & Science in Sports & Exercise*, 51(9): 1802-1808. (IF=5.41)
37. **Schroeder EC**, Ranadive SM, Yan H, Lane-Cordova AD, Kappus RM, Cook MD, Fernhall B (2019). Effect of acute maximal exercise on vasodilatory function and arterial stiffness in African American and white adults. *Journal of Hypertension*, 37(6): 1262-1268. (IF=4.78)
38. **Schroeder EC**, Franke WD, Sharp RL, Lee DC (2019). Comparative effectiveness of aerobic, resistance, and combined training on cardiovascular disease risk factors: A randomized controlled trial. *PLoS One*, 14(1):e0210292. (IF=3.75)
39. Hilgenkamp TIM, Wee SO, **Schroeder EC**, Baynard T, Fernhall B (2018). Peripheral blood flow regulation in response to sympathetic stimulation in individuals with Down syndrome. *Artery Research*, 24: 16-21. (IF=0.81)
40. Baynard T, Hilgenkamp TIM, **Schroeder EC**, Motl RW, Fernhall B (2018). Measures of adiposity differentially correlate with inflammation among patients with Multiple sclerosis. *Multiple Sclerosis and Related Disorders*, 25: 1-4. (IF=4.81)
41. **Schroeder EC**, Lane-Cordova A, Ranadive SM, Baynard T, Fernhall H (2018). Influence of fitness and age on the endothelial response to acute inflammation. *Experimental Physiology*, 103: 924-931. (IF=2.86)
42. **Schroeder EC**, Rosenberg AJ, Hilgenkamp TIM, White DW, Baynard T, Fernhall B (2017). Effect of upper body position on arterial stiffness: Influence of hydrostatic pressure and autonomic function. *Journal of Hypertension*, 35(12): 2454:2461. (IF=4.78)
43. **Schroeder EC**, Ranadive SM, Heffernan KS, Jae SY, Fernhall B (2017). The acute effect of maximal aerobic and isometric exercise on arterial stiffness parameters in boys and men. *Artery Research*, 19, 24-28. (IF=0.81)
44. **Schroeder EC**, Welk GJ, Franke WD, Lee DC (2017). Associations of health club membership with physical activity and cardiovascular health. *PLoS One*, 12(1), e0170471. (IF=3.75)
45. Lee DC & **Schroeder EC** (2016). Resistance training improves cardiovascular health in postmenopausal women. *Menopause*, 23(11), 1162-1164. (IF=3.31)

Manuscripts Under Review

1. **Lefferts EC**, Lee DC. Greater adherence to Life's Essential 8 for cardiovascular health is associated with lower arterial stiffness in cancer survivors. *JAHA*.
2. Wee SO, **Lefferts EC**, Grigoriadis G, Rosenberg AJ, Bunsawat K, Hilgenkamp TIM, Baynard T, Fernhall B. Effect of acute aerobic exercise on cerebral blood flow and cerebral pulsatility in individuals with Down Syndrome. *JIDR*.
3. Giddings ML, Auringer JP, Meier NF, **Lefferts EC**, Wang C, Kane-Barnese L. The effect of dehydration on central blood pressure variables in young healthy adults. *Eur J Appl Phys*.

Manuscripts in Preparation

1. Martinez-Rosales E, **Lefferts EC**, Bakker EA, Artero EG, Lee D. A comparison of heart rate and self-reported physical activity to quantify physical activity intensity over 24 hours in older adults.
2. Grigoriadis G, Sherman SR, Lima NS, **Lefferts EC**, Hibner BA, Ozemek HC, Canciu OC, Phillips SA, Fernhall B, Baynard T. High-fit breast cancer survivors have greater cardiopulmonary and muscle function compared to low-fit.

