Curriculum Vitae

Daniel H. Craighead

Address:
Cooke Hall 224D
1900 University Ave SE
Minneapolis, MN 55455
Phone: 612-624-2704
e-mail: dcraighe@umn.edu

POSITIONS

2024-present	Assistant Professor School of Kinesiology University of Minnesota Twin Cities, Minneapolis, MN
2022-2024	Assistant Director of Clinical Research Integrative Physiology of Aging Laboratory University of Colorado Boulder, Boulder, CO
2020-2024	Assistant Research Professor Department of Integrative Physiology University of Colorado Boulder, Boulder, CO

EDUCATION

Postdoctoral Fellow	Department of Integrative Physiology, June 2017-October 2020. University of Colorado Boulder, Boulder, CO *Mentor:* Douglas Seals, Ph.D.
Ph.D.	Kinesiology. May 2017, Penn State University, University Park, PA *Dissertation Title:* Mechanisms of Cutaneous Microvascular Dysfunction in Men and Women with Essential Hypertension *Advisor:* W. Larry Kenney, Ph.D.
B.S.	Exercise and Sports Science, Medical Science Emphasis; Nutrition Science Minor. May 2012, Ithaca College, Ithaca, NY *Summa Cum Laude*

HONORS AND AWARDS

2020	American Physiological Society, Caroline tum Suden Frances A. Hellenbrandt Professional Development Opportunity Award – Postdoctoral *Inspiratory Muscle Strength Training Improves Vascular Endothelial Function in Older Adults by Altering Circulating Factors that Suppress Superoxide and Enhance Nitric Oxide*

2019 Environmental & Exercise Physiology (EEP) Gatorade Sport Science Institute Postdoctoral Research Award
Inspiratory Muscle Strength Training Lowers Resting Systolic Blood Pressure and Improves Vascular Endothelial Function in Middle-Aged and Older Adults

2019 PAC Boulder Travel Award, The Postdoctoral Association of Colorado Boulder, University of Colorado Boulder, Boulder, CO

2016-2017 Joseph and Jean Britton Graduate Fellows Endowment, College of Health and Human Development, The Pennsylvania State University, University Park, PA

2015 American Physiological Society, Caroline tum Suden Frances A. Hellenbrandt Professional Development Opportunity Award - Predoctoral
Lisinopril Improves Cutaneous Microvascular Function in Hypertensive Men and Women

2015 College of Health and Human Development Professional Development Endowment. The Pennsylvania State University, University Park, PA

2013 Kinesiology Graduate Student Research Award, Dept. of Kinesiology, The Pennsylvania State University, University Park, PA
Age is a Predictor of Reduced Reactive Hyperemia in Human Skin

2012-2013 University Graduate Fellowship, The Pennsylvania State University, University Park, PA

RESEARCH SUPPORT

Grants Funded

2024-2026 R03HL171108, NIH NHBLI
Smartphone app-guided inspiratory muscle strength training for lowering systolic blood pressure.
Role: PI

2023-2024 Golfers Against Cancer pilot grant
The impact of inspiratory muscle strength training and personalized exercise prescription on metabolism, cardiovascular function, and cardiorespiratory fitness in lymphoma survivors.
Role: MPI (MPI: Nemkov T)

2023-2024 R41HL167375, NIH NHLBI
Feasibility and design of a novel smartphone app to deliver blood pressure-lowering inspiratory muscle strength training
Role: Co-I (PI: Seals DR)

2021-2026 R01KD130266, NIH NIDDK

Inspiratory muscle strength training for lowering systolic blood pressure in midlife and older adults with chronic kidney disease
Role: Co-I (MPI: Chonchol M, Nowak KJ)

2021-2026 R01AG071506, NIH NIA
Inspiratory muscle strength training for lowering blood pressure and improving endothelial function in postmenopausal women: comparison with "standard of care" aerobic exercise
Role: Co-I (PI: Seals DR)

2020-2025 K01HL153326, NIH NHLBI
Novel time-efficient inspiratory muscle strength training for lowering systolic blood pressure and improving endothelial, cerebrovascular, and cognitive function
Role: PI

2020-2025 R01AG065346, NIH NIA
Time-efficient inspiratory muscle strength training for improving blood pressure and vascular function in older adults with sleep-disordered breathing
Role: Co-I (PI: Bailey EF)

2019-2023 R01AG061514, NIH NIA
Nicotinamide riboside supplementation for treating elevated systolic blood pressure and arterial stiffness in middle-aged and older adults.
Role: Co-I (PI: Seals DR)

2018-2020 AHA Postdoctoral Fellowship
Efficacy of inspiratory muscle strength training for improving blood pressure and vascular function in mid-life adults
Role: PI

2018-2020 F32 HL140767. NIH NHLBI (Declined to accept AHA fellowship)
Efficacy of inspiratory muscle strength training for improving blood pressure and vascular function in mid-life adults
Role: PI

2017-2018 T32 DK007135. NIH NIDDK
Renal and Electrolyte Disease and Hypertension
Role: Fellow (PI: Johnson RJ)

2015-2016 American College of Sports Medicine Foundation Predoctoral Fellowship
The effect of ACE inhibitors on microvessel structure and function
Role: PI

2015-2017 Theraband Grant-in-Aid
Role: Co-I (PI: Alexander LM)

PUBLICATIONS

Peer-Reviewed Manuscripts

1. Tavoian, D., Mazzone, J.L., **Craighead, D.H.,** Bailey, E.F. Acute inspiratory resistance training enhances endothelium-dependent dilation and retrograde shear rate in healthy young adults. *Physiol Rep,* 12(3):e15943, 2024. doi: 10.14814/phy2.15943.

