
BIOGRAPHICAL SKETCH

NAME Starnes, Joseph W.	Professor of Kinesiology
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MMYY	FIELD OF STUDY
Georgia Institute of Technology	B.S.	03/72	Management
Georgia State University		1973/74	Biology/Physiology
Univ. of Massachusetts	Ph.D.	05/78	Exercise Science
Univ. of Michigan	Postdoctoral	1978-80	Cellular & Molecular Biology

Positions and Honors

Positions and Employment

1980-1982	Research Associate, Dept. of Physiology, University of Pennsylvania, Philadelphia, PA
1982-1985	Research Associate, Dept. of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA
1985-2008	Assistant - Associate - Full Professor, Department of Kinesiology and Health Education, and Division of Pharmacology and Toxicology, University of Texas, Austin, TX
1990 summer	Visiting Professor, Dept. of Experimental Medicine and Biochemical Sciences, 2 nd University of Rome, Rome, Italy
1991-2000	Undergraduate Advisor and Coordinator of Undergraduate Programs, Department of Kinesiology and Health Education, University of Texas, Austin, TX
2000-2008	Graduate Advisor and Coordinator of Graduate Programs, Department of Kinesiology and Health Education, University of Texas, Austin, TX
2008-2012	Department Chair and Professor, Department of Kinesiology, University of North Carolina at Greensboro, NC
2008-	Professor, Department of Kinesiology, University of North Carolina at Greensboro, NC

Other Experience and Professional Memberships

1977-	Member, American College of Sports Medicine, elected Fellow in 1990
1981-1999	Member, The Gerontological Society of America
1989-	Member, American Heart Association; Basic Sciences Council
1991-	National Scientific Advisory Council of American Federation for Aging Research
1995-96, 2008, 2013	Research Review Committee, American Heart Association (Cardiac Bio Reg - BSci 2, March 2013 and Oct 2013)
1997-2008	Member and Chair (2003-2008), Institutional Animal Care and Use Committee, University of Texas, Austin, TX

2008- Chair, Scientific Content Advisory Committee of American College of Sports Medicine
2009- Editorial Board of *Journal of Applied Physiology*

Honors

1982 New Investigator Award, American College of Sports Medicine
1982 New Investigator Research Award, National Institutes of Health
2005-2008 Teresa Lozano Long Endowed Fellow in Kinesiology, University of Texas, Austin, TX
2006-2008 Lee Hage Jamail Fellow in Education, University of Texas, Austin, TX
2007 Tour of Texas Scholar, American College of Sports Medicine, Texas Chapter
2010 Fellow, National Academy of Kinesiology
2010-2013 Board of Directors, American Kinesiology Association (3-year term)

Research Summary

Work in my cardiac metabolism laboratory centers on understanding function, metabolism, and intrinsic adaptations of the heart. The primary experimental model used in my lab is the laboratory rat. We study function and metabolism in the intact heart using an isolated perfused working heart system, which is similar to a heart-lung apparatus. Many of our studies investigate the effects of acute or chronic exercise on the heart and skeletal muscles. Our research was consistently supported by grants from the American Heart Association and the National Institute on Aging for 25 years (1982-2007). The Cardiac Metabolism lab was built in 2009 and is located in the Eberhart Building, which is also the home of the Department of Biology.

Selected Peer-reviewed Publications (Selected from 60 total)

1. Starnes, J.W., Beyer, R.E. and Edington, D.W. Myocardial adaptations to endurance exercise in aged rats. *American Journal of Physiology* **245**: H560-H566, 1983.
2. Starnes, J.W., Edington, D.W. and Beyer, R.E. Myocardial protein synthesis during aging and endurance exercise in rats. *Journal of Gerontology* **38**: 660-665, 1983.
3. Starnes, J.W. and Rumsey, W.L.: Cardiac energetics and performance of exercised and food restricted rats during aging. *American Journal of Physiology* **254**: H599-H608, 1988.
4. Farrar, R.P., Starnes, J.W., Cartee, G.D., Oh, P.Y. and Sweeney, H.L.: Effects of exercise upon cardiac myosin isozyme composition during the aging process. *Journal of Applied Physiology* **64**: 880-883, 1988.
5. Daw, C.K., Starnes, J.W. and White, T.P.: Muscle atrophy and hypoplasia with aging: impact of training and food restriction. *Journal of Applied Physiology* **64**: 2428-2432, 1988.
6. Starnes, J.W., Cantu, G., Farrar, R.P. and Kehrer, J.P.: Skeletal muscle lipid peroxidation in exercised and food restricted rats during aging. *Journal of Applied Physiology* **67**: 69-75, 1989.
7. Bowles, D.K., Farrar, R.P. and Starnes, J.W. Exercise training improves cardiac function after ischemia in the isolated, working rat heart. *American Journal of Physiology* **263**: H804-H809, 1992.
8. Bowles, D.K. and Starnes, J.W. Exercise training improves metabolic response after ischemia in the isolated, working rat heart. *Journal of Applied Physiology* **76**: 1608-1614, 1994.
9. Starnes, J.W., Bowles, D.K. and Seiler, K.S. Myocardial injury after hypoxia in immature, adult and aged rats. *Aging: Clinical and Experimental Research* **9**: 268-276, 1997.
10. Harris, M.B. and Starnes, J.W. Effects of body temperature during exercise training on myocardial adaptations. *American Journal of Physiology* **280**: H2271-H2280, 2001.
11. Taylor, R.P., Ciccolo, J.T., and Starnes, J.W. Effect of exercise training on the ability of the rat heart to tolerate hydrogen peroxide. *Cardiovascular Research* **58**: 575-581, 2003.
12. Starnes, J.W., Taylor, R.P., and Park, Y. Exercise improves cardioprotection in aged rats. *American Journal of Physiology: Heart & Circulatory Physiology* **285**: H347-H351, 2003.
13. Starnes, J.W., Taylor, R.P., and Ciccolo, J.T. Habitual low-intensity exercise does not protect against myocardial dysfunction after ischemia in rats. *European Journal of Cardiovascular Prevention and Rehabilitation* **12**:169-174, 2005.
14. Starnes, J.W., Choilawala, A., Delp, M.D., Taylor, R.P., and Nelson, M.J. The interaction of aging and exercise on the expression of heat shock protein. *Journal of Gerontology: Biological Sciences* **60A**: 963-969, 2005.

15. Taylor, R.P., Olsen, M.E., and Starnes, J.W. Late preconditioning following acute exercise is not mediated by nitric oxide synthase in the rat heart. *American Journal of Physiology: Heart & Circulatory Physiology* **292**: H601-H607, 2007.
16. Starnes, J.W. Effect of Storage Conditions on Lactate Dehydrogenase Released from Perfused Hearts. *International Journal of Cardiology* **127**: 114-116, 2008.
17. Miller RA, Harrison DE, Astle CM, Baur JA, Boyd AR, de Cabo R, Fernandez E, Flurkey K, Javors MA, Nelson JF, Orihuela CJ, Pletcher S, Sharp ZD, Sinclair D, Starnes JW, Wilkinson JE, Nadon NL, Strong R. Rapamycin, But Not Resveratrol or Simvastatin, Extends Life Span of Genetically heterogeneous mice. *Journal of Gerontology: Biological Sciences and Medical Sciences*. **66A**:191-201, 2011.
18. Nelson MJ, Harris MB, Boluyt MO, Hwang HS, and Starnes JW. Effect of N-2-mercaptopropional glycine (MPG) on exercise-induced cardiac adaptations. *American Journal of Physiology:Regulatory, Integrative, and Comparative Physiology*. **300**: R993-R1000, 2011.
19. Taylor RP, and Starnes JW. Reactive Oxygen Species are not a Required Trigger for Exercise-Induced Late Preconditioning in the Rat Heart. *American Journal of Physiology:Regulatory, Integrative, and Comparative Physiology*. **303**: R968-R974, 2012.
20. Feger BJ, and Starnes JW. Myocardial Na⁺/H⁺ exchanger-1 (NHE1) content is decreased by exercise training. *Journal of Physiology and Biochemistry*. **69**: 305-312, 2013.
21. Shen W, Chuang CC, Martinez K, Reid T, Brown JM, Xi L, Hixson L, Hopkins R, Starnes J, and McIntosh M. Conjugated linoleic acid reduces adiposity and increases markers of browning and inflammation in white adipose tissue of mice. *Journal of Lipid Research*. **54** (4): 909-922, 2013.
22. Starnes, J.W., Neidra, D.B., Nyman, J.S., Roy, A., Nelson, M.J., Gutierrez, G., and Wang, X. Synergistic effect of exercise and statins on femoral strength in rats. *Experimental Gerontology*. **48** (8): 751-755, 2013.
23. Feger BJ, and Starnes JW. Exercise alters the regulation of myocardial Na⁺/H⁺ exchanger-1 (NHE1) activity. *American Journal of Physiology:Regulatory, Integrative, and Comparative Physiology*. **305**: R1182-R1189, 2013.
24. Shen W, Baldwin J, Collins B, Hixson L, Lee K-T, Herberg T, Starnes J, Cooney P, Chuang C-C, Hopkins R, Reid T, Gupta S, and McIntosh M. Low level of trans-10, cis-12 conjugated linoleic acid decreases adiposity and increases browning independent of inflammatory signaling in overweight Sv129 mice. *Journal of Nutritional Biochemistry*. **26**(6):616-625, 2015.
25. Chase PJ, Davis PG, Wideman L, Starnes JW, Schulz MR, and Bensimhon DR. Comparison of Estimations versus Measured Resting Oxygen Consumption in Patients with Heart Failure and Reduced Ejection Fraction Undergoing Right Heart Catheterization. *American Journal of Cardiology*. **116**(11):1724-1730, 2015.
26. Starnes JW, Herberg TM, and Hixson LA. Method for preserving enzyme markers of cardiac damage after frozen storage in protein-free buffer. In Review