

**VITAE**

**Edward F. Coyle, Ph.D.; Professor**

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**Education:**

Queens College, CUNY, New York	B.A.	1975	Physical Education
Ball State University, Muncie, IN	M.A.	1976	Exercise Physiology
The University of Arizona	Ph.D.	1979	Animal Physiology
Washington University Medical School	NIH post-doc	1979-1982	Applied Physiology

**Professional Experience:**

- 1979-1982: Postdoctoral Research Fellow, Division of Applied Physiology, Department of Preventive Medicine, Washington University Medical School
- 1982-1985- Assistant Professor; The University of Texas at Austin
- 1985-1990 Associate Professor; The University of Texas at Austin
- 1990-present Professor; Department of Kinesiology & Health Education, University of Texas at Austin

**Honors (\* International and Particularly Meritorious)**

- Outstanding Graduate Teaching Award. Kinesiology and Health Education. UT-Austin, (2019)
- Fellow in the Teresa Lozano Long Endowed Chair in Kinesiology & Health Education (2012-2015)
- \*Inaugural Keynote Lecture; UK Sport and Exercise Medicine Conference (2010)
- Cissy McDaniel Parker Fellow at the University of Texas at Austin (2008-2012)
- \*Citation Award- American College of Sports Medicine- 2006 (2<sup>nd</sup> highest recognition)
- Committee on Military Nutrition Research. Institute of Medicine, The National Academies (1989- 2004)
- \*North American Delegate. Sports Nutrition Group. International Olympic Committee (2003-2013)
- \*President's Lecture: 50th Annual Meeting of The American College of Sports Medicine (2003)
- \*Keynote Speaker: 5th International Olympic Committee World Congress on Sport Sciences (1999)
- Distinguished Faculty Award for 2002. College of Education. The University of Texas at Austin
- Honor Award: Texas Chapter of The American College of Sports Medicine (2000)
- Fellow (#378) of the American Academy of Kinesiology and Physical Education