Brandt D. Pence

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Education

2019-2024 **Master of Science**, awarded May 2024
Data Science
– Graduate Certificate in Data Science, awarded May 2022
– Graduate Certificate in Bioinformatics, awarded Dec 2020
University of Memphis, Memphis, TN, USA

2007-2012 **Doctor of Philosophy**, awarded May 2012
Exercise Physiology, specialization in Exercise Immunology
University of Illinois at Urbana-Champaign, Urbana, IL, USA

2003-2007 **Bachelor of Arts**, awarded May 2007
Movement and Sports Sciences
Purdue University, West Lafayette, IN, USA

Appointments

Primary Appointments

2021-Present **Associate Professor** (with Tenure)
College of Health Sciences
University of Memphis, Memphis, TN, USA

2016-2021 **Assistant Professor**
College of Health Sciences
University of Memphis, Memphis, TN, USA

2012-2016 **Postdoctoral Research Associate**
Department of Kinesiology and Community Health
University of Illinois at Urbana-Champaign, Urbana, IL, USA

2007-2012 **Research and Teaching Assistant**
Department of Kinesiology and Community Health
University of Illinois at Urbana-Champaign, Urbana, IL, USA

2006-2007 **Undergraduate Laboratory Assistant**
Department of Health and Kinesiology
Purdue University, West Lafayette, IN, USA

Administrative Appointments

2025-Present **Vice Provost Fellow**
Graduate School
University of Memphis, Memphis, TN, USA

2024-Present **Interim Director**
Environmental Nutrition M.S.
College of Health Sciences
University of Memphis, Memphis, TN, USA

2023-Present **Director of Research**
College of Health Sciences
University of Memphis, Memphis, TN, USA

2023-Present **Nutrition Unit Coordinator**
College of Health Sciences
University of Memphis, Memphis, TN, USA

Other Appointments

2021-2024 **University Research Professor**
University of Memphis, Memphis, TN, USA

2016-Present **Affiliated Faculty**
Center for Nutraceutical and Dietary Supplement Research
University of Memphis, Memphis, TN, USA

Research Interests

- Regulation of monocyte and macrophage metabolism and function by aging
- Immunometabolic responses to age-related chronic and infectious diseases
- Exercise and nutritional interventions to promote immune health in aging and disease
- Research policy in institutions of higher education

Grants

Current External Support

National Science Foundation 10/01/2023 – 09/30/2026
Major Instrumentation Grant (2319905)
MRI: Track 1 Acquisition of a fluorescence activated cell sorter to advance multidisciplinary biological research and training at the University of Memphis
Co-Principal Investigator (PI Jennifer Mandel, Co-PIs Marie van der Merwe, Judith Cole)
$429,371

National Cancer Institute 09/01/2022 – 08/31/2027
Metabolic Dysregulation and Cancer Risk Program Research Grant (U01CA272541)
Determining the contribution of microbial-derived metabolites to protective immunity in obesity-driven cancer risk
Co-Investigator (MPI Liza Makowski, Joseph Pierre, Jeffrey Rathmell)
Subcontract Co-Principal Investigator (with Marie van der Merwe, subcontract Co-PI)
$5,233,390

National Institute on Aging 09/01/2022 – 08/31/2026 (NCE)
NIH Academic Research Enhancement Award (R15AG078906)
Mitochondrial determinants of monocyte dysfunction in aging
Principal Investigator
$414,136

Current Internal Support

University of Memphis 01/01/2022 –
College of Health Sciences Faculty Research Grant
Lactate as a modulator of innate immunity after high intensity exercise
Principal Investigator
$7,500

Completed Support

American Heart Association 07/01/2019 – 06/30/2023
Transformational Project Award (19TPA34910132)
Mdivi-1 as an immunometabolic regulator to treat atherosclerosis
Principal Investigator
$300,000

Completed Support cont.

University of Tennessee Health Science Center 08/01/2020 –
UTHSC/UofM SARS-CoV-2/COVID-19 Research CORNET Award
Determination of inflammatory and fibrotic markers in SARS-CoV-2 infected macrophages and fibroblasts
Co-Principal Investigator (with Ted Cory, Co-PI, UTHSC)
$50,000

University of Memphis 10/01/2020 – 04/30/2021
Community of Research Scholars
Mid-South metabolism, immunity, and inflammation
Principal Investigator
$2,500

University of Memphis 01/01/2019 – 12/31/2021
School of Health Studies Faculty Research Grant
Modulation of LPS responses in mice by EGCG and Mdivi-1
Principal Investigator
$7,500

FedEx Institute of Technology 05/01/2019 – 06/30/2021
Agriculture and Food Technologies Research Cluster Pilot Grants
A plant-derived polyphenol modulates immunity through metabolic reprogramming of innate immune cells
Principal Investigator
$10,000

University of Washington Nathan Shock Center 07/01/2019 – 06/30/2020
Nathan Shock Center Metabolomics Pilot Award
Metabolomics for the effect of GDF-15 on monocyte immunosenescence
Principal Investigator
$10,000

American Heart Association 04/01/2018 – 01/31/2021
AHA Institutional Research Enhancement Award (18AIREA33960189)
Glycolytic metabolism and cellular function in monocytes from older adults
Principal Investigator
$154,000

American College of Sports Medicine 08/01/2018 – 12/31/2019
Foundation Research Endowment (17-00497)
Aging, exercise, and metabolic function in monocytes
Principal Investigator
$10,000

University of Memphis 01/01/2017 – 12/31/2018
School of Health Studies Faculty Research Grant
Maternal nutrition and offspring immune response to RSV infection in mice
Principal Investigator
$7,500

American College of Sports Medicine 07/01/2014 – 04/01/2016
Foundation Research Endowment (2014-03746)
Exercise and immune response to vaccinia infection in mice
Principal Investigator
$10,000

Gatorade Sports Science Institute 07/15/2009 – 08/31/2013
Student Grant Program (2010-00224)
Carbohydrate supplementation and DTH response to exhaustive exercise
Principal Investigator
$3,340

Completed Support cont.

Sigma Xi 01/01/2012 – 12/31/2012
Grants-in-Aid of Research (G20111015158327)
Macrophage function in obesity and influenza infection
Principal Investigator
$1,000

Midwest American College of Sports Medicine 01/01/2012 – 12/31/2012
Student Research Project Award
NLRP3 inflammasome activity in obesity, wound healing, and exercise
Principal Investigator
$500

American College of Sports Medicine 07/01/2009 – 06/30/2010
Foundation Student Grant (2009-03689)
Wound healing and exercise in diabetic mice
Principal Investigator
$4,956

Publications

Peer Reviewed Publications

†*senior/corresponding author H-index = 28; Citations = 11,225 (Google Scholar)*

54. Bohm MS, Joseph SC, Sipe LM, Kim M, Leathem CT, Mims TS, Willis NB, Tanveer UA, Elasy JH, Grey EW, Pye ME, Mustafa ZT, Harper BA, McGrath LG, Daria D, Schmitt BL, Myers JA, Newman PP, **Pence BD**, van der Merwe M, Davis MJ, Pierre JF, Makowski L. The gut microbiome enhances breast cancer immunotherapy following bariatric surgery. ***JCI Insight*** 10(11): e187683, 2025. 10.1172/jci.insight.187683

†53. Zhang Y, **Pence BD**. Revisiting mitochondrial dysfunction in aging biology research. ***Aging Pathobiology and Therapeutics*** 7(1): 1-4, 2025. 10.31491/APT.2025.03.163

†52. Newman PP, Schmitt BL, Maurmann RM, **Pence BD**. Polysaccharides with arabinose: Key players in reducing chronic inflamjmation and enhancing immune health in aging. ***Molecules*** 30(5): 1178, 2025. 10.3390/molecules30051178

†51. Mosalmanzadeh N, **Pence BD**. Oxidized low-density lipoprotein and its role in immunometabolism. ***International Journal of Molecular Sciences*** 25(21): 11386, 2024. 10.3390/ijms252111386

†50. **Pence BD**. Stricter definitions of myeloid senescence are needed. ***Aging Pathobiology and Therapeutics*** 6(2): 58-59, 2024. 10.31491/APT.2024.06.139

†49. Maurmann RM, Schmitt BL, Mosalmanzadeh N, **Pence BD**. Mitochondrial dysfunction at the cornerstone of inflammatory exacerbation in aged monocytes. ***Exploration of Immunology*** 3: 422-452, 2023. 10.37349/ei.2023.00112

†48. **Pence BD**. Targeting metabolism through exercise and nutrition to rejuvenate an aging immune system. ***Aging Pathobiology and Therapeutics*** 4(3): 60-62, 2022. 10.31491/APT.2022.09.088

47. **Pence B**, Zhang Y, Antwi, I, Cory TJ. Senescent macrophages alter fibroblast fibrogenesis in response to SARS-CoV-2. ***NeuroImmune Pharmacology and Therapeutics*** 1(1): 37-42, 2022. 10.1515/nipt-2022-0003

†46. **Pence BD**. Growth differentiation factor-15 in immunity and aging. ***Frontiers in Aging*** 3: 837575, 2022. Review. 10.3389/fragi.2022.837575

†45. Cory TJ, Emmons RS, Yarbro JR, Davis KL, **Pence BD**. Metformin suppresses immunometabolic activation by SARS-CoV-2 spike protein subunit 1. ***Frontiers in Immunology*** 12: 733921, 2021. 10.3389/fimmu.2021.733921

†44. **Pence BD**. Recent developments and future perspectives in aging and macrophage immunometabolism. ***AIMS Molecular Science*** 8(3): 193-201, 2021. Review. 10.3934/molsci.2021015

†43. **Pence BD**. Aging and monocyte immunometabolism in COVID-19. ***Aging*** 13(7): 9154-9155, 2021. Editorial. 10.18632/aging.202918

Peer Reviewed Publications cont. †*senior/corresponding author*

†42. **Pence BD**. Atypical monocytes in COVID-19: Lighting the fire of cytokine storm? ***Journal of Leukocyte Biology*** 109: 7-8, 2021. Commentary. 10.1002/JLB.5CE0920-613R

†41. **Pence BD**, Yarbro JR, Emmons RS. Growth differentiation factor-15 is associated with age-related monocyte dysfunction. ***Aging Medicine*** 4: 47-52, 2021. 10.1002/agm2.12128

†40. Yarbro JR, Emmons RS, **Pence BD**. Macrophage immunometabolism and inflammaging: Roles of mitochondrial dysfunction, cellular senescence, CD38, and NAD. ***Immunometabolism*** 2(3): e200026, 2020. Review. 10.20900/immunometab20200026

†39. **Pence BD**. Fanning the flames of inflammaging: Impact of monocyte metabolic reprogramming. ***Immunometabolism*** 2(3): e200025, 2020. Commentary. 10.20900/immunometab20200025

†38. **Pence BD**. Severe COVID-19 in aging: Are monocytes the key? ***GeroScience*** 42: 1051-1061, 2020. Review. 10.1007/s11357-020-00213-0

37. Nieman DC, **Pence BD**. Exercise immunology: Future directions. ***Journal of Sport and Health Science***. 9(5): 432-445, 2020. Review. 10.1016/j.jshs.2019.12.003

†36. Yarbro JR, **Pence BD**. Classical monocytes from older adults maintain capacity for metabolic compensation during glucose deprivation and lipopolysaccharide stimulation. ***Mechanisms of Ageing and Development*** 183: 111146, 2019. 10.1016/j.mad.2019.111146

35. Sun Y, **Pence BD**, Wang SS, Woods JA. Effects of exercise on stress-induced attenuation of vaccination responses in mice. ***Medicine and Science in Sports and Exercise*** 51(8): 1635-1641, 2019. 10.1249/MSS.0000000000001971

34. Smith DL, Friedman N, Bloom SI, Armero WL, **Pence BD**, Fernhall B, Horn GP, Woods JA. Firefighting induces acute inflammatory responses that are not relieved by aspirin in older firefighters. ***Journal of Occupational and Environmental Medicine*** 61(7): 617-622, 2019. 10.1097/JOM.0000000000001626

†33. **Pence BD**, Yarbro JR. Classical monocytes maintain ex vivo glycolytic metabolism and early but not later inflammatory responses in older adults. ***Immunity & Ageing*** 16: 3, 2019. 10.1186/s12979-019-0143-1

32. Mailing LJ, Allen JM, **Pence BD**, Rytych J, Sun Y, Bhattacharya TK, Park P, Cross TW, McCusker RH, Swanson K, Fahey GC, Rhodes JS, Kelley KW, Johnson RW, Woods JA. Behavioral response to fiber feeding is cohort dependent and associated with gut microbiota composition in mice. ***Behavioural Brain Research*** 359: 731-736, 2019. 10.1016/j.bbr.2018.09.012

†31. Yarbro JR, **Pence BD**. Monocytes in aging and exercise. ***Exercise Medicine*** 2: 15, 2018. Review. 10.26644/em.2018.015

†30. **Pence BD**, Yarbro JR. Aging impairs mitochondrial respiratory capacity in classical monocytes. ***Experimental Gerontology*** 108: 112-117, 2018. 10.1016/j.exger.2018.04.008

†29. **Pence BD**, Ryerson MR, Bravo Cruz AG, Woods JA, Shisler JL. Voluntary wheel running does not alter mortality to or immunogenicity of vaccinia virus in mice: A pilot study. ***Frontiers in Physiology*** 8: 1123, 2018. 10.3389/fphys.2017.01123

28. **Pence BD**, Bhattacharya TK, Park P, Rytych JL, Allen JM, Sun Y, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. Long-term supplementation with EGCG and beta-alanine decreases mortality but does not affect cognitive or muscle function in aged mice. ***Experimental Gerontology*** 98: 22-29, 2017. 10.1016/j.exger.2017.08.020

27. **Pence BD**, Bhattacharya TK, Park P, Rytych JL, Allen JM, Sun Y, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. Dose-dependent decrease in mortality with no cognitive or muscle function improvements due to dietary EGCG supplementation in aged mice. ***Applied Physiology, Nutrition, and Metabolism*** 42(5): 495-502, 2017. 10.1139/apnm-2016-0530

26. Klaren RE, Stasula U, Steelman AJ, Hernandez J, **Pence BD**, Woods JA, Motl RW. Effects of exercise in a relapsing-remitting model of experimental autoimmune encephalomyelitis. ***Journal of Neuroscience Research*** 94(10): 907-914, 2016. 10.1002/jnr.23783

Peer Reviewed Publications cont. *equal contribution

25. Cook MD, Allen JM, **Pence BD**, Wallig MA, Gaskins HR, Woods JA. Exercise and gut immune function: Evidence of alterations in colon immune homeostasis and microbiome characteristics with exercise training. ***Immunology and Cell Biology*** 94(2): 158-163, 2016. 10.1038/icb.2015.108
24. **Pence BD**, Gibbons TE, Bhattacharya TK, Mach HC, Ossyra JM, Petr G, Martin SA, Wang L, Rubakhin SS, Sweedler JV, McCusker RH, Kelley KW, Rhodes JS, Johnson RW, Woods JA. Differential effects of voluntary wheel running and a diet containing EGCG and β-alanine on physical function and gene expression in skeletal muscle of aged mice. ***Applied Physiology, Nutrition, and Metabolism*** 41(2): 181-190, 2016. 10.1139/apnm-2015-0372
23. Bhattacharya TK, **Pence BD**, Ossyra JM, Gibbons TE, Perez S, McCusker RH, Kelley KW, Johnson RW, Woods JA, Rhodes JS. Dietary supplementation with (-)-Epigallocatechin-3-gallate and/or β-Alanine does not enhance pro-cognitive or physical fitness effects of voluntary wheel running in young adult male BALB/cJ mice. ***Physiology & Behavior*** 145: 29-37, 2015. 10.1016/j.physbeh.2015.03.023
22. Allen JM, Berg Miller ME, **Pence BD**, Whitlock K, Nehra V, Gaskins HR, White BA, Fryer JD, Woods JA. Voluntary and forced exercise differentially alter the gut microbiome in C57Bl/6J mice. ***Journal of Applied Physiology*** 118(8): 1059-1066, 2015. 10.1152/japplphysiol.01077.2014
21. Woods JA, **Pence BD**. Physical activity, exercise, and the immune system: Three lines of research that have driven the field. ***Kinesiology Review*** 4: 118-125, 2015. Review. 10.1123/kr.2014-0086
20. Leckie RL, Oberlin LE, Voss MW, Prakash RS, Szabo-Reed A, Chaddock-Heyman L, Phillips SM, Gothe N, Mailey E, Vieira-Potter VJ, Martin SA, **Pence BD**, Lin M, Parasuraman R, Greenwood PM, Fryxell KJ, Woods J, McAuley E, Kramer AF, Erickson KI. BDNF mediates improvements in executive function following a 1-year exercise intervention. ***Frontiers in Human Neuroscience*** 8: 985, 2014. 10.3389/fnhum.2014.00985
19. Gibbons TE*, **Pence BD***, Petr G, Ossyra JM, Bhattacharya TK, Perez S, Martin SA, McCusker RH, Kelley KW, Rhodes JS, Johnson RW, Woods JA. Voluntary wheel running, but not a diet containing EGCG and β-alanine, improves learning and memory and hippocampal neurogenesis in aged mice. ***Behavioural Brain Research*** 272:131-140, 2014. 10.1016/j.bbr.2014.05.049
18. Markofski MM, Carrillo AE, Timmerman KL, Jennings K, Coen PM, **Pence BD**, Flynn MG. Exercise training modifies ghrelin and adiponectin concentrations and is related to inflammation in older adults. ***The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*** 69(6): 675-681, 2014. 10.1093/gerona/glt132
17. **Pence BD**, Woods JA. Exercise, obesity, and cutaneous wound healing: Evidence from rodent and human studies. ***Advances in Wound Care*** 3(1): 71-79, 2014. Review. 10.1089/wound.2012.0377
16. Cook MD, Martin SA, Williams C, Wallig MA, **Pence BD**, Woods JA. Forced treadmill exercise training exacerbates inflammation and causes mortality while voluntary wheel training is protective in a mouse model of colitis. ***Brain Behavior and Immunity*** 33: 46-56, 2013. 10.1016/j.bbi.2013.05.005
15. Thorum SC, Hester SN, Comstock SS, Monaco MH, **Pence BD**, Woods JA, Donovan SM. Dietary (1,3/1,6)-β-D-glucan decreases transforming growth factor β expression in the lung of the neonatal piglet. ***Nutrition Research*** 33(4): 322-331, 2013. 10.1016/j.nutres.2013.02.006
14. Martin SA, **Pence BD**, Greene R, Johnson S, Dantzer R, Kelley KW, Woods JA. Voluntary wheel running has no effect on LPS-induced inflammation or sickness behavior in aged mice. ***Brain Behavior and Immunity*** 29: 113-123, 2013. 10.1016/j.bbi.2012.12.014
13. Voss MW, Erickson KI, Prakash RS, Chaddock L, Kim JS, Alves H, Szabo A, White SM, Wojcicki TR, Mailey EL, Olson EA, Gothe N, Potter VV, Martin SA, **Pence BD**, Cook MD, Woods JA, McAuley E, Kramer AF. Neurobiological markers of exercise-related brain plasticity in older adults. ***Brain Behavior and Immunity*** 28: 90-99, 2013. 10.1016/j.bbi.2012.10.021

Peer Reviewed Publications cont.

12. **Pence BD**, DiPietro LA, Woods JA. Exercise speeds cutaneous wound healing rate in high-fat diet-induced obese mice. ***Medicine and Science in Sports and Exercise*** 44(10): 1846-1854, 2012. 10.1249/MSS.0b013e31825a5971
11. Hester SN, Thorum SC, Comstock SS, Monaco MH, **Pence BD**, Woods JA, Donovan SM. Intestinal and systemic immune development are unaffected by dietary (1,3/1,6)-β-D-glucan supplementation of neonatal piglets. ***Clinical and Vaccine Immunology*** 19(9): 1499-1508, 2012. 10.1128/CVI.00338-12
10. **Pence BD**, Lowder TW, Keylock KT, Vieira Potter VJ, Cook MD, McAuley E, Woods JA. Relationship between systemic inflammation and delayed-type hypersensitivity response to candida antigen in older adults. ***PLoS One*** 7(5): e36403, 2012. 10.1371/journal.pone.0036403
9. **Pence BD**, Hester SN, Donovan SM, Woods JA. Dietary whole glucan particles do not affect antibody or cell-mediated responses to influenza virus vaccination in mice. ***Immunological Investigations*** 41(3): 275-289, 2012. 10.3109/08820139.2011.628732
8. Anderson-Hanley C, Arciero PJ, Brickman AM, Nimon JP, Okuma N, Westen SC, Merz ME, **Pence BD**, Woods JA, Kramer AF, Zimmerman EA. Exergaming and older adult cognition: A cluster randomized controlled trial. ***American Journal of Preventive Medicine*** 42(2): 109-119, 2012. 10.1016/j.amepre.2011.10.016
7. **Pence BD**, Martin SA, Woods JA. Effects of exercise on immunosenescence in aged populations. ***American Journal of Lifestyle Medicine*** 5(3): 238-246, 2011. Review. 10.1177/1559827610392317
6. Erickson KI, Voss MW, Prakash RS, Basak C, Szabo A, Chaddock L, Kim JS, Heo S, Alves H, White SM, Wojcicki TR, Mailey E, Vieira VJ, Martin SA, **Pence BD**, Woods JA, McAuley E, Kramer AF. Exercise training increases size of the hippocampus and improves memory. ***Proceedings of the National Academy of Sciences USA*** 108(7): 3017-3022, 2011. 10.1073/pnas.1015950108
5. Coen PM, Flynn MG, Markofski MM, **Pence BD**, Hannemann RE. Adding exercise to rosuvastatin treatment: influence on C-reactive protein, monocyte toll-like receptor 4 expression and inflammatory monocyte (CD14+CD16+) population. ***Metabolism*** 59: 1775-1783, 2010. 10.1016/j.metabol.2010.05.002
4. Erickson KI, Prakash RS, Voss MW, Chaddock L, Heo S, McLaren M, **Pence BD**, Martin SA, Vieira VJ, Woods JA, Kramer AF. BDNF is associated with age-related decline in hippocampal volume. ***Journal of Neuroscience*** 30(15): 5368-5375, 2010. 10.1523/JNEUROSCI.6251-09.2010
3. Martin SA, **Pence BD**, Woods JA. Exercise and respiratory tract viral infection. ***Exercise and Sports Sciences Reviews*** 37(4): 157-164, 2009. Review. 10.1097/JES.0b013e3181b7b57b
2. Coen PM, Flynn MG, Markofski MM, **Pence BD**, Hannemann RE. Adding exercise training to rosuvastatin treatment: influence on serum lipids and biomarkers of muscle and liver damage. ***Metabolism*** 58(7): 1030-1038, 2009. 10.1016/j.metabol.2009.03.006
1. Timmerman KL, Flynn MG, Coen PM, Markofski MM, **Pence BD**. Exercise training-induced lowering of inflammatory (CD14+CD16+) monocytes: a role in the anti-inflammatory influence of exercise? ***Journal of Leukocyte Biology*** 84(5): 1271-1278, 2008. 10.1189/jlb.0408244

Preprints and Manuscripts in Progress *†senior/corresponding author*

†1. Mosalmanzadeh N, Maurmann RM, Davis K, Schmitt BL, Makowski L, **Pence BD**. Modulatory effects of Mdivi-1 on OxLDL-induced metabolic alterations, inflammatory responses, and foam cell formation in human monocytes. *bioRxiv*. 10.1101/2024.12.12.628145 (submitted)

Book Chapters *†senior author*

†6. **Pence BD**. Skeletal muscle and the immune system. ***The Skeletal Muscle: Plasticity, Degeneration, and Epigenetics***. L.L. Ji (Ed.). Berlin: Springer. 2025.

†5. **Pence BD**. Exercise immunology, nutrition and immunometabolism. ***Exercise Immunology*, 2nd ed.** J. Turner, G. Spielmann, J. Campbell (Eds.). Oxford: Routledge. 2024.

Book Chapters cont.

†4. **Pence BD**, Woods JA, Sun Y. Exercise, aging, and immunity. ***Lifestyle Medicine*, 4th ed**. J.M. Rippe (Ed.). New York: CRC Press. 2024.

†3. **Pence BD**, Cory TJ. Targeting mononuclear phagocytes to treat COVID-19. ***Biotechnology to Combat COVID-19***. M. Agrawal & S. Biswas (Eds.). London: IntechOpen. 2021.

2. Woods JA, Sun Y, **Pence BD**. Exercise, aging, and immunity. ***Lifestyle Medicine*, 3rd ed**. J.M. Rippe (Ed.). New York: CRC Press. 2019.

1. Woods JA, **Pence BD**, Martin SA, Cook MD. Exercise, aging, and immunity. ***Lifestyle Medicine*, 2nd ed**. J.M. Rippe (Ed.). New York: CRC Press. 2013.

Published Abstracts

47. Eric R, Ramanathan C, **Pence B**, Adelman J, Zhang Y. Mycoplasma gallisepticum suppresses cytokine levels in chicken bone marrow-derived macrophages. ***Integrative and Comparative Biology*** 65: S147, 2025. 10.1093/icb/icaf004

46. Maurmann RM, **Pence BD**. Mitochondrial dysfunction in dysregulated monocyte immune response. ***Innovation in Aging*** 8(S1): 1146, 2024. 10.1093/geroni/igae098

45. Schmitt BL, Pantoja P, **Pence BD**. Arabinose mitigate metabolic stress in inflammaging. ***Innovation in Aging*** 8(S1): 1133, 2024. 10.1093/geroni/igae098

44. Maurmann RM, Davis KL, Mosalmanzadeh N, **Pence BD**. Mechanism underlying lactate-induced effect on monocytes in an exercise context. ***Medicine and Science in Sports and Exercise*** 55(9S): 479, 2023. 10.1249/01.mss.0000984276.23334.9b

43. Davis KL, **Pence BD**. Lactate suppresses immunometabolic and inflammatory responses in monocytes. ***Medicine and Science in Sports and Exercise*** 54(9S): 542, 2022. 10.1249/01.mss.0000881872.11609.06

42. Cory T, Emmons R, Yarbro J, **Pence B**. Metformin suppresses monocyte inflammation and metabolic reprogramming by SARS-CoV-2 spike protein. ***Innovation in Aging*** 5(S1): 332, 2021. 10.1093/geroni/igab046.1284

41. **Pence BD**. Recombinant SARS-CoV-2 spike protein mediates glycolytic and inflammatory activation in human monocytes. ***Innovation in Aging*** 4(S1): 955, 2021. 10.1093/geroni/igaa057.3493

40. Yarbro JR, **Pence BD**. Metabolic flexibility in classical monocytes is not affected by age. ***Innovation in Aging*** 3(S1): S105, 2019. 10.1093/geroni/igz038.392

39. **Pence BD**, Yarbro JR. Growth differentiation factor 15 is correlated to markers of immunosenescence in monocytes. ***Innovation in Aging*** 3(S1): S103, 2019. 10.1093/geroni/igz038.387

38. **Pence BD**, Yarbro JR. Aging alters respiratory but not glycolytic capacity in human monocytes. ***Innovation in Aging*** 2(S1): 91-92, 2018. 10.1093/geroni/igy023.347

37. **Pence BD,** Ryerson MR, Bravo-Cruz AG, Woods JA, Shisler JL. Voluntary wheel running and response to vaccinia virus infection and inoculation in mice. ***Medicine and Science in Sports and Exercise*** 49(5S): 196-197, 2017. 10.1249/01.mss.0000517376.41290.eb

36. **Pence BD,** Ryerson MR, Bravo-Cruz AG, Woods JA, Shisler JL. Voluntary wheel running in mice is safe during vaccinia virus infection and does not impair vaccine responses. ***FASEB Journal*** 31(1S): lb740, 2017. 10.1096/fasebj.31.1_supplement.lb740

35. Woods JA, Allen JM, Rytych J, Sun Y, Pence BD, Bhattacharya TK, Park P, Liu TW, Swanson K, Fahey GC, Rhodes JS, Kelley KW, Johnson RW. Cohort differences in learning and memory in response to fiber feeding in genetically identical C57Bl/6J mice: A relationship to the gut microbiota? ***Brain Behavior and Immunity*** 57S: e40, 2016. 10.1016/j.bbi.2016.07.133

34. Sun Y, **Pence BD**, Garg K, Dvoretskiy SV, Niemiro GM, Allen JM, De Lisio M, Boppart MD, Woods JA. Acute eccentric exercise does not improve primary antibody responses to ovalbumin vaccination in mice. ***Medicine and Science in Sports and Exercise*** 48(5S): 85, 2016. 10.1249/01.mss.0000485262.62741.6a

Published Abstracts cont.

33. **Pence BD,** Bhattacharya TK, Rytych JL, Park P, Allen JM, Sun Y, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. Effects of dietary fiber and exercise on cognition, muscle function, and SCFA in young mice. ***Medicine and Science in Sports and Exercise*** 48(5S): 522, 2016. 10.1249/01.mss.0000486569.15440.e0

32. Mailing L, Allen J, Liu TW, Bhattacharya T, Park P, **Pence B**, Johnson R, Swanson K, Rhodes J, Woods J. Pectin feeding for 16 weeks improves learning and memory in young C57Bl/6J mice: A relationship to the gut microbiota? ***FASEB Journal*** 30(1S): 683.10, 2016. 10.1096/fasebj.30.1_supplement.683.10

31. **Pence BD,** Bhattacharya TK, Rytych JL, Park P, Allen JM, Sun Y, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. Dietary fiber and exercise: Effects on muscle function, cognition, and short-chain fatty acids in mice. ***FASEB Journal*** 30(1S): 1287.3, 2016. 10.1096/fasebj.30.1_supplement.1287.5

30. **Pence BD,** Bhattacharya TK, Rytych JL, Park P, Allen JM, Sun Y, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. EGCG decreases mortality in a dose-dependent fashion but does not improve cognition in mice. ***FASEB Journal*** 30(1S): 407.1, 2016. 10.1096/fasebj.30.1_supplement.407.1

29. Klaren RE, Steelman AJ, **Pence B**, Woods JA, Motl RW. Effects of voluntary exercise on the pathogenesis of experimental autoimmune encephalomyelitis. ***International Journal of MS Care*** 17: S73, 2015. 10.7224/1537-2073-17.s1.1

28. **Pence BD**, Woods JA. Metabolic activation: A potential mechanism for exercise-induced phenotypic switch in macrophages. ***Medicine and Science in Sports and Exercise*** 47(5S): 716, 2015. 10.1249/01.mss.0000478681.15510.ae

27. Sun Y, **Pence B**, Pishevar N, Boppart M, Woods JA. Acute eccentric or concentric exercise does not improve antibody responses to ovalbumin vaccination in mice**. *Medicine and Science in Sports and Exercise*** 47(5S): 715, 2015. 10.1249/01.mss.0000478677.48683.41

26. Allen JM, Panasevich MR, **Pence BD**, Sun Y, Dilger RR, Woods JA. Acute exercise increases short chain fatty acids in the mouse cecum. ***Medicine and Science in Sports and Exercise*** 47(5S): 488, 2015. 10.1249/01.mss.0000477775.91526.d6

25. Woods JA, **Pence BD**, Bhattacharya TK, Park P, Sun Y, Rytych JL, Allen JM, McCusker RH, Kelley KW, Johnson RW, Rhodes JS. Diet containing EGCG and beta-alanine decreases mortality, but has no effect on cognitive function and variably affects muscle function in aged mice. ***Medicine and Science in Sports and Exercise*** 47(5S): 336, 2015. 10.1249/01.mss.0000466053.97076.3e

24. **Pence BD,** Bhattacharya TK, Park P, Sun Y, Rytych JL, Allen JM, McCusker RH, Kelley KW, Johnson RW, Rhodes JS, Woods JA. A diet containing EGCG and beta-alanine decreases mortality and improves balance in aged mice, but does not affect cognitive function. ***FASEB Journal*** 29(1S): 392.4, 2015. 10.1096/fasebj.29.1_supplement.392.4

23. Allen JM, Wang J, **Pence BD**, Cook MD, Whitlock K, Molitor M, Woods JA. Short bouts of voluntary wheel running reduce the inflammatory insult of ulcerative colitis in C57Bl/6J mice. ***Brain Behavior and Immunity*** 40S: e40, 2014. 10.1016/j.bbi.2014.06.158

22. **Pence BD**, Gibbons TE, Bhattacharya TK, Mach HC, Ossyra JM, McCusker RH, Kelley KW, Rhodes JS, Johnson RW, Woods JA. Impact of exercise and/or beta-alanine and EGCG on muscle function and inflammation in aged mice. ***Medicine and Science in Sports and Exercise*** 46(5S): 77, 2014. 10.1249/01.mss.0000493399.19727.94

21. Ossyra J, Mach H, Bhattacharya T, Gibbons T, **Pence B**, Woods J, Johnson R, Rhodes J. The influence of nutritional supplementation with epigallocatechin gallate and β-alanine in combination with physical exercise on adult hippocampal neurogenesis and contextual fear conditioning in young adult Balb/cJ mice. ***FASEB Journal*** 28(1S): 124.5, 2014. 10.1096/fasebj.28.1_supplement.629.4

Published Abstracts cont.

20. **Pence BD**, Gibbons TE, Bhattacharya TK, Mach HC, Ossyra JM, McCusker RH, Kelley KW, Rhodes JS, Johnson RW, Woods JA. Impact of exercise and/or beta-alanine and epigallocatechin gallate on muscle function and oxidative stress in aged mice. ***FASEB Journal*** 28(1S): 1027.2, 2014. 10.1096/fasebj.28.1_supplement.1027.2
19. Gibbons TE, **Pence BD**, Bhattacharya TK, Mach HC, Ossyra JM, McCusker RH, Kelley KW, Rhodes JS, Johnson RW, Woods JA. Diet, exercise, neurogenesis, and cognition. ***FASEB Journal*** 28(1S): 1025.4, 2014. 10.1096/fasebj.28.1_supplement.1025.4
18. Woods JA, Cook MD, Martin SA, Williams C, Whitlock K, Wallig M, **Pence BD**. Forced treadmill exercise exacerbates inflammation and causes mortality while voluntary wheel training is protective in a mouse model of colitis. ***Brain Behavior and Immunity*** 32S: e19, 2013. 10.1016/j.bbi.2013.07.076
17. **Pence BD**, Woods JA. Sex differences in healing rate of cutaneous wounds in mice: No impact of exercise. ***Medicine and Science in Sports and Exercise*** 45(5S): 231, 2013. 10.1249/01.mss.0000433662.68486.39
16. Woods JA, Martin S, **Pence B**, Greene R, Johnson S, Dantzer R, Kelley K. Effect of wheel running on sickness behavior and inflammation in aged mice. ***Medicine and Science in Sports and Exercise*** 44(5): S242, 2012. 10.1249/01.mss.0000417528.45625.44
15. **Pence BD**, Martin SA, Woods JA. Effects of exercise on wound healing and wound tissue inflammation in obese mice. ***Brain Behavior and Immunity*** 25(S2): S211, 2011. 10.1016/j.bbi.2011.07.115
14. **Pence BD**, Martin SA, Woods JA. Exercise speeds wound healing rate in diet-induced obese mice. ***Medicine and Science in Sports and Exercise*** 43(5): S34, 2011. 10.1249/01.MSS.0000402815.19397.38
13. Martin SA, **Pence BD**, Cady M, Antao NN, Haas NL, Woods JA. Diet-induced obesity does not exacerbate the peak peripheral and central inflammatory response to LPS in C57/Bl6J mice. ***Brain Behavior and Immunity*** 24(S1): S196, 2010. 10.1016/j.bbi.2010.07.197
12. Cady M, Woods JA, Baynard T, Wilund KR, Valentine RJ, Martin SA, Cortez F, **Pence BD**. Reduced adipose tissue hypoxia as a potential mechanism by which exercise and/or low fat diet reduces inflammation in obese mice. ***Brain Behavior and Immunity*** 24(S1): S198, 2010. 10.1016/j.bbi.2010.07.199
11. **Pence BD**, Hester SN, Martin SA, Donovan SM, Woods JA. No effect of dietary yeast beta-glucan on antibody or cell-mediated response to influenza virus vaccine. ***Brain Behavior and Immunity*** 24(S1): S92, 2010. 10.1016/j.bbi.2010.07.093
10. Jae SY, Heffernan K, Woods J, Vieira V, Martin S, **Pence B**, Fernhall B. Acute systemic inflammation increases central blood pressure and pulse wave velocity in healthy subjects. ***Circulation*** 120: S1006, 2009.
9. Timmerman KL, Flynn MG, Coen PM, Markofski MM, **Pence BD**. Exercise training does not influence CD8+ phenotype or mitogen-activated TNF-α production in previously-sedentary inactive elderly. ***Medicine and Science in Sports and Exercise*** 41(5): S400, 2009. 10.1249/01.MSS.0000355389.27178.fb
8. Martin SA, Dumich SA, O'Connor JC, **Pence BD**, Kelley KW, Dantzer R, Woods JA. Voluntary wheel running does not attenuate LPS induced sickness behavior in CD-1 mice. ***Medicine and Science in Sports and Exercise*** 41(5): S401, 2009. 0.1249/01.MSS.0000355396.65296.56
7. **Pence BD**, Martin SA, Vieira VJ, Keylock KT, Woods JA. Aerobic exercise does not improve delayed-type hypersensitivity to tetanus or candida in older adults. ***Medicine and Science in Sports and Exercise*** 41(5): S401, 2009. 10.1249/01.MSS.0000355395.57672.99
6. Markofski MM, Flynn MG, Timmerman KL, Coen PM, **Pence B**. Exercise training increases adiponectin in elderly males and females. ***Japanese Journal of Physical Fitness and Sports Medicine*** 58(1): 205, 2009. 10.7600/jspfsm.58.169

Published Abstracts cont.

5. Martin S, **Pence B**, Vieira V, McAuley E, Woods J. Exercise training-induced improvements in antibody responses to influenza vaccination in older adults are related to changes in cardiovascular fitness. ***The Physiologist*** 51(6): 348, 2008.
4. Coen P, Flynn M, Markofski M, **Pence B**, Carrillo A, Bell J, Hannemann R. The effect of combined statin therapy and exercise training on mediators of inflammation. ***The Physiologist*** 51(6): 346, 2008.
3. Carrillo AE, Flynn MG, Timmerman KL, Coen PM, Markofski MM, **Pence BD**. Changes in plasma ghrelin is associated with human monocyte phenotype following exercise training. ***Medicine and Science in Sports and Exercise*** 40(5): S433, 2008. 10.1249/01.mss.0000322844.57519.95
2. **Pence BD**, Vieira VJ, Baynard T, Keylock KT, Lowder TW, Woods JA. Effect of cardiovascular exercise on CRP levels in previously sedentary older men and women. ***FASEB Journal*** 22: 1175.11, 2008. 10.1096/fasebj.22.1_supplement.1175.11
1. Timmerman KL, Flynn MG, Coen PM, Markofski MM, **Pence BD**, Woodall NJ. The influence of physical activity level on monocyte subpopulations. ***Medicine and Science in Sports and Exercise*** 38(11): S38, 2006.

Conference Abstract Co-Author *co-authored contributions not published in academic journals*

10. Cory T, **Pence B**. Cellular senescence alters fibrogenesis in SARS-CoV-2 infected macrophage/ fibroblast co-cultures. Society for Neuroimmune Pharmacology COVID-19 Virtual Workshop, 2021.
9. Yarbro JR, **Pence BD**. Metabolic flexibility in classical monocytes is not affected by age. Oklahoma Geroscience Symposium, 2019.
8. Bhattacharya TK, Park P, Rendeiro C, **Pence BD**, Cobert AJ, Swanson KS, Fahey GC, Johnson RW, Kelley KW, McCusker RH, Woods JA, Rhodes JS. Mice consuming a diet containing pectin fiber but not EGCG display cognitive benefits on the Morris water maze. Society for Neuroscience, 2015. Abstract 535.12.
7. Allen JM, Panasevich MR, **Pence BD**, Sun Y, Dilger RN, Woods JA. Acute exercise increases short chain fatty acid concentrations in the mouse cecum. Illinois Brain Behavior and Immunity Meeting, 2015.
6. Sun Y, **Pence B**, Pishevar N, Boppart M, Woods JA. Acute eccentric or concentric exercise does not improve antibody responses to ovalbumin vaccination in mice. Illinois Brain Behavior and Immunity Meeting, 2015.
5. Oberlin LE, Voss MW, Prakash RS, Szabo S, Wojcicki T, Martin SA, **Pence BD**, Phillips SM, Mailey E, Woods JA, McAuley E, Kramer AF, Erickson KI. Interleukin-6 mediates the association between aerobic fitness and executive function in an older adult population. Cognitive Aging Conference, 2014.
4. Rhodes JS, Ossyra JM, Mach HC, Bhattacharya TK, Gibbons T, **Pence BD**, Woods JA, Johnson RW. The influence of nutritional supplementation with epigallocatechin gallate and β-alanine in combination with physical exercise on adult hippocampal neurogenesis and contextual fear conditioning in young adult BALB/cJ mice. Society for Neuroscience, 2013. Abstract 192.04.
3. Alvarez TA, Turney IC, Lecki R, Voss MW, Prakash RS, Chaddock L, Szabo A, Mailey E, White SM, Wojcicki TR, Vieira VJ, Martin SA, **Pence BD**, Woods JA, McAuley E, Kramer AF, Erickson KI. Aerobic fitness moderates an age-related decline in serum BDNF. Cognitive Aging Conference, 2012.
2. Woods J, Martin S, **Pence B**, Cook M, Greene R. Exercise as a means of reducing acute and chronic inflammation: Impact on health. International Society for Exercise and Immunology, 2011.

Conference Abstract Co-Author cont.

1. Voss MW, Erickson KI, Prakash RS, Basak C, Chaddock L, Kim JS, Alves H, Heo S, Szabo AN, White SM, Wojcicki TR, Mailey EL, Olson EA, Gothe N, Potter VV, Martin SA, **Pence BD**, Cook MD, Woods JA, McAuley EM, Kramer AF. Neurobiological markers on plasticity of brain networks in a randomized intervention trial of exercise training in older adults. 2nd Biennial International Conference on Resting-State Functional Brain Connectivity, 2010.

Non-Peer Reviewed Contributions

1. **Pence BD**, Woods JA. Active voice: Exercise speeds healing in obese mice. *ACSM Sports Medicine Bulletin*. 18 Sept 2012. Invited commentary on Pence *et al. Med Sci Sports Exerc* 44: 1846-54, 2012.

Presentations

Invited Presentations

5. Targeting metabolism to modulate immune function in aging and disease. Grand Rounds, Endocrinology, Department of Medicine, University of Tennessee Health Science Center. Mar 20, 2025.
4. Metabolic regulation of innate immunity by exercise-derived metabolites. 15th Symposium, International Society for Exercise and Immunology. Oct 27, 2022.
3. Immunometabolic regulation and innate immunity in aging, COVID, and exercise. Mid-Atlantic Regional Chapter of the American College of Sports Medicine Annual Meeting. Harrisburg, PA. Nov 5, 2021.
2. COVID-19: Metabolism and the Innate Immune System. Grand Rounds, Endocrinology, Department of Medicine, University of Tennessee Health Science Center. Sept 23, 2021.
1. SARS-CoV-2 spike protein induces immunometabolic activation in monocytes which can be blocked by metformin. COVID-19 Study Group, University of Tennessee Health Science Center. Apr 26, 2021.

Contributed Presentations

35. Metformin suppresses monocyte inflammation and metabolic reprogramming by SARS-CoV-2 spike protein. Gerontological Society of American Annual Meeting, 2021. (Virtual Symposium)
34. Metformin suppresses SARS-CoV-2 induced inflammation in monocytes independent of AMPK activation. American Aging Association Annual Meeting, 2021. Madison, WI. (Poster)
33. Recombinant SARS-CoV-2 spike protein mediates glycolytic and inflammatory activation in human monocytes. Gerontological Society of America Annual Meeting, 2020. (Virtual Poster)
32. Immunometabolic activation of monocytes by SARS-CoV-2 spike protein suggests potential therapeutic role of geroprotector drugs. American Aging Association Meeting, 2020. (Virtual Poster)
31. Growth differentiation factor 15 is correlated to markers of immunosenescence in monocytes. Gerontological Society of America Annual Meeting, 2019. Austin, TX. (Poster)
30. GDF-15 is correlated with monocyte immunosenescence indicators. American Aging Association Annual Meeting, 2019. Burlingame, CA. (Poster)
29. Growth/Differentiation Factor-15 is correlated to markers of immunosenescence in monocytes. Oklahoma Geroscience Symposium, 2019. Oklahoma City, OK. (Poster)
28. Aging alters respiratory but not glycolytic capacity in human monocytes. Gerontological Society of America Annual Meeting, 2018. Boston, MA. (Poster)
27. Aging alters respiratory but not glycolytic capacity in human monocytes. Nathan Shock Center Symposium, University of Alabama-Birmingham, 2018. Birmingham, AL. (Poster)
26. Aging impairs monocyte mitochondrial respiration and increases proportion of non-classical phenotype. Keystone Symposium on Aging, Inflammation and Immunity, 2018. Austin, TX. (Poster)

Contributed Presentations cont.

25. Voluntary wheel running and response to vaccinia virus infection and inoculation in mice. ACSM Annual Meeting, 2017. Denver, CO. (Slide)
24. Voluntary wheel running in mice is safe during vaccinia virus infection and does not impair vaccine responses. Experimental Biology 2017. Chicago, IL. (Poster)
23. Effects of dietary fiber and exercise on cognition, muscle function, and SCFA in young mice. ACSM Annual Meeting, 2016. Boston, MA. (Poster)
22. EGCG decreases mortality in a dose-dependent fashion but does not improve cognition in mice. Experimental Biology 2016. *Emerging Leaders in Nutrition Science Poster Competition, ASN*. San Diego, CA. (Poster)
21. EGCG decreases mortality in a dose-dependent fashion but does not improve cognition in mice. Experimental Biology 2016. San Diego, CA. (Slide)
20. Dietary fiber and exercise: Effects on muscle function, cognition, and short-chain fatty acids in mice. Experimental Biology 2016. San Diego, CA. (Poster)
19. EGCG decreases mortality in a dose-dependent fashion but does not improve cognition in mice. Cognition, Lifespan Engagement, Aging, and Resilience (CLEAR) Initiative, Beckman Institute, University of Illinois at Urbana-Champaign. Urbana, IL. (Poster)
18. Diet containing EGCG and beta-alanine decreases mortality, but has no effect on cognitive function and variably affects muscle function in aged mice. ACSM Annual Meeting, 2015. San Diego, CA. (Poster)
17. Metabolic activation: A potential mechanism for exercise-induced phenotypic switch in macrophages. ACSM Annual Meeting, 2015. San Diego, CA. (Slide)
16. A diet containing EGCG and beta-alanine decreases mortality and improves balance in aged mice, but does not affect cognitive function. Experimental Biology 2015. Boston, MA. (Slide)
15. A diet containing EGCG and beta-alanine decreases mortality and improves balance in aged mice, but does not affect cognitive function. Experimental Biology 2015. *Emerging Leaders in Nutrition Science Poster Competition, ASN*. Boston, MA. (Poster)
14. A diet containing EGCG and beta-alanine decreases mortality and improves balance in aged mice, but does not affect cognitive function. Experimental Biology 2015. *The Postdoctoral Research Award Competition, ASN*. Boston, MA. (Slide)
13. Voluntary wheel running and a diet containing EGCG and Beta-alanine: Effects on cognition and muscle function. Illinois Brain Behavior and Immunity Meeting, 2015. Chicago, IL. (Slide)
12. Impact of exercise and/or beta-alanine and EGCG on muscle function and inflammation in aged mice. ACSM Annual Meeting, 2014. Orlando, FL. (Poster)
11. Impact of exercise and/or beta-alanine and epigallocatechin gallate on muscle function and oxidative stress in aged mice. Experimental Biology 2014. San Diego, CA. (Poster)
10. Sex differences in healing rate of cutaneous wounds in mice: No impact of exercise. ACSM Annual Meeting, 2013. Indianapolis, IN. (Poster)
9. Treadmill exercise ameliorates delayed healing in obese versus lean mice. MWACSM Annual Meeting, 2011. Indianapolis, IN. (Slide)
8. Exercise influence on wound healing and tissue inflammation in obese high-fat diet-fed mice. 10th ISEI Conference, 2011. Oxford, UK. (Slide)
7. Effects of exercise on wound healing and wound tissue inflammation in obese mice. 18th PNIRS Conference, 2011. Chicago, IL. (Slide)
6. Exercise speeds wound healing rate in diet-induced obese mice. ACSM Annual Meeting, 2011. Denver, CO. (Thematic Poster)
5. No effect of dietary yeast beta-glucan on antibody or cell-mediated response to influenza virus vaccine. 17th PNIRS Conference, 2010. Dublin, Ireland. (Poster)

Contributed Presentations cont.

4. Associations between gene expression of Toll-like receptor 4 and markers of inflammation in adipose tissue: the role of exercise. 9th ISEI Conference, 2009. Tübingen, Germany. (Poster)
3. Aerobic exercise does not improve delayed-type hypersensitivity to tetanus or candida in older adults. ACSM Annual Meeting, 2009. Seattle, WA. (Poster)
2. Exercise training-induced improvements in antibody responses to influenza vaccination in older adults are related to changes in cardiovascular fitness. APS Integrative Biology of Exercise V, 2008. Hilton Head, SC. (Poster)
1. Effect of cardiovascular exercise on CRP levels in previously sedentary older men and women. Experimental Biology, 2008. San Diego, CA. (Poster)

Institutional Seminars

7. Metabolites and metabolism in the regulation of innate immune function. Department of Biology Seminar. Sep 29, 2022.
6. Monocyte immunometabolic regulation by SARS-CoV-2 antigens. College of Health Sciences Seminar. Mar 18, 2022.
5. SARS-CoV-2 spike protein induces immunometabolic activation in monocytes which can be blocked by metformin. Institute for Study of Host-Pathogen Systems, University of Tennessee Health Science Center. Apr 20, 2021.
4. Determination of inflammatory and fibrotic markers in SARS-CoV-2 infected macrophages and fibroblasts. FedEx Institute of Technology *What's Next?* Research Seminars, University of Memphis. Feb 19, 2021.
3. Dysfunction in macrophages and monocytes: Links to metabolism, aging, and cellular senescence. Biomedical Engineering Seminar, University of Memphis. Feb 21, 2020.
2. Monocyte and macrophage metabolism in aging and heart disease. School of Health Studies Research Seminar, University of Memphis. Nov 22, 2019.
1. Aging and monocyte immune function. School of Health Studies Lunch 'n' Learn, University of Memphis. Apr 13, 2018.

Awards and Recognition

External Awards

2023 **Fellow**, American College of Sports Medicine

2019 **Selectee,** Summer Training Course in Experimental Aging Research, National Institute of Aging

2018 **Travel Award**, Keystone Symposium on Aging, Inflammation and Immunity, Agilent Technologies

2016 **Finalist**, Emerging Leaders in Nutrition Science, American Society for Nutrition

2015 **Postdoctoral Research Award**, American Society for Nutrition

2015 **Finalist**, Emerging Leaders in Nutrition Science, American Society for Nutrition

2011 **Outstanding Graduate Student Award**, Midwest American College of Sports Medicine

2011 **Early Career Research Award**, International Society for Exercise and Immunology

2011 **Trainee Scholar Award**, Psychoneuroimmunology Research Society

2003 **National Merit Finalist**, National Merit Scholarship Corporation

Internal Awards

2025 **High Impact Scholar**, University of Memphis

2024 **PI Millionaire Award**, University of Memphis

2023 **Tigers Ascending to Excellence Award**, University of Memphis

Internal Awards cont.

2020 **MVP Award**, College of Health Sciences, University of Memphis

2009 **Graduate College and Departmental Travel Awards**, University of Illinois Urbana-Champaign

2008 **Departmental Travel Award**, University of Illinois Urbana-Champaign

Press

2020 "Inside the Immune Response", featured article in *University of Memphis Magazine* (Fall 2020)

Teaching Experience

University of Memphis

ESMS 4010/6010, Supplements/Food/Drugs Health *[Online]*

ESMS 7020/8020, Publications and Proposals in Health & Biomed

HMSE 7010, Research Methods in Health Studies

HLSC 4400, Statistics for Health Sciences *[Online]*

NUTR 7000/8000, Sports Nutrition *[Online]*

NUTR 7100, Intro to Wet Lab Methods in Health Studies

University of Illinois at Urbana-Champaign

KIN 494, Exercise and Disease

KIN 150, Bioscience of Human Movement

KIN 352, Bioenergetics of Movement

Mentorship

Years	***Name and Program***	***Role***	***Present Position***
Postdoctoral			
2019-2021	**Russell Emmons, PhD** Postdoctoral Fellow University of Memphis	Supervisor	Scientist/Team Lead Hesperos, Inc.
Graduate Chair			
2023-2026	**Brenda Schmitt** Ph.D., Applied Physiology and Nutrition University of Memphis	Dissertation Committee Chair	Current
2022-2026	**Rafael Maurmann** Ph.D., Applied Physiology and Nutrition University of Memphis	Dissertation Committee Chair	Current
2022-2024	**Negin Mosalmanzadeh** Ph.D., Applied Physiology and Nutrition University of Memphis	Dissertation Committee Chair	Current
2020-2022	**Kierstin Davis** M.S., Exercise Sport and Movement Science University of Memphis	Thesis Committee Chair	PA Student Marshall University

Graduate Chair cont.

2017-2020	**Johnathan Yarbro** M.S., Nutrition Science University of Memphis	Thesis Committee Chair	DO/PhD Student New York Institute of Technology

Graduate Committee

2023-Present	**Ivy Antwi** Ph.D., Pharmaceutical Sciences University of Tennessee Health Science Center	Dissertation Committee Member	Current
2022-2023	**Chinanu Gabor** M.S., Nutrition Science University of Memphis	Thesis Committee Member	Current
2022-2023	**Zereque Powell** M.S., Exercise Sport and Movement Science University of Memphis	Thesis Committee Member	Research Technician University of Tennessee Health Science Center
2020-2022	**Sarah Lennon** M.S., Nutrition Science University of Memphis	Thesis Committee Member	PhD Student Auburn University
2018-2020	**Martina Faietti** M.S., Nutrition Science University of Memphis	Thesis Committee Member	
2016-2018	**Sunita Sharma** M.S., Nutrition Science University of Memphis	Thesis Committee Member	Research Scientist University of Texas - Arlington

Clinical Nutrition Intern

2019-2020	**Christopher Branner** M.S., Clinical Nutrition University of Memphis	Internship Supervisor	
2016-2017	**Lindsey Hedrick** M.S., Clinical Nutrition University of Memphis	Internship Supervisor	Dietician Mercy Hospital Rogers, AR

Service

University of Memphis – University

2025-Curr **Member**, Research Security Council

2024 **Reviewer**, Alumni Association Awards for Distinguished Research in STEM

2024-Curr **Member**, Research Development Action Committee

2023-2026 **Member**, Faculty Appeals Committee

2022-Curr **Member**, University Undergraduate Council

2020 **Member**, Animal Care Facility Planning Committee

2020-2021 **Member**, Committee on STEM Research Space Renovations

2018-Curr **Member**, University of Memphis Research Council
— **Co-Chair**, Institutional Review Board Policies Task Force
— **Member**, Research Strategic Plan Subcommittee
— **Member**, Scholarly Communications Task Force

2018-2023 **Judge**, University of Memphis Student Research Forum

2017-Curr **Scientific Member**, Institutional Animal Care and Use Committee

University of Memphis – College of Health Sciences

2025 **Member**, Search Committee for Research Assistant Professor of Nutrition

2024-Curr **Member**, Search Committee for Assistant Professor of Physical Therapy

2023-2025 **Chair**, Search Committee for Assistant Professor of Environmental Nutrition

2023 **Member**, College of Health Sciences Strategic Planning Committee

2021-Curr **Member**, College of Health Sciences Tenure and Promotion Committee

2019 **Member**, Search Committee for Research Assistant Professor of Nutrition

2019 **Member**, Search Committee for Clinical Assistant/Associate Professor of Nutrition

2019 **Reviewer**, School of Health Studies Faculty Research Grants

2018 **Chair**, Search Committee for Assistant/Associate Professor of Nutrition

2017-2019 **Member**, Planning Committee for PhD Program in the School of Health Studies

2017,2018 **Member**, Search Committees for Research Assistant Professors in Nutrition

2017 **Reviewer**, School of Health Studies Faculty Research Grants

University of Tennessee Health Science Center

2023-Curr **Member**, Institutional Biosafety Committee

University of Illinois at Urbana-Champaign

2015-2016 **Judge**, Nutrition Symposium Poster Presentations

2011-2012 **Member**, Search Committee for Associate/Full Professor in Exercise Physiology

2007-2008 **Representative**, Kinesiology Graduate Student Association

Gerontological Society of America

2024 **Chair**, Editor Search Workgroup for *Innovation in Aging*

2023-2024 **Member**, GSA Program, Publications, and Products Committee

2022 **Member**, 2022 Biological Sciences Awards Review Panel

2022 **Member**, 2022 Biological Sciences Annual Scientific Meeting Working Group

2021-2022 **Member**, Editor Search Workgroup for *Journals of Gerontology Series A*

2017-2025 **Abstract Reviewer**, GSA Annual Meeting

American College of Sports Medicine

2024-Curr **Member**, ACSM Research Awards Committee

2020-2023 **Member**, ACSM Research Review Committee

2020 ***Ad Hoc* Reviewer**, ACSM Research Review Committee

Conference Organizing

2021-2022 **Organizing Committee**, International Society for Exercise Immunology 2022 Meeting

2021 **Co-Chair,** Metabolism, Immunity, and Inflammation of the Mid-South 2021 Virtual Meeting

Other External Service

2024 **Tenure & Promotion External Reviewer**, University of South Carolina School of Medicine

2022 **Session Chair**, International Society for Exercise Immunology 2022 Meeting

2021-Curr **Co-Director**, Metabolism, Immunity, and Inflammation of the Mid-South Interest Group

2020 **Book Proposal Reviewer**, CRC Press

2017 **Judge**, Emerging Leaders in Nutrition Science Competition, American Society for Nutrition

Other External Service cont.

2017 **Session Chair**, National Conference on Undergraduate Research (four sessions)

2016-2018 **Abstract Reviewer**, American Society for Nutrition Annual Meeting

2016 **Abstract Reviewer**, National Conference on Undergraduate Research

2009-2010 **Session Chair**, 2nd and 3rd Annual Illinois Brain Behavior & Immunity Meetings

Grant Review

2025 **Reviewer**, TRC4 Review Panel, American Institute of Biological Sciences

2025 **Reviewer**, Mechanisms of Autoimmunity Special Emphasis Panel, NIH

2024 **Reviewer**, Worldwide Cancer Research (UK)

2024 **Reviewer**, Biotechnology and Biosciences Research Council, UK Research and Innovation

2023 **Reviewer**, Fellowships: Oncological Sciences (F09C) Study Section, NIH

2023 **Reviewer**, Innate Immunity and Inflammation (III) Study Section, NIH

2022 **Reviewer**, Translational Research Institute for Space Health, BRASH 2201 Panel

2022-2023 **Reviewer**, TPA Basic Sciences Review Panel, American Heart Association

2022 **Reviewer**, Excellence in Research Application, National Science Foundation

2021 **Reviewer**, Austrian Science Fund (FWF)

2021 **Reviewer**, Investigator-Led Projects Grant, Health Research Board (Ireland)

2020 **Early Career Reviewer**, Innate Immunity and Inflammation (III) Study Section, NIH

2019-2021 **Reviewer**, Discovery Grant Program, NSERC (Canada)

2019 **Reviewer**, CAREER Application, National Science Foundation

2018 **Reviewer**, E.W.R Steacie Memorial Fellowship Application, NSERC (Canada)

2017-2023 **Reviewer**, Fellowship Immunology Review Panel, American Heart Association

Editorial Board

2023-Pres **Editorial Board**, *Journals of Gerontology A: Biological Sciences*

2022-Pres **Associate Editor**, *Aging Pathobiology and Therapeutics*

2020-Pres **Associate Editor**, *Frontiers in Aging*

2020-Pres **Associate Editor**, *Frontiers in Immunology*

2020-Pres **Associate Editor**, *Frontiers in Nutrition*

2018-2024 **Academic Editor**, *PLoS One*

2017-2020 **Review Editor**, *Frontiers in Immunology*

2017-2020 **Review Editor**, *Frontiers in Nutrition*

Other Editing

2022-2023 **Research Topic Editor**, “Molecular Perspectives on the Role of Mitochondria in Inflammaging", *Frontiers in Molecular Biosciences*

2022 **Research Topic Editor**, “Current Advances in Exercise Immunology”, *Frontiers in Sport and Active Living*

2022 **Guest Editor**, *Frontiers in Cardiovascular Medicine*

2021-2022 **Research Topic Editor**, “Immune Aging and its Consequences”, *Frontiers in Endocrinology*

2020-2021 **Research Topic Editor**, “Aging and Immune Function”, *Frontiers in Nutrition*

Ad Hoc Manuscript Reviewer (91 distinct journals, 150 distinct papers reviewed)

Acta Virologica
Aging
American Journal of Lifestyle Medicine
Am J of Physiology – Reg Int Comp Physiol
Applied Microbiology and Biotechnology
Biochemical Pharmacology
BMJ Open Sport & Exercise Medicine
Cell Biology and Toxicology
Cellular and Molecular Immunology
Clinical Interventions in Aging
Current Aging Science
Cytokine
Exercise Immunology Review
Exploration of Immunology
FEBS Open Bio
Frontiers in Aging
Frontiers in Immunology
Frontiers in Nutrition
Frontiers in Physiology
Genes & Nutrition
Gut Microbes
Immunometabolism
Int J of Environ Research and Public Health
International Journal of Molecular Sciences
International Journal of Sports Medicine
iScience
Journal of Cellular and Molecular Medicine
Journal of Heart Health
Journal of Inflammation Research
Journal of Molecular Medicine
Journal of Thermal Biology
Life Sciences
Mediators of Inflammation
MethodsX
Molecular Neurobiology
Nanomaterials
Nature Reviews Immunology
Ageing Research Reviews
Aging Pathobiology & Therapeutics
Am J of Physiology – Cell Physiology
Antioxidants
Biomolecules
BMC Geriatrics
Brain Behavior and Immunity
Cells
Clinical and Translational Medicine
Communications Biology
Current Molecular Pharmacology
Diseases
Experimental Gerontology
FASEB Journal
Free Radical Research
Frontiers in Cellular and Infection Microbiology
Frontiers in Microbiology
Frontiers in Pharmacology
Future Microbiology
GeroScience
Immunity & Ageing
Immunotherapy
International Journal of Medical Sciences
Int Journal of Sport Nutrition & Exercise Metab
International Wound Journal
Journal of Applied Physiology
Journal of Clinical Medicine
Journal of Immunological Sciences
Journal of Leukocyte Biology
Journal of Sport and Health Sciences
Journals of Gerontology A: Biological Sciences
Marine Drugs
Medicine and Science in Sports and Exercise
Mitochondrion
Molecules
Nature Communications
Nutrients

Ad Hoc Manuscript Reviewer cont.

Nutrition Research
Pathogens
Physiological Reports
Physiology and Behavior
Phytomedicine
PLoS One
Rehabilitation Research and Practice
SAGE Open Medicine
Scientific Reports
Sports
Sports Medicine – Open
Toxins
US Respiratory & Pulmonary Diseases
Vaccine
Vaccines
Viruses
Wound Repair and Regeneration

Professional Development and Continuing Education

2025 Memphis Research Ecosystem Leaders Course, University of Memphis
2023 Research Leader Development Course, AtKisson Training Group, University of Memphis Cohort

Current Professional Affiliations

2006 American College of Sports Medicine
2009 International Society for Exercise and Immunology
2017 Gerontological Society of America
2017 American Aging Association
2017 American Heart Association
2025 Society of Research Administrators International