2. Freeberg, K.A.*, **Craighead, D.H.,*** Heinbockel, T.C., Rossman, M.J., Jackman, R.A., Jankowski, L.R., Ludwig, K.R., Chonchol, M., Bailey, E.F., Seals, D.R. Time-efficient, high-resistance inspiratory muscle strength training increases cerebrovascular reactivity in midlife and older adults. *Am J Physiol Heart Circ Physiol,* 325(5):H1059-H1068, 2023. doi: 10.1152/ajpheart.00351.2023. * co-first author.

3. **Craighead, D.H.,** Freeberg, K.A., Heinbockel, T.C., Rossman, M.J., Jackman, R.A., McCarty, N.P., Jankowski, L.R., Nemkov, T., Reisz, J.A., D'Alessandro, A., Chonchol, M., Bailey, E.F., Seals, D.R. Time-efficient, high-resistance inspiratory muscle strength training increases exercise tolerance in midlife and older adults. *Med Sci Sports Exerc,* 56(2):266-276, 2023. doi: 10.1249/MSS.0000000000003291.

4. Faria, D., Moll-Bernardes, R., Testa, L., Moniz, C., Rodrigues, E., Mota, J.M., de Souza, F.R., Alves, M.N.N., Ono, B., Izaias, J, Sales, A., Rodrigues, T., Salemi, V., Jordao, C., Katia, D.A., **Craighead, D.H.,** Rossman, M.J., Bortolotto, L., Consolim-Colombo, F., Irigoyen, M.C., Seals, D.R., Negrao, C., Sales, A. Neurovascular and hemodynamic responses to mental stress and exercise in severe COVID-19 survivors. *Am J Physiol Regul Integr Comp Physiol*, 325(3):R269-R279, 2023. doi: 10.1152/ajpregu.00111.2023.

5. Smith, M.D., Freeberg, K.A., **Craighead, D.H.,** Helmuth, T., Robinson, M.M., Nair, K.S., Bryan, A., Seals, D.R., LaRocca, T.J. Novel whole blood transcriptome signatures of changes in maximal aerobic capacity in response to endurance training in healthy women. *Physiol Genomics*, 55(8):338-244, 2023. doi:10.1152/physiolgenomics.00017.2023.

6. Freeberg, K.A., Udovich C.C., Martens, C.R., Seals, D.R., **Craighead, D.H.** Dietary supplementation with NAD+-boosting compounds in humans: current knowledge and future directions. *J Gerontol A Biol Sci Med Sci*, 2023. doi: 10.1093/Gerona/glad106.

7. Oh, E.S., Freeberg, K.A., Steele, C.N., Wang, W., Farmer-Bailey, H., Coppock, M.E., Seals, D.R., Chonchol, M., Rossman, M.J., **Craighead, D.H.*,** Nowak, K.L*. Cerebrovascular pulsatility index is higher in chronic kidney disease. *Phys Rep,* 11(1):e15561, 2023. doi: 10.14814/phy2.15561. * co-senior author.

8. Tavoian, D., **Craighead, D.H.** Deep breathing exercise at work: potential applications and impact. *Front Physiol*, 14:1040091, 2023. doi: 10.3389/fphys.2023.1040091.

9. Faria, D., Moll-Bernardes, R., Testa, L., Moniz, C.M.V., Rodrigues, E.C., Rodrigues, A.G., Araujo, A., Alves, M.J.N.N, Ono, B.E., Ilzais, E.J., Salemi, V.M.C, Paixao, C.J., Amaro-Vicente, G., Rodon, M.U.P.B., Ludwig, K.R., **Craighead, D.H.,** Rossman, M.J., Consolim-Colombo, F.M., Angelis, K.D., Irigoyen, M.C.C, Seals, D.R., Negrao, C.E., Sales, A.R.K. Sympathetic neural overdrive, aortic stiffening, endothelial dysfunction, and impaired

exercise capacity in severe COVID-19 survivors: a mid-term study of cardiovascular sequelae. *Hypertension*, 80(2):470-481, 2023. doi: 10.1161/HYPERTENSIONAHA.122.19958.

10. **Craighead, D.H.*,** Tavoian, D.*, Freeberg, K.A., Mazzone, J.L., Vranish, R.J., DeLucia, C.M., Seals, D.R., Bailey, E.F. A multi-trial, retrospective analysis of the antihypertensive effects of high-resistance, low-volume inspiratory muscle strength training. *J Appl Physiol*, 133(4): 1001-1010, 2022. doi: 10.1152/japplphysiol.00425.2022. * co-first author.

11. **Craighead, D.H.,** Freeberg, K.A., McCarty, N.P., Rossman, M.J., Moreau, K.L., You, Z., Chonchol, M., Seals, D.R., Inspiratory muscle strength training for lowering blood pressure and improving endothelial function in postmenopausal women: comparison with "standard of care" aerobic exercise. *Front Physiol,* 13: 967478, 2022. doi: 10.3389/fphys.2022.967478.

12. Clayton, Z.S*, **Craighead, D.H*,** Darvish, S., Coppock, M., Ludwig, K.R., Brunt, V.E., Seals, D.R., Rossman, M.J. Promoting healthy cardiovascular aging: emerging topics. *J Cardiovasc Aging*, 2: 42, 2022. doi: 10.20517/jca.2022.27.

13. Shannon, O.M., Clifford, T., Seals, D.R., **Craighead, D.H.,** Rossman, M.J. Nitric oxide, aging and aerobic exercise: sedentary individuals to Master's athletes. *Nitric Oxide.* 125-126: 31-39, 2022. doi: 10.1016/j.niox.2022.06.002.

14. Freeberg, K.A.*, **Craighead, D.H*,** Martens, C.R., You, Z., Chonchol, M., Seals, D.R. Nicotinamide riboside supplementation for treating elevated systolic blood pressure and arterial stiffness in midlife and older adults. *Front Cardiovasc Med.* 9: 881703, 2022. doi: 10.3389/fcvm.2022.881703. * co-first author.