Oral Presentations

1. **Lefferts EC**, Hibner BA, Lefferts WK, Lima NS, Baynard T, Fernhall B. Oral vitamin C restores endothelial function during acute inflammation in young and older adults. Oral presentation - North American Artery Conference 2021.
2. Sherman SR, Grigoriadis G, Dubois N, Lima NS, **Lefferts EC**, Hibner BA, Ozemek HC, Fernhall B, Baynard T. Similar central hemodynamic response to maximal exercise in fit breast cancer survivors and controls. Rapid fire presentation - North American Artery Conference 2021.
3. Sherman SR, **Lefferts EC**, Lefferts WK, Lima NS, Grigoriadis G, Fernhall B, Baynard T, Rosenberg AJ. The effect of aging on carotid artery wall dynamics during acute maximal resistance exercise. Oral - Experimental Biology 2021.
4. Brellenthin AG, Lee DC, **Lefferts EC**, Song B, Kim Y. Familial dementia versus healthy lifestyle on the risk of dementia. Oral presentation at AHA Epi/Lifestyle 2021.
5. Hibner BA, **Schroeder EC**, Lane-Cordova AD, Lefferts WK, Hilgenkamp TIM, Fernhall B. Effect of cardiorespiratory fitness on ventricular-vascular coupling during acute inflammation in young healthy adults. Oral Presentation - North American Artery Conference 2019.
6. Hilgenkamp TIM, **Schroeder EC**, Sadowsky M, DuBois L. Prevalence of high blood pressure in Special Olympics athletes. Symposium presentation – IASSIDD 2019.
7. **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Sardeli AV, Arriola S, Baynard T, Fernhall B. Influence of cardiorespiratory fitness on central and local arterial stiffness during acute inflammation. Rapid Fire Presentation –American College of Sports Medicine Annual Meeting 2019.
8. Hibner BA, Griffith G, **Schroeder EC**, Bollaert R, Motl RW, Baynard T, Fernhall B. Aerobic capacity is associated with vascular function in persons with Multiple sclerosis. Oral presentation – North American Artery Annual Meeting 2018.
9. Sardeli AV, Gaspari AF, Santos DFG, Wellington M, Gadelha VB, **Schroeder EC**, Fernhall B, Cavaglieri CR, Chacon-Mikahil MPT. Is the minimal recommendation of combined training enough to reduce cardio-metabolic risk in hypertensive elderly? Oral presentation – North American Artery Annual Meeting 2018.
10. Rosenberg AJ, **Schroeder EC**, Grigoriadis G, Wee SO, Griffith GJ, Fernhall B, Baynard T. The influence of aging on central artery stiffness and cerebral vascular function following an acute bout of leg extension/flexion exercise. Oral and Poster –Experimental Biology 2018.
11. **Schroeder EC**, Lane-Cordova AD, Ranadive RM, Baynard T, Fernhall B. High fit older adults maintain a similar endothelial response to acute inflammation as younger adults. Oral presentation – ARTERY 2017.
12. Rosenberg AJ, Wee SO, **Schroeder EC**, Bunsawat K, Grigoriadis G, Griffith GJ, Fernhall B, Baynard T. Effect of acute resistance exercise on arterial hemodynamics and cerebral blood flow dynamics: Does sex matter? Oral presentation – ARTERY 2017.
13. **Schroeder EC**, Lane-Cordova AD, Ranadive SM, Baynard T, Fernhall B. Influence of sex and fitness on the vascular response to acute inflammation. Oral presentation – 2017 North American Artery Conference.
14. Grigoriadis, G. Rosenberg AJ, Wee SO, **Schroeder EC**, Bunsawat K, Baynard T. Sex differences in carotid strain following resistance exercise. Oral presentation – 2017 North American Artery Conference.

15. Rosenberg A, Wee SO, **Schroeder EC**, Bunsawat K, Grigoriadis G, Baynard T, Fernhall B. Effect of acute isokinetic resistance exercise on systemic arterial hemodynamics and cerebral blood flow dynamics: Is there a mismatch?. Oral presentation – 2016 North American Artery Annual Meeting.

Poster Presentations

16. **Lefferts EC**, Saavedra JM, Lee DC. Greater adherence to Life's Essential 8 is associated with lower arterial stiffness in cancer survivors. Poster – American College of Sports Medicine Annual Meeting 2023.
17. Jouzi TR, **Lefferts EC**, Saavedra JM, Lee DC. Associations of cardiorespiratory fitness and muscular strength with poor sleep quality in older adults. Thematic Poster – American College of Sports Medicine Annual Meeting 2023.
18. Saavedra JM, **Lefferts EC**, Lee DC. Associations of cardiorespiratory fitness and muscular strength with sleep apnea in older adults. Thematic Poster – American College of Sports Medicine Annual Meeting 2023.
19. Reed KS, Weiner CM, Mascone SE, Augustine JA, Heffernan KS, **Lefferts EC**, Lefferts WK. Influence of sex on relations between cardiorespiratory fitness and cerebrovascular hemodynamics in healthy adults. Poster - Midwest Regional Conference American College of Sports Medicine 2022.
20. Lee DC, **Lefferts EC**, Saavedra JM, Song BK, Brellenthin AG. Increasing lifestyle walking by 3,000 steps/day lowers blood pressure in older adults with hypertension. Poster - ISPAH 2022.
21. Hibner BA, **Lefferts EC**, Lima NS, Sherman SR, Dejonge S, Baynard T, Fernhall B. Aerobic fitness as a predictor of conduit, resistance and microvascular arterial function. Poster - Experimental Biology 2022.
22. Saavedra J, **Lefferts EC**, Song BK, Lee DC. Associations of body mass index and cardiorespiratory fitness with sleep apnea in older adults. Poster - American College of Sports Medicine Annual Meeting 2022.
23. Grigoriadis G, Sherman SR, Hibner BA, **Lefferts EC**, Lima NS, Phillips SA, Fernhall B, Baynard T. High-fit breast cancer survivors have greater cardiac, pulmonary and muscle function compared to low-fit. Poster - American College of Sports Medicine Annual Meeting 2022.
24. Song BK, **Lefferts EC**, Saavedra JM, Lee DC. Associations of daily step count and sitting time with gastroesophageal reflux disease in older adults. Poster - American College of Sports Medicine Annual Meeting 2022.
25. Beck VDY, Wee SO, **Lefferts EC**, Hibner BA, Burton LC, Baynard T, Fernhall B, Hilgenkamp TIM. Lower oxygen uptake efficiency slope with similar V_e/V_{CO_2} slope in individuals with Down Syndrome. Poster - American College of Sports Medicine Annual Meeting 2022.
26. Lima NS, **Lefferts EC**, Clifford PS. Microvascular responsiveness determined by cutaneous blood flow and near-infrared spectroscopy. Poster - North American Artery Conference 2021.
27. Baynard T, Grigoriadis G, Sherman SR, Lima NS, **Lefferts EC**, Hibner BA, Ozemek H, Danciu OC, Kanaloupitis DK, Fernhall B. Physiological factors related to cardiorespiratory fitness are similar between breast cancer survivors and controls. Poster - Experimental Biology 2021.
28. Lima NS, **Lefferts EC**, Clifford PS. Heat hyperemia or reactive hyperemia alone do not elicit maximum skin blood flow. Poster - Experimental Biology 2021.
29. Kim GH, Song BK, Kim JW, **Lefferts EC**, Brellenthin AG, Lee DC, Kim YS. Associations between relative grip strength and type 2 diabetes: The Yangpyeong Cohort of the Korean Genome and Epidemiology Study. Poster - American College of Sports Medicine Annual Meeting 2021.
30. Kim YS, Song BK, Kim GH, Kim JW, **Lefferts EC**, Lee DC. Association between quadriceps strength and type 2 diabetes in Korean older adults. Poster - American College of Sports Medicine Annual Meeting 2021.
31. Brellenthin AG, Lee DC, **Lefferts EC**, Kim Y. Association of vigorous-intensity physical activity with risk of dementia. Poster - American College of Sports Medicine Annual Meeting 2021.

32. Song BK, Saavedra JM, **Lefferts EC**, Brellenthin AG, Lee DC. Associations between cardiorespiratory fitness and diverticulitis in older adults. Poster - American College of Sports Medicine Annual Meeting 2021.
33. Lefferts WK, **Schroeder EC**, Hibner BA, Fernhall B. Similar extracranial artery stiffening and pulsatile transmission during sympathetic stimulus in males and females despite differential pressor response. Accepted for presentation at Okanagan Cardiovascular and Respiratory Symposium 2020 – Cancelled due to COVID-19.
34. **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Fernhall B. Blood pressure maintained in response to a hypotensive stimulus during mild acute inflammation. Accepted for presentation at Experimental Biology 2020 – Cancelled due to COVID-19.
35. Sherman SR, Rosenberg AJ, **Schroeder EC**, Lefferts WK, Lima NS, Grigoriadis G, Baynard T. No sex differences in cerebral blood velocity responses during resistance exercise. Accepted for presentation at Experimental Biology 2020 – Cancelled due to COVID-19.
36. Lima NS, Rosenberg AJ, Grigoriadis G, **Schroeder EC**, Lefferts WK, Baynard T. Increased cerebral blood flow during acute resistance exercise is similar between young and older adults. Accepted for presentation at Experimental Biology 2020 – Cancelled due to COVID-19.
37. Hibner BA, **Schroeder EC**, Lefferts WK, Lane-Cordova AD, Horn GP, Smith DL, Fernhall B. Effect of live firefighting on ventricular-vascular coupling in middle-aged firefighters. Accepted for presentation at Experimental Biology 2020 – Cancelled due to COVID-19.
38. Burton LC, Wee SO, **Schroeder EC**, Grigoriadis G, Fernhall B, Hilgenkamp TIM. Oxygen pulse is reduced in individuals with Down syndrome. Submitted for presentation at the American College of Sports Medicine Annual Meeting 2020 – Cancelled due to COVID-19.
39. Hilgenkamp TIM, Wee SO, Grigoriadis G, **Schroeder EC**, Baynard T, Fernhall B. Central hemodynamic response to lower body negative pressure in individuals with Down syndrome. Poster - ARTERY 2019.
40. Hibner BA, **Schroeder EC**, Lefferts WK, Hilgenkamp TIM, Yan H, Horn GP, Smith D, Fernhall B. Effect of live-firefighting on ventricular-vascular coupling. Poster - ARTERY 2019.
41. **Schroeder EC**, Lefferts WK, Hilgenkamp TIM, Fernhall B. Acute systemic inflammation reduces both carotid and aortic wave reflection in young healthy adults. Poster - ARTERY 2019.
42. Baynard T, Beck VDY, **Schroeder EC**, Hibner BA, Fernhall B, Hilgenkamp TIM. Body composition does not influence aerobic capacity in individuals with Down syndrome: Preliminary results. Poster - Obesity Conference 2019.
43. **Schroeder EC**, Lefferts WK, Hilgenkamp TIM, Fernhall B. Acute systemic inflammation reduces both carotid and aortic wave reflection in young healthy adults. Poster –North American Artery Conference 2019.
44. Lima NS, **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Fernhall B, Baynard T. Sex differences in microvascular reperfusion during acute inflammation. Poster –North American Artery Conference 2019.
45. Sherman SR, **Schroeder EC**, Fernhall B, Baynard T, Hilgenkamp TIM. Blood pressure variability responses to hand grip exercise among individuals with intellectual disability. Poster –North American Artery Conference 2019.
46. Hilgenkamp TIM, Wee SO, **Schroeder EC**, Baynard T, Fernhall B. Central hemodynamic response to lower body negative pressure in individuals with Down syndrome. Poster –North American Artery Conference 2019.
47. Grigoriadis G, Hibner BA, **Schroeder EC**, Rosenberg AJ, Danciu OC, Fernhall B, Baynard T. Similar effects of acute aerobic exercise on hemodynamics in breast cancer survivors: Preliminary results. Poster – North American Artery Conference 2019.
48. **Schroeder EC**, Hilgenkamp TIM, Lefferts WK, Baynard T, Fernhall B. Influence of fitness on vascular function in young adults during acute inflammation. Poster –Experimental Biology 2019.

49. Hibner BA, Hilgenkamp TIM, **Schroeder EC**, Lefferts WK, Fernhall B. Validity of stroke volume and cardiac output measurement between finger photoplethysmography and continuous wave echocardiography during treadmill exercise in adults with and without Down syndrome. Poster – Experimental Biology 2019.
50. Sherman SR, Hilgenkamp TIM, **Schroeder EC**, Fernhall B, Baynard T. Sex differences in autonomic response to hand grip exercise among individuals with intellectual disability. Poster –Experimental Biology 2019.
51. Grigoriadis G, Hibner BA, **Schroeder EC**, Rosenberg AJ, Danciu OC, Fernhall B, Baynard T. Breast cancer survivors improved forearm blood flow following a single bout of aerobic exercise: Preliminary results. Poster –Experimental Biology 2019.
52. Hilgenkamp TIM, Wee SO, Hong K, **Schroeder EC**, Baynard T, Fernhall B. Impaired peripheral blood flow regulation results in abnormal blood pressure regulation in adults with Down syndrome. Poster – Experimental Biology 2019.
53. Wee SO, **Schroeder EC**, Grigoriadis G, Rosenberg AJ, Kanokwan B, Baynard T, Fernhall B. Vascular response to submaximal intensity aerobic exercise in individuals with Down syndrome. Poster – American College of Sports Medicine Annual Meeting 2019.
54. McMillan NJ, **Schroeder EC**, Lefferts WK, Hilgenkamp T, Fernhall B. Influence of acute inflammation on central hemodynamic control during a mild sympathoexcitatory stimulus. Poster – Presented at American College of Sports Medicine Annual Meeting 2019.
55. Hibner BA, Hilgenkamp TIM, **Schroeder EC**, Fernhall B. Feasibility of stroke volume measurement during treadmill exercise in adults with Down syndrome. Poster –American College of Sports Medicine Annual Meeting 2019.
56. Hilgenkamp TIM, **Schroeder EC**, Baynard T, Fernhall B. Blood pressure regulation in response to hand grip exercise in individuals with intellectual disabilities. Poster –American College of Sports Medicine Annual Meeting 2019.
57. Sherman SR, Hilgenkamp TIM, **Schroeder EC**, Fernhall B, Baynard T. Attenuated cardiac autonomic function in response to hand grip exercise among individuals with intellectual disability. Poster – American College of Sports Medicine Annual Meeting 2019.
58. Lima NS, Rosenberg AJ, Grigoriadis G, **Schroeder EC**, Lefferts WK, Baynard T. Visceral adiposity is associated with lower cerebral blood velocity in older adults. Poster –American College of Sports Medicine Annual Meeting 2019.
59. Grigoriadis G, Hibner BA, **Schroeder EC**, Rosenberg AJ, Griffith G, Sardeli AV, Danciu OC, Fernhall B, Baynard T. Acute effect of aerobic exercise on arterial stiffness in breast cancer survivors: Preliminary results. Poster –American College of Sports Medicine Annual Meeting 2019.
60. **Schroeder EC**, Hilgenkamp TIM, Baynard T, Fernhall B. Reduction in endothelial, but not microvascular, function during acute inflammation: Preliminary results. Poster –ARTERY 2018.
61. Wee SO, **Schroeder EC**, Grigoriadis G, Hilgenkamp T, Baynard T, Fernhall B. Hemodynamic response following acute moderate intensity aerobic exercise in individuals with Down syndrome. Poster –North American Artery Annual Meeting 2018.
62. **Schroeder EC**, Hilgenkamp T, Baynard T, Fernhall B. Potential microvascular compensation for the reduction in endothelial function during acute inflammation: Preliminary results. Poster – North American Artery Annual Meeting 2018.
63. Grigoriadis G, Rosenberg AJ, Wee SO, **Schroeder EC**, Griffith G, Baynard T. Poor sleep quality is associated with poorer cerebrovascular function in individuals with Multiple sclerosis. Poster –North American Artery Annual Meeting 2018.
64. **Schroeder EC**, Rosenberg AJ, Grigoriadis G, Wee SO, Fernhall B, Baynard T. Differences in autonomic recovery following maximal resistance exercise in young and older adults. Poster – Experimental Biology 2018.

65. Grigoriadis G, Rosenberg AJ, Wee SO, **Schroeder EC**, Griffith G, Baynard T. Acute effect of aerobic exercise on carotid strain in individuals with Multiple Sclerosis. Poster – Experimental Biology 2018.
66. Wee SO, **Schroeder EC**, Grigoriadis G, Bunsawat K, Rosenberg AJ, Griffith G, Baynard T, Fernhall B. Cerebral blood flow characteristics responses following acute aerobic exercise in individuals with and without Down syndrome. Poster – Experimental Biology 2018.
67. Hilgenkamp T, **Schroeder EC**, White DW, Baynard T, Fernhall B. Blunted blood pressure response to handgrip exercise in individuals with intellectual disabilities: Preliminary results. Poster – Experimental Biology 2018.
68. Hibner B, Griffith G, **Schroeder EC**, Rosenberg AJ, Hilgenkamp T, Bollaert R, Motl RW, Baynard T, Fernhall B. Impact of aerobic capacity, age and duration of disease on arterial function in individuals with Multiple Sclerosis. Poster – Experimental Biology 2018.
69. Grigoriadis G, Rosenberg AJ, Wee SO, **Schroeder EC**, Griffith G, Fernhall B, Baynard T. No sex differences in arterial stiffness and hemodynamic response to resistance exercise in older individuals. Thematic Poster – American College of Sports Medicine Annual Meeting 2018.
70. Hibner B, **Schroeder EC**, Rosenberg AJ, Griffith G, Bollaert R, Motl RW, Kick A, Baynard T, Fernhall B. Physical activity is associated with walking capacity in persons with Multiple sclerosis. Poster – American College of Sports Medicine Annual Meeting 2018.
71. **Schroeder EC**, Lane-Cordova AD, Ranadive SM, Baynard T, Fernhall B. Body mass index does not influence the endothelial response to acute inflammation. Poster – American College of Sports Medicine Annual Meeting 2018.
72. Griffith G, Rosenberg A, Grigoriadis G, Bunsawat K, Wee SO, **Schroeder EC**, Baynard T. Metabolic prediction equations overestimate cardiorespiratory fitness for treadmill and cycle ergometry in Multiple sclerosis patients. Poster – American College of Sports Medicine Annual Meeting 2018.
73. Hilgenkamp T, Boonman A, **Schroeder EC**, Hopman M, Fernhall B. Cardiopulmonary profile of individuals with intellectual disabilities during maximal exercise. Poster – American College of Sports Medicine Annual Meeting 2018.
74. Wee SO, **Schroeder EC**, Grigoriadis G, Rosenberg AJ, Bunsawat K, Griffith G, Baynard T, Fernhall B. Effects of acute aerobic exercise on cognitive function in individuals with Down syndrome. Poster – 2017 Southwest Regional Chapter of the American College of Sports Medicine.
75. Rosenberg AJ, Wee SO, Grigoriadis G, **Schroeder EC**, Bunsawat K, Griffith G, Baynard T. Effect of age on cerebral blood flow dynamics following acute resistance exercise. Poster – 2017 American Physiological Society Conference: Cardiovascular Aging, New Frontiers and Old Friends.
76. Rosenberg AJ, Wee SO, **Schroeder EC**, Grigoriadis G, Bunsawat K, Griffith G, Baynard T. Effect of age on carotid artery circumferential strain following acute maximal resistance exercise. Poster – 2017 North American Artery Conference.
77. **Schroeder EC**, Hilgenkamp TIM, Rosenberg AJ, White DW, Baynard T, Fernhall B. Effect of upper body position on arterial stiffness: Influence of hydrostatic pressure and autonomic function. Poster –2017 Experimental Biology.
78. Rosenberg AJ, Wee SO, **Schroeder EC**, Grigoriadis G, Bunsawat K, Hilgenkamp TIM, Griffith G, Fernhall B, Baynard T. The effect of acute exercise on cerebral blood flow and cognition in persons with multiple sclerosis. Poster – 2017 Experimental Biology.
79. Grigoriadis G, Rosenberg AJ, Wee SO, **Schroeder EC**, Baynard T. Effects of aerobic capacity on arterial stiffness in individuals with Multiple Sclerosis. Poster – 2017 Experimental Biology.
80. Hilgenkamp T, **Schroeder EC**, White DW, Baynard T, Fernhall B. Blunted autonomic response to head up tilt in individuals with intellectual disabilities compared to controls: preliminary results. Poster – 2017 Experimental Biology.

81. **Schroeder EC**, Lane-Cordova AD, Ranadive RM, Baynard T, Fernhall B. High fit older adults maintain a similar endothelial response to acute inflammation as younger adults. Poster – 2017 American College of Sports Medicine Annual Meeting.
82. Rosenberg AJ, Wee SO, **Schroeder EC**, Bunsawat K, Grigoriadis G, Saed BM, Fernhall B, Baynard T. Effect of sex on systemic arterial hemodynamics and cerebral blood flow dynamics following an acute isokinetic resistance exercise. Poster – 2017 American College of Sports Medicine Annual Meeting.
83. Hilgenkamp T, **Schroeder EC**, White DW, Baynard T, Fernhall B. Blunted autonomic response to orthostasis in individuals with intellectual disabilities compared to controls: preliminary results Poster – 2017 American College of Sports Medicine Annual Meeting.
84. Grigoriadis G, Rosenberg AJ, Wee SO, **Schroeder EC**, Bunsawat K, Fernhall B, Baynard T. Sex differences in the influence of leg strength on arterial stiffness. Poster – 2017 American College of Sports Medicine Annual Meeting.
85. Bunsawat K, Grigoriadis G, Griffith G, Wee SO, **Schroeder EC**, Fernhall B, Baynard T. Muscle blood flow responses to dynamic handgrip exercise in young obese adults. Poster – 2017 American College of Sports Medicine Annual Meeting.
86. Griffith G, Hilgenkamp T, Rosenberg AJ, Grigoriadis G, Kanokwan B, Wee SO, **Schroeder EC**, Saed B, Baynard T, Fernhall B. Treadmill vs. cycle ergometry graded exercise test responses in Multiple Sclerosis patients. Poster – 2017 American College of Sports Medicine Annual Meeting.
87. **Schroeder EC**, Hilgenkamp TIM, Rosenberg AJ, White DW, Baynard T, Fernhall B. Body mass index as an independent predictor of change in arterial stiffness parameters with change in body position. Poster – 2016 North American Artery Annual Meeting.
88. Rosenberg AJ, White DW, **Schroeder EC**, Hilgenkamp T, Fernhall B, Baynard T. Height correction for carotid blood pressure is important during positional changes to account for gravitational effects when assessing arterial stiffness. Poster - 2016 Experiment Biology Conference.
89. **Schroeder EC**, Lee DC. Objectively measured aerobic and resistance exercise and cardiovascular disease risk factor response. Poster - 2016 American College of Sports Medicine Annual Meeting.
90. Rosenberg A, White DW, **Schroeder EC**, Hilgenkamp T, Fernhall B, Baynard T. Gravitational effects on clinical assessment of arterial stiffness with cardio-ankle vascular index. Poster - 2016 American College of Sports Medicine Annual Meeting.
91. Lee DC, **Schroeder EC**. Comparative effectiveness of aerobic, resistance, and combined training on health-related quality of life in inactive, overweight/obese, and pre-/stage 1 hypertensive individuals: A randomized controlled exercise trial. Phoenix, AZ, 2016. Poster - 2016 EPI/Lifestyle Conference.
92. **Schroeder EC**, Franke WD, Sharp RL, Lee DC. Independent and combined effects of aerobic and resistance training on blood pressure (ART-B). Chicago, IL, 2015. Poster – 2015 North American Artery Annual Meeting.
93. Lee DC, **Schroeder EC**. Independent and combined effects of aerobic and resistance training on sarcopenic indices and its association with peripheral and central blood pressure. Chicago, IL, 2015. Poster – 2015 North American Artery Annual Meeting.
94. **Schroeder EC**, Meier NF, Welk GJ, Lee DC. Improved cardiovascular health outcomes with health club membership. San Diego, CA, 2015. Poster – 2015 American College of Sports Medicine Annual Meeting.
95. **Schroeder EC**, Meier NF, Welk GJ, Lee DC. Health club membership and adherence to the US Physical Activity Guidelines. Orlando, FL. 2014. Poster – 2014 American College of Sports Medicine Annual Meeting.
96. Lee DC, Meier NF, **Schroeder EC**, Welk GJ. Vigorous-intensity aerobic physical activity and blood pressure – is more better? Orlando, FL. 2014. Poster – 2014 American College of Sports Medicine Annual Meeting
97. Lee DC, Meier NF, **Schroeder EC**, Welk GJ. Resistance and aerobic physical activity and high blood pressure. Boston, MA. 2013. Poster – American Public Health Association Annual Meeting.

BOOK CHAPTERS

1. Lefferts WK, **Lefferts EC**, Hibner BA, Fernhall B. Chapter 34 - Role of the heart and arterial tree in physiologic adjustments during exercise. *Textbook of Arterial Stiffness and Pulsatile Hemodynamics in Health and Disease*. Academic Press, 2022, Pages 527-544, ISBN 9780323913911.

GRANT SUPPORT

Funded

- 7/2019 – 6/2020 *Effect of age and fitness on vascular function and oxidative stress during acute inflammation*
Funding Agency: University of Illinois Award for Graduate Research/Deiss Award in Biomedical Science
Award Amount: \$3,000
Principal Investigator: Schroeder, Elizabeth
- 1/2019 – 12/2020 *Effect of age and fitness on vascular function and oxidative stress during acute inflammation (19PRE34380420)*
Funding Agency: American Heart Association Pre-doctoral Fellowship
Award Amount: \$53,688
Principal Investigator: Schroeder, Elizabeth (Sponsor: Fernhall, Bo)
- 6/2018 – 5/2019 *Effect of age and fitness on vascular and autonomic function during acute inflammation (#17-00547)*
Funding Agency: American College of Sports Medicine Foundation Research Grant
Award Amount: \$4,997 (Relinquished to accept AHA)
Principal Investigator: Schroeder, Elizabeth (Sponsor: Fernhall, Bo)

Not Funded

- 2017 *Effect of age and fitness on vascular and autonomic function during acute inflammation*
Funding Agency: National Institutes of Health F31 Ruth L. Kirschstein Predoctoral Individual National Service Award
Award Amount: \$88,088
Principal Investigator: Schroeder, Elizabeth (Sponsors: Fernhall, Bo; Phillips, Shane)
- 2017 *Effect of age and fitness on vascular and autonomic function during acute inflammation*
Funding Agency: American Heart Association Pre-doctoral Fellowship
Award Amount: \$53,688
Principal Investigator: Schroeder, Elizabeth (Sponsor: Fernhall, Bo)

TEACHING

Lead Instructor

- Fall 2023 KIN 358 – Physiology of Exercise, *Iowa State University*
- 3 credit undergraduate required course for Kinesiology majors
 - Enrollment: 63 students
 - Average instructor rating: 4.4 out of 5
- Spring 2023 HS 464/564: Physical Activity Epidemiology, *Iowa State University*
- 3 credit undergraduate (464) course required for Community and Public Health and Physical Activity and Health Promotion, elective for Pre-Health Professions; and graduate (564) elective course
 - Enrollment: 35 students
 - Average instructor rating: 4.6 out of 5
- Fall 2017 – Spr 2018 KN 200: Statistical Methods, *University of Illinois at Chicago*
- 3 credit undergraduate required course for Kinesiology majors
 - Enrollment: 66 students
 - Average instructor rating over 2 semesters = 4.2 out of 5
- Spr 2014 – Spr 2015 HS 105: First Aid and Emergency Care, *Iowa State University*
- 2 credit undergraduate required course for Community and Public Health and Physical Education Teacher Education
 - Enrollment: ~35 students/section
 - Average instructor rating over 3 semesters = 4.5 out of 5
- Spr 2015 KIN 182: Volleyball, *Iowa State University*
- 1 credit undergraduate elective course
 - Enrollment ~20 students/section
 - Average instructor rating over 2 sections = 4.7 out of 5
- Fall 2014 KIN 144 Racquetball, *Iowa State University*
- 1 credit undergraduate elective course
 - Enrollment: 10 students
 - Average instruction rating over 1 section = 4.7 out of 5
- Fall 2013 KIN 164 Walking for Fitness, *Iowa State University*
- 1 credit undergraduate elective course
 - Enrollment ~20 students/section
 - Average instructor rating over 2 sections = 4.1 out of 5

Graduate Teaching Assistant

- Fall 2015 – Spr 2017 KN 200 Statistical Methods Discussion Section, *University of Illinois at Chicago*
- 3 credit undergraduate required course for Kinesiology majors
 - Enrollment: 25 students/section, 3 sections/semester
 - Average instructor rating over 9 sections = 4.9 out of 5

Mentorship

Committee Member

PhD

- In progress* Krista Reed (Committee Member)
- In progress* Holly Schmitz (Committee Member)
- In progress* Mingyue Zhang (Committee Member)
- In progress* Spencer Romanowski (Committee Member)

MS

- In progress* Taline Jouzi (Committee Member)

Research Mentor

- 2020-2023 Joseph Saavedra, PhD student, *Iowa State University*
- 2020-2023 Elena Martinez-Rosales, Visiting Scholar, *Iowa State University*
- 2020-2022 Alberto Palmero Canton, MS student, *Iowa State University*

Guest Lectures

- Fall 2022 “Cardiovascular Physiology” topic in ANS/KIN/NUTR 549 Advanced Vertebrate Physiology (Graduate Course, 6 lecture hours), *Iowa State University* (Instructor: Dr. Joshua Selsby)

- Fall 2022 “Exercise is Medicine” and “Cardiovascular Responses and Adaptations to Exercise” topics in KIN 462 Medical Aspects of Exercise Physiology, *Iowa State University* (Instructor: Dr. Wesley Lefferts)

- Fall 2018 “Respiratory Physiology” (2 lecture hours), “Cardiovascular Disease”, and “Diabetes” topics in KN 152 Introduction to Exercise Science and Health, *University of Illinois at Chicago* (Instructor: Dr. Thessa Hilgenkamp)

- Spring 2017 “Inferences from Two Samples” topic in KN 200 Statistical Methods, *University of Illinois at Chicago* (Instructor: Dr. Jessica Longworth)

- Fall 2016 “Variance, Z-score, Range Rule of Thumb” topic in KN 200 Statistical Methods, *University of Illinois at Chicago* (Instructor: Dr. Jessica Longworth)

- Fall 2016 “Cardiovascular Control and Exercise Adjustments” topic in KN 152 Introduction to Exercise Science and Health, *University of Illinois at Chicago* (Instructor: Dr. Tracy Baynard)

- Spring 2016 “Analysis of Variance (ANOVA)” topic in KN 200 Statistical Methods, *University of Illinois at Chicago* (Instructor: Dr. Jessica Longworth)

SERVICE

Professional

2023-Present North American Artery Early Investigator Committee Co-Chair

2023-Present North American Artery Annual Meeting Programming Committee Member

Ad-hoc Journal Reviewer

- American Journal of Cardiology (Q3, 81/143 Cardiac & Cardiovascular Systems)
- American Journal of Physiology – Regulatory, Integrative and Comparative Physiology (Q2, 19/73 Physiology)
- American Journal of Physiology – Heart and Circulatory Physiology (Q2, 49/143 Cardiac & Cardiovascular Systems)
- American Journal of Preventive Medicine (Q1, 28/172 Medicine, General & Internal)
- Applied Physiology, Nutrition, and Metabolism (Q2, 38/81 Physiology; 40/88 Sport Sciences)
- Blood Pressure (Q4, 57/67 Peripheral Vascular Disease)
- Cardiovascular Research (Q1, 10/143 Cardiac & Cardiovascular Systems)
- Clinical Physiology and Functional Imaging (Q4, 68/81 Physiology)
- Echocardiography (Q4, 57/66 Cardiac & Cardiovascular Systems)
- Journal of the American Heart Association (Q2, 42/143 Cardiac & Cardiovascular Systems)
- Journal of Sport and Health Science (Q1, 2/88 Sport Sciences)
- Medicine & Science in Sports & Exercise (Q1, 8/88 Sport Sciences)
- Physiological Reports (Q3, 45/86 Physiology)
- PLoS One (Q2, 29/74 Multidisciplinary Sciences)
- Reviews in Cardiovascular Medicine (Q2, 58/143 Cardiac & Cardiovascular Systems)

Institutional

2023-Present Interdepartmental Graduate Program in Nutritional Sciences Advisory Committee, *Iowa State University*

2023-2024 Kinesiology Undergraduate Student Awards Committee, *Iowa State University*

2018-2020 Your Future in Science Organizing Committee, *University of Illinois at Chicago*

2017-2019 Kinesiology Graduate Student Council Representative, *University of Illinois at Chicago*

Community and Volunteer

2017-2019 Lead for BIOS 100 Integrative Physiology Lab Demonstrations, *University of Illinois at Chicago*

2016 Group Leader for the Expanding Your Horizons, a program for middle school girls to explore scientific fields. Workshop: Beauty and a (Heart) Beat, *University of Illinois at Chicago*

2013-2014 Presenter for Women in Science and Engineering STEM Outreach Program for High School and Middle School Girls, *Iowa State University*

PROFESSIONAL MEMBERSHIPS AND CERTIFICATIONS

2017-Present American Heart Association (AHA)

2016-Present American Physiology Society (APS)

2013-2022 American Red Cross First Aid/CPR/AED Instructor Certification

2013-Present American College of Sports Medicine (ACSM)

Curriculum Vitae Elizabeth Lefferts

2013-2023 NATABOC Certified Athletic Trainer
2008-Present American Red Cross – Adult & Pediatric First Aid/CPR/AED Certified
2010-2014 National Athletic Trainers' Association (NATA)

ACADEMIC/PROFESSIONAL HONORS

2019 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award (\$500), *American Physiological Society*
2018-2019 Paul D. Doolen Graduate Scholarship for the Study of Aging (\$4,000), *University of Illinois*
2015 Masters Scholar Award, *American Kinesiology Association*
2015 Kinesiology Outstanding Master's Student Award, *Iowa State University*
2014 Sharon Mathes Graduate Scholarship (\$800), *Iowa State University*
2013 Mark and Nancy Dyslin Master's Scholarship (\$1200), *Iowa State University*
2013 Graduated Summa Cum Laude, *University of Northern Iowa*
2013 Purple and Old Gold Award, *University of Northern Iowa*