15. **Craighead, D.H.,** Freeberg, K.A., Maurer, G.S., Myers, V.H., Seals, D.R. Translational potential of high-resistance inspiratory muscle strength training. *Exerc Sport Sci Rev.* 50 (3): 107-117, 2022. doi: 10.1249/JES.0000000000000293.

16. Tavoian, D., Ramos-Barrera, L.E., **Craighead, D.H.,** Seals, D.R., Bedrick, E.J., Alpert, J.S., Mashaqi, S., Bailey, E.F. Six months of inspiratory muscle training to lower blood pressure and improve endothelial function in middle-aged and older adults with above-normal blood pressure and obstructive sleep apnea: protocol for the CHART clinical trial. *Font Cardiovasc Med.* 24(8): 760203, 2021. doi: 10.3389/fcvm.2021.760203.

17. **Craighead, D.H.,** Freeberg, K.A., McCarty, N.P., Seals, D.R. Time-efficient, high-resistance inspiratory muscle strength training for cardiovascular aging. *Exp Gerontol*. 154(15): 111515, 2021. doi: 10.1016/j.exger.2021.111515.

18. **Craighead, D.H.,** Heinbockel, T.C., Freeberg, K.A., Rossman, M.J., Jackman, R.A., Jankowski, L.R., Hamilton, M.N., Ziemba, B.P., Reisz, J.A., D'Alessandro, A., Brewster, L.M., DeSouza, C.A., You, Z., Chonchol, M., Bailey, E.F., Seals, D.R. Time-efficient inspiratory muscle strength training lowers blood pressure and improves endothelial function, NO bioavailability, and oxidative stress in midlife/older adults with above-

normal blood pressure. *J Am Heart Assoc.* 10(13): e020980, 2021. doi: 10.1161/JAHA.121.020980.

19. Heinbockel, T.C., **Craighead, D.H.** Case studies in physiology: Impact of a long-distance hike on the Pacific Crest Trail on arterial function and body composition in a highly fit young male. *Phys Rep.* 9(5): e14767, 2021. doi: 10.14814/phy2.14767.
20. **Craighead, D.H.***, Freeberg, K.A*, Seals D.R. Vascular Endothelial Function in midlife/older adults classified according to 2017 American College of Cardiology/American Heart Association Blood Pressure Guidelines. *J Am Heart Assoc.* 9(17):e016625, 2020. doi: 10.1161/JAHA.120.016625. * co-first author.
21. **Craighead, D.H.,** Freeberg, K.A., Seals, D.R. The protective role of regular aerobic exercise on vascular function with aging. *Curr Opin Physiol.* 10: 55-63, 2019. doi: 10.1016/j.cophys.2019.04.005.
22. **Craighead, D.H.,** Heinbockel, T.C., Hamilton, M.N., Bailey, E.F., MacDonald, M.J., Gibala, M.J, Seals, D.R. Time-efficient physical training for enhancing cardiovascular function in mid-life and older adults: promise and current research gaps. *J Appl Physiol*. 127(5):1427-1440, 2019. doi: 10.1152/japplphysiol.00381.2019.
23. **Craighead, D.H.,** Wang, H, Santhanam, L., Alexander, L.M. Acute lysyl oxidase inhibition alters microvascular function in normotensive, but not hypertensive, men and women. *Am J Physiol Heart Circ Physiol.* 314(3): H424-H433, 2017. doi: 10.1152/ajpheart.00531.2017.
24. Smith, C.J.*, **Craighead, D.H.***, Alexander, L.M. Effects of vehicle microdialysis solutions on cutaneous vascular responses to local heating. *J Appl Physiol.* 123(6): 1461-1467, 2017. doi: 10.1152/japplphysiol.00498.2017. * co-first author.
25. **Craighead, D.H.,** Alexander, L.M. Menthol-mediated cutaneous vasodilation is attenuated in men and women with essential hypertension. *Am J Hypertens*. 30(12): 1156-1162, 2017. doi: 10.1093/ajh/hpx127.
26. **Craighead, D.H.,** Shank, S.W., Volz, K.V., Alexander, L.M. Kinesiology tape modestly increases skin blood flow regardless of tape application technique. *J Perform Health Res*. 1: 72-78, 2017. PMID: 34527888.
27. **Craighead, D.H.,** Smith, C.J., Alexander, L.M. Blood pressure normalization via pharmacotherapy improves cutaneous microvascular function through NO-dependent and NO-independent mechanisms. *Microcirculation.* 24(7): 2017. doi: 10.1111/micc.12382.
28. **Craighead, D.H.,** McCartney, N.B., Tumlinson, J.H., Alexander, L.M. Mechanisms and time course of menthol-induced cutaneous vasodilation. *Microvasc Res.* 110: 43-47, 2017. doi: 10.1016/j.mvr.2016.11.008.
29. **Craighead, D.H.,** Shank, S.W., Gottschall, J.S., Passe, D.H., Murray, B., Alexander, L.M., Kenney, W.L. Ingestion of transient receptor potential channel agonists attenuates

exercise-induced muscle cramps. *Muscle Nerve,* 56(3): 379-385, 2017. doi: 10.1002/mus.25611.

30. **Craighead, D.H.,** Alexander, L.M. Topical menthol increases cutaneous blood flow. *Microvasc Res.* 107: 39-45, 2016. doi: 10.1016/j.mvr.2016.04.010.
31. Kenney, W.L., **Craighead, D.H.**, Alexander, L.M. Heat waves, aging, and human cardiovascular health. *Med Sci Sports Exerc,* 46(10): 1891-1899, 2014. doi: 10.1249/MSS.0000000000000325.
32. **Craighead, D.H.**, Lehecka, H, King, D.L. A novel running mechanic's class changes kinematics but not running economy. *J Strength Cond Res,* 28(11): 3137-3145, 2014. doi: 10.1519/JSC.0000000000000500.

Commentaries, Viewpoints, and Editorials

1. Freeberg, K.A., Ludwig, K.R., **Craighead, D.H.,** Rossman, M.J. Value of "infection controls" for isolating pathophysiological effects specific to SARS-CoV-2. *J Appl Physiol.* 133(5): 1223, 2022. doi: 10.1152/japplphysiol.00536.2022.
2. Freeberg, K.A., **Craighead, D.H.** Commentary on point:counterpoint: investigators should/should not control for menstrual cycle phase when performing studies of vascular control. *J Appl Physiol.* 129(5): 1123, 2020. doi: 10.1152/japplphysiol.00809.2020.
3. **Craighead, D.H.** Commentary on viewpoint: physiology and fast marathons. *J Appl Physiol.* 128(4): 1078-1079, 2020. Doi: 10.1152/japplphysiol.00167.2020.
4. McCarty, N.P., **Craighead, D.H.,** Freeberg, K.A. Overcoming exercise barriers: Home-based HIT for reducing cardiovascular disease risk in obese individuals. *J Physiol.* 598(1): 13-14, 2020. doi: 10.1113/JP279074.
5. DeLucia, C.M., **Craighead, D.H.** Sex differences in diaphragmatic fatigue: do young women have an advantage? *J Physiol.* 596(22): 5303-5304, 2018. doi: 10.1113/JP277120.

Published Book Chapters

1. Murray, B., **Craighead, D.** Fuel and fluid. In, Running Science, J Brewer, ed. East Sussex, UK: Ivy Press, May 2017

Published Abstracts

1. Udovich, C., Ludwig, K., **Craighead, D.H.,** Schutz, U., Schmidt-Trucksass, A., Seals, D. Completing a 4,486 km multi-stage ultramarathon increases arterial stiffness and alters circulating factors that cause endothelial cell dysfunction. *Physiology*, 39(S1), 2024.
2. Mahoney, S., VanDongen, N., Greenberg, G., Venkatasubramanian, R., **Craighead, D.H.,** Rossman, M.J., Widlansky, M. The circulating milieu mediates arterial dysfunction with aging: protection by habitual aerobic exercise. *Physiology*, 39(S1), 2024.

3. Noonan-Shueh, A., Frederick, H., Salerno, A., **Craighead, D.H.,** Gingold, D., Sward, D. Cardiovascular and muscular changes during long-distance hiking. 46th Annual Medical Student Research Day, University of Maryland, 2023.
4. Izaias, J., Bernardes, R., Ono, B., Faria, D., Sales, A., Testa, L., Moniz, C., Mota, M., Salemi, V.M., Rossman, M.J., **Craighead, D.H.,** Clayton, Z.S., Bortolotto, L., Irigoyen, M.C., Colombo, F., Seals, D.R., Kluser, A. Sympathetic neurol overactivity, endothelial dysfunction, aortic stiffening, and diminished exercise capacity in breast cancer survivors treated with doxorubicin and trastuzumab-based chemotherapy. *Circulation,* 148(S1), 2023.
5. Tavoian, D., Mazzone, J.L., **Craighead, D.H.,** Bailey, E.F. Inspiratory resistance training transiently improves endothelium-dependent dilation in young adults. *Physiology*, 38(S1), 2023.
6. Hemingway, H., Bazzoni, A., **Craighead, D.H.,** Rosenberg, H.L., Nguyen, K., Freeberg, K.A., Adam, E., Longtime, A., Chonchol, M., Minson, C.T., Seals, D.R., Brunt, V.E. Passive heat therapy improves cognitive and cerebrovascular function in healthy midlife and older adults. *Physiology*, 38(S1), 2023.
7. Coppock, M.E., Darvish, S., Murray, K.O., **Craighead, D.H.,** Seals, D.R., Chonchol, M., Rossman, M.J. Sex-specific effects of mild to moderate renal dysfunction on vascular endothelial function and large elastic artery stiffness. *Physiology,* 38(S1), 2023.
8. Tavoian, D., Mazzone, J.L., **Craighead, D.H.,** Bailey, E.F. Vascular conditioning exercise acutely enhances endothelial function in young adults. *Hypertension*, 79 (1S), 2022.
9. Faria, D., Testa, L., Moll-Bernardes, R., Moniz, C., Rodrigues, E., Costa-Neta, A., Sousa, A., Rodrigues, A., Oliveira, P., Alves, M.J., Santos, G., Salemi, V., Pimenta, R., Paixao, C., Santos, B., Rondon, M.U., **Craighead, D.H.,** Rossman, M., Consolim-Colombo, F.M., Irigoyen, M.C., Martinez-Lemus, L.A., Padilla, J., Seals, D.R., Negrao, C.E, Sales, A. Sympathetic neural overdrive, endothelial dysfunction and aortic stiffness in coronavirus disease 2019 survivors: a short-term study of cardiovascular sequelae. *Circulation,* 144(1S), 2021.
10. Freeberg, K.A., Heinbockel, T.C., Rossman, M.J., Jackman, R.A., McCarty, N.P., Jankowski, L.R., Nemkov, T., Reisz, J.A., D'Alessandro, A., Bailey, E.F., Seals, D.R., **Craighead, D.H.** *The FASEB J,* 36 (1S), 2022.
11. Maurer, S.M., Freeberg, K.A., Seals, D.R., **Craighead, D.H.** Objectively measured vigorous-intensity physical activity is related to endothelial function in midlife and older men but not in estrogen-deficient postmenopausal women. *The FASEB J,* 36 (1S), 2022.
12. Seals, D.R., **Craighead, D.H.,** Freeberg, K.A., Martens, C. R. Oral supplementation of NAD+ precursors for promoting healthy cardiovascular aging. NIH Exploring Opportunities and Feasibility of Trials on Effects of Increasing NAD+ Levels in Older Adults, 2021.
13. Faria, D., Testa, L., Moll-Bernardes, R., Moniz, C., Rodrigues, E., Costa-Neta, A., Sousa, A., Rodrigues, A., Oliveira, P., Alves, M.J., Santos, G., Salemi, V., Pimenta, R., Paixao, C.,

Santos, B., Rondon, M.U., **Craighead, D.H.,** Rossman, M.J., Consolim-Colombo, F.M., Irigoyen, M.C., Martinez-Lemus, L.A., Padilla, J., Seals, D.R., Negrao, C.E., Sales, A. Sympathetic neural overdrive, endothelial dysfunction and aortic stiffness in coronavirus disease 2019 survivors: a short-term study of cardiovascular sequelae. *Circulation.* 144(S1), 2021.

14. Freeberg, K.A., Heinbockel, T.C., Rossman, M.J., Jackman, R.A., Jankowski, L.R., Chonchol, M., Bailey, E.F., Seals, D.R., **Craighead, D.H.** High-resistance inspiratory muscle strength training improves cerebrovascular function in midlife/older adults. *The FASEB J*, 35 (1S), 2021.
15. McCarty, N.P., Freeberg, K.A., Seals, D.R., **Craighead, D.H.** Cerebrovascular reactivity is related to peripheral endothelial function among healthy postmenopausal women but not midlife and older men. *The FESEB J*, 35 (1S), 2021.
16. Smith, M.E., Freeberg, K.A., **Craighead, D.H.,** Bryan, A.D., Seals, D.R., LaRocca, T.J. Novel transcriptomic predictors of exercise training-induced VO_2max improvements. *The FESEB J*, 35 (1S), 2021.
17. **Craighead, D.H.,** Ziemba, B.P., Freeberg, K.A., Rossman, M.J., Brown, B.C., Nemkov, T., Reisz, J.A., D'Alessandro, A., Chonchol, M., Bailey, E.F., Seals, D.R., Inspiratory muscle strength training improves vascular endothelial function in older adults by altering circulating factors that suppress superoxide and enhance nitric oxide. *The FASEB J*, 34 (1S), 2020.
18. Freeberg, K.A., McCarty, N.P., Seals, D.R., **Craighead, D.H.** Higher maximal cardiorespiratory fitness is associated with lower cerebrovascular stiffness in healthy mid-life and older adults. *The FASEB Journal,* 34 (1S), 2020.
19. **Craighead, D.H.,** Ziemba, B.P., Freeberg, K.A., Rossman, M.J., Brown, B.C., Nemkov, T., Reisz, J.A., D'Alessandro, A., Chonchol, M., Bailey, E.F., Seals, D.R. Inspiratory muscle strength training improves endothelial function in older adults: possible role of circulating factors. Cardiovascular & Respiratory Symposium, March 12-14, 2020, Silver Star Mountain, British Columbia, Canada.
20. Freeberg, K.A., McCarty, N.P., Seals, D.R., **Craighead, D.H.** Cerebrovascular stiffness is inversely associated with cardiorespiratory fitness and physical activity levels in midlife/older adults. Okanagan Cardiovascular & Respiratory Symposium, March 12-14, 2020, Silver Star Mountain, British Columbia, Canada.
21. Dillon, G.A., **Craighead, D.H.,** Alexander, L.M. Cutaneous activation of TRPM8 receptors does not mediate cross dermatome changes in blood flow. International Conference on Environmental Ergonomics, July 7-12, 2019, Amsterdam, Netherlands.
22. **Craighead, D.H.,** Heinbockel, T.C., Rossman, M.J., Jankowski, L.R., Jackman, R.A., Bailey, E.F., Chonchol, M., Seals, D.R. Inspiratory muscle strength training lowers resting systolic blood pressure and vascular endothelial function in middle-aged and older adults. *The FASEB Journal*, 33 (1S), 541.4, 2019.

23. Heinbockel, T.C., Rossman, M.J., Jankowski, L.R., Jackman, R.A., Bailey, E.F., Chonchol, M.B., Seals, D.R., **Craighead, D.H.** Effects of inspiratory muscle strength training on cardiorespiratory fitness in middle-aged to older adults. *The FASEB Journal*, 33 (1S), 695.4, 2019.
24. Hamilton, M.N., Rossman, M.J., Heinbockel, T.C, Jackman R.A., Jankowski, L.R., Bailey, E.F., Chonchol, M., Seals, D.R., **Craighead, D.H.** Effects of inspiratory muscle strength training on cognitive and motor function in middle-aged and older adults with above-normal systolic blood pressure. *The FASEB Journal*, 33 (1S), 695.5, 2019.
25. Freeberg, K.A., **Craighead, D.H.,** Seals, D.R. Vascular endothelial function is impaired in adults with above-normal blood pressure according to 2017 ACC/AHA blood pressure guidelines. *The FASEB Journal*, 33 (1S), 696.10, 2019.
26. Rossman, M.J., Rosenberg, H.L., Seals, D.R., **Craighead, D.H.** Healthy vascular aging is associated with higher cognitive function in middle-aged and older adults. *The FASEB Journal,* 33 (1S), 835.6, 2019.
27. Hamilton, M.N., **Craighead, D.H.,** Rossman, M.J., Heinbockel, T., Bailey, F., Chonchol, M., Seals, D. Effects of inspiratory muscle strength training on motor and cognitive function in adults with elevated blood pressure, Annual Biomedical Research Conference for Minority Students, November 14-17, 2018, Indianapolis, IN.
28. **Craighead, D.H.,** Alba, B.K., Snyder, A., Alexander, L.M. TheraBand® roller massager increases cutaneous blood flow and neurosensory threshold of Ad and Ab sensory nerve fibers. *J Perform Health Res*, 2 (2), 11, 2018.
29. **Craighead, D.H.,** Nahmod, N.G., Buxton, O.M., Chang, A-M.M., Alexander, L.M. Five nights of sleep restriction attenuates microvascular endothelial function. *The FASEB Journal*, 32 (1S), 722.20, 2018.
30. **Craighead, D.H.**, Santhanam, L., Alexander, L.M. Acute lysyl oxidase inhibition augments endothelium-dependent vasodilation in young, but not middle-aged, men and women. *The Physiologist*, 60(6), 443-444, 2017.
31. **Craighead, D.H.,** Alba, B., Snyder, A., Alexander, L.M. The effects of the TheraBand® roller massager on muscle soreness and cutaneous blood flow. *J Perform Health Res*, 1 (2), 15, 2017.
32. **Craighead, D.H.**, Santhanam, L., Alexander, L.M. Acute lysyl oxidase inhibition augments cutaneous vasoconstriction in normotensive, but not hypertensive, men and women. The FASEB Journal, 31 (1S) 840.4, 2017.
33. Clarke, M.M, **Craighead, D.H.**, Alba, B.K., Shank, S.W. What are you blubbering about? A study of comparative cold physiology. The FASEB Journal, 31(1S) 576.24, 2017
34. **Craighead, D.H.,** Alexander, L.M., Time course of menthol's effects on the cutaneous microvasculature. *J Performance Health*, 1(1): 64-5, 2016.

35. **Craighead, D.H.,** Conlon, C.C., Alexander, L.M. Topical Menthol Application Augments Cutaneous Microvascular Blood Flow. *International Journal of Exercise Science: Conference Proceedings*, 9(4), article 34, 2016.
36. **Craighead, D.H.,** Shank, S.W., Alexander L.M., Kenney, W.L. Orally Ingested Transient Receptor Potential (TRP) Channel Activators Attenuate the Intensity-Duration of Voluntarily Induced Muscle Cramps in Humans. *The FASEB Journal*, 30(1S) ib706, 2016.
37. **Craighead, D.H.,** Shank, S.W, Alexander, L.M. Kinesiology tape increases cutaneous microvascular blood flow independent of tape tension. *Proceedings of the 17th annual TRAC meeting*, Vancouver, BC, July 29-31, 2015.
38. **Craighead, D.H.,** Shank, S.W., Alexander, L.M. Menthol increases skin blood flow dose-dependently. *Proceedings of the 17th annual TRAC meeting*, Vancouver, BC, July 29-31, 2015.
39. **Craighead, D.H.**, Kenney, W.L., Alexander, L.M. Lisinopril Improves Cutaneous Microvascular Function in Hypertensive Men and Women. *The FASEB Journal*, 29(1S) 994.1, 2015.
40. **Craighead, D.H.**, Conlon, C., Alexander, L.M. Ilex Increases Cutaneous Blood Flow by Augmenting Endothelium-derived Hyperpolarizing Factors. *International Journal of Exercise Science: Conference Proceedings*, 9(2), 2014.
41. Conlon, C., **Craighead, D.H.,** Alexander, L.M. Biofreeze ingredient ilex increases skin blood flow through endothelium-derived hyperpolarizing factor mechanisms. *Proceedings of the 15th annual TRAC meeting*, Moscow, Russia, August 2-4, 2013.
42. **Craighead, D.H.**, Dahmus, J.D., Kenney, W.L., Alexander, L.M. Age and Body Mass Index Predict Impaired EDHF-mediated Vasodilation in Human Skin, American College of Sports Medicine annual meeting, May 28-June 1, 2013, Indianapolis, IN.
43. Dahmus, J.D., **Craighead, D.H.**, Kenney, W.L., Alexander, L.M. Total/HDL cholesterol ratio predicts impaired NO-dependent vasodilation in human skin, Experimental Biology, April 20-24, 2013, Boston, MA. *The FASEB Journal, 2013.*
44. **Craighead, D.H.**, Dahmus, J.D., Kenney, W.L., Alexander-Holowatz, L.M. Low-density Lipoproteins, Body Mass Index, and the Female Sex Are Predictors of Reduced Cutaneous Reactive Hyperemia in Human Skin, Mid-Atlantic Regional Conference ACSM, November 2-3, 2012, Harrisburg, PA. *International Journal of Exercise Science*, *2013.*

Lay Publications

1. Freeberg K.A, **Craighead D.H.** How to run your best in the worst Boston weather conditions. *Runnersworld.com*. March 27, 2019.
2. **Craighead, D.H.** The science of cold weather running. *Neelyruns.com.* October 20, 2018.
3. **Craighead, D.H.** Train hot, race cool: a new way to improve running performance. *Neelyruns.com.* November 4, 2017.

4. **Craighead, D.H.** Exercise is key to good health as we age. *Centre Daily Times*. June 18, 2016.

SCIENTIFIC MEETINGS

Invited Presentations

June 2023	"High-Resistance Inspiratory Muscle Strength Training: a Time-Efficient Strategy for Improving Cardiovascular Aging," North American Artery Annual Meeting, Iowa City IA
May 2023	"High-Resistance Inspiratory Muscle Strength Training: from Molecular Mechanisms to Clinical Applications," American College of Sports Medicine Annual Meeting, Denver CO
April 2023	"A Brief History of Exercise Physiology," American Physiology Summit, Long Beach CA
October 2022	"Lifestyle & Nutraceutical Approaches for Promoting Health Cardiovascular Aging," Penn State Noll Seminar Series, University Park PA
July 2022	"High-resistance inspiratory muscle strength training for improving cardiovascular health," RMT Japan
December 2021	"Collaboration Roadmap: an example of team science advancing biomedical research," University of Arizona Physiology Seminar Series, University of Arizona College of Medicine, Tucson AZ
February 2021	"Time-Efficient Inspiratory Muscle Strength Training for Improving Cardiovascular Health," Department of Integrative Physiology Colloquium, University of Colorado Boulder, Boulder CO
January 2020	"The Pre to Post-Doctoral Transition," Department of Kinesiology Graduate Seminar, University of Tennessee Knoxville, Knoxville TN
April 2018	"Inspiratory Muscle Training for Lowering Blood Pressure and Improving Vascular Function in Middle-Aged and Older Adults," Division of Renal Diseases & Hypertension Renal Research Conference, University of Colorado Anschutz Medical Campus, Aurora CO
August 2017	"Navigating the *Ins* and *Outs* of Graduate School," American Physiological Society Cardiovascular Aging: New Frontiers and Old Friends, Westminster CO
November 2016	"Mechanisms of Cutaneous Microvascular Dysfunction in Men and Women with Essential Hypertension," Penn State Noll Seminar Series, University Park PA

Abstract Presentations

April 2020	"Inspiratory Muscle Strength Training Improves Vascular Endothelial Function in Older Adults by Altering Circulating Factors that Suppress Superoxide and Enhance Nitric Oxide," Experimental Biology Annual Meeting, San Diego CA. *Accepted Oral Presentation (meeting cancelled)*
March 2020	"Inspiratory Muscle Strength Training Improves Endothelial Function in Older Adults: Possible Role of Circulating Factors," Okanagan Cardiovascular & Respiratory Symposium, Vernon BC, Canada. *Accepted Oral Presentation (meeting cancelled)*
April 2019	"Inspiratory Muscle Strength Training Lowers Resting Systolic Blood Pressure and Improves Vascular Endothelial Function in Middle-Aged and Older Adults," Experimental Biology Annual Meeting, Orlando FL. *Poster Presentation*
April 2018	"Five Nights of Sleep Restriction Attenuates Microvascular Endothelial Function," Experimental Biology Annual Meeting, San Diego CA. *Poster Presentation*
August 2017	"Acute Lysyl Oxidase Inhibition Augments Endothelium-Dependent Vasodilation in Young, but not Middle-Aged, Men and Women," American Physiological Society Cardiovascular Aging: New Frontiers and Old Friends, Westminster CO. *Poster Presentation*
April 2017	"Acute Lysyl Oxidase Inhibition Augments Cutaneous Vasoconstriction in Normotensive, but not Hypertensive, Men and Women," Experimental Biology Annual Meeting, Chicago IL. *Poster Presentation*
November 2016	"Oral TRP Agonists Delay Cramp Onset and Decrease Muscle Soreness in a Self-induced Cramp Model," American College of Sports Medicine Mid Atlantic Regional, Harrisburg PA. *Oral Presentation*
April 2016	"Orally Ingested Transient Receptor Potential Channel Activators Attenuate the Intensity-Duration of Voluntarily Induced Muscle Cramps in Humans," Experimental Biology Annual Meeting, San Diego CA. *Poster Presentation*
November 2015	"Topical Menthol Application Augments Cutaneous Microvascular Blood Flow," American College of Sports Medicine Mid Atlantic Regional Conference, Harrisburg PA. *Oral Presentation*
April 2015	"Lisinopril Improves Cutaneous Microvascular Function in Hypertensive Men and Women," Experimental Biology Annual Meeting, Boston MA. *Poster Presentation*

May 2014	"Ilex Increases Cutaneous Blood Flow by Augmenting Endothelium-derived Hyperpolarizing Factors," American College of Sports Medicine Annual Meeting, Orlando FL. *Oral Presentation*
November 2013	"Ilex Increases Cutaneous Blood Flow by Augmenting Endothelium-derived Hyperpolarizing Factors," American College of Sports Medicine Mid Atlantic Regional Conference, Harrisburg PA. *Oral Presentation*
May 2013	"Age and Body Mass Index Predict Impaired EDHF-mediated Vasodilation in Human Skin," American College of Sports Medicine Annual Meeting, Indianapolis IN. *Oral Presentation*
November 2012	"Low-density Lipoproteins, Body Mass Index, and the Female Sex Are Predictors of Reduced Cutaneous Reactive Hyperemia in Human Skin," American College of Sports Medicine Mid Atlantic Regional Conference, Harrisburg PA. *Oral Presentation*
April 2012	"Effect of Running Classes on Kinematics and Economy," James J. Whalen Academic Symposium, Ithaca NY. *Oral Presentation*

Chaired Sessions

April 2021	Chair: Time-Efficient Physical Training for Cardiovascular Health. Experimental Biology Annual Meeting, Virtual
April 2018	Co-chair: Novel Approaches and Techniques in Water and Electrolyte Research. Experimental Biology Annual Meeting, San Diego California

PUBLIC PRESENTATIONS

September 2022	"Novel physical activity for improving cardiovascular aging," Boulder Senior Services, Boulder, CO
March 2022	"Time-efficient exercise for cardiovascular health," Princeton University Learning Center Health and Wellness Series, Virtual Presentation
January 2021	"The biology of aging," Boulder Senior Services, Boulder, CO
October 2019	"New types of exercise and 'exercise-like' strategies for cardiovascular health," Boulder Senior Services, Boulder, CO
October 2018	"Emerging Science: New Ways to Improve Healthspan," Boulder Senior Services, Boulder, CO
June 2018	"The Science of Aging," Science Matters, Broomfield, CO
April 2018	"Healthy living: reliable, evidence-based information about healthy aging" Lafayette Senior Services, Lafayette, CO
February 2018	"Evidence based healthy aging," Boulder Senior Services, Boulder, CO
April 2017	"Healthy aging: optimizing longevity through exercise" Osher Lifelong Learning Institute, State College, PA

November 2016	"Special physical fitness considerations for young adults," The Delta Program Health and Wellness Day, State College, PA
July 2016	"The science behind physical activity," Osher Lifelong Learning Institute, State College, PA
October 2015	"Evidence based healthy aging," Osher Lifelong Learning Institute, State College, PA
August 2014	"Heat stress and adaptation in runners," State College High School, State College, PA

TEACHING EXPERIENCE

Courses Taught

2023	Professional Skills for the Research Scientist (IPHY 6830), co-instructor, University of Colorado Boulder
2021	Colloquium in Integrative Physiology (IPHY 5100), co-instructor, University of Colorado Boulder
2019	Health and Function Over the Adult Lifespan (IPHY 3590), guest instructor, University of Colorado Boulder
2018, 2020	Physiology of Aging (IPHY 6010), co-instructor, University of Colorado Boulder
2016	Environmental Physiology (KINES 453), guest instructor, The Pennsylvania State University
2013-2016	Exercise Physiology (KINES 350), teaching assistant, The Pennsylvania State University

PROFESSIONAL SERVICE ACTIVITIES

Society Memberships

2014-present	American Physiological Society Section Affiliations: Exercise and Environmental Physiology, Cardiovascular
2013-present	American College of Sports Medicine
2013-2020	American Heart Association

Professional Service

2024-2027	American College of Sports Medicine Research Awards Committee member
2024	American Heart Association Career Development Award reviewer
2024	National Science Foundation SBIR grant ad hoc reviewer
2023	Ireland Health Research Board Investigator Led Projects grant reviewer
2021, 2024	Colorado (CO) Pilot Grant Program Reviewer
2019	University of Colorado Boulder Integrative Physiology Undergraduate Research Symposium Judge
2019	University of Colorado Boulder Undergraduate Scholarship Reviewer
2017-2019	American Physiological Society Career Opportunities in Physiology Committee member

2017-2020 Life Science Teaching Resource Community (LifeSciTRC) Review Board member
2012-2016 American Physiological Society, PhUn Week
Poster Presenter (EB 2015)
Activity Coordinator (PhUn Week 2015)

Journal Reviewer
Alcoholism: Clinical and Experimental Research
American Journal of Physiology – Heart and Circulatory Physiology
American Journal of Physiology – Regulatory, Integrative and Comparative Physiology
Archives of Gerontology and Geriatrics
BMC Cardiovascular Disorders
BMC Geriatrics
Brazilian Journal of Medical and Biological Research
European Journal of Applied Physiology
European Journal of Sports Science
European Review of Aging and Physical Activity
Exercise and Sports Science Reviews
Experimental Gerontology
Experimental Physiology
Extreme Physiology & Medicine
Frontiers in Cardiovascular Medicine
Frontiers in Nutrition
Frontiers in Physiology
General Physiology and Biophysics
International Journal of Sports Medicine
Journal of Aging and Physical Activity
Journal of the American College of Cardiology
Medical Education Online
Medicine & Science in Sport & Exercise
Microvascular Research – **Editorial board member (2023-present)**
Muscle and Nerve
Physiological Reports
The Journal of Applied Physiology
The Journal of Physiology

PROFESSIONAL TRAINING

University of Colorado Anschutz Medical Campus: *Health Equity in Action Lab (HEAL) Foundations of Equity Certificate Program,* In-Person Course, 2024

American Physiological Society: *Reviewer Certificate Program*, Online On-Demand Course, July 2023

National Institutes of Health: *NIH Implicit Bias – Full Course*, Online On-Demand Course, November 2022

APS Professional Skills Training Course: *Control in Animal Studies for Rigor and Reproducibility,* Online On-Demand Course, July 2019

APS Professional Skills Training Course: *Professional Integrity: Best Practices for Publishing Your Research,* Online On-Demand Course, August 2019

MENTORSHIP

Mentored Trainees

Favian Morales	Masters Student	2024
Zaynah Khan	Undergraduate Student	2024
Dallin Tavoian	Postdoctoral Fellow	2023-2024
CeAnn Udovich	Masters Student	2022-2024
Grace Maurer	Masters Student	2021
Lucy Egan	Undergraduate Student	2021-2023
Narissa McCarty	Masters Student	2019-2021
Rose Goodman	Undergraduate Student	2019-2021
Kaitlin Freeberg	Masters Student	2018-2020
Thomas Heinbockel	Masters Student	2017-2019
Makinzie Hamilton	Undergraduate Student	2017-2020

Honors and Awards by Trainees

2023-2024	Dallin Tavoian (postdoctoral fellow): American Heart Association Postdoctoral Fellowship
2022-2023	Lucy Egan (undergraduate): Biological Sciences Initiative Scholarship, University of Colorado Boulder
2022	Lucy Egan (undergraduate): Gates Summer Internship Program, University of Colorado Anschutz Medical Campus
2019-2021	Rose Goodman (undergraduate): Biological Sciences Initiative Scholarship, University of Colorado Boulder
2019	Makinzie Hamilton (undergraduate): Barbara A. Horwitz and John M. Horowitz Undergraduate Research Award, American Physiological Society
2019	Makinzie Hamilton (undergraduate): Stanford MD/PhD Preview 2019 awardee, Stanford Biosciences Programs
2019	Makinzie Hamilton (undergraduate): Barbara A. Horwitz and John M. Horowitz Undergraduate Abstract Award, American Physiological Society
2019	Thomas Heinbockel (MS): Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award, American Physiological Society
2018-2019	Makinzie Hamilton (undergraduate): Biological Sciences Initiative Scholarship, University of Colorado Boulder

2018 Makinzie Hamilton (undergraduate): ABRCMS Student Travel Award, American Society for Microbiology

2018 Makinzie Hamilton (undergraduate): Short-Term Research Education Program to Increase Diversity in Health-Related Research (STRIDE) Fellowship, American Physiological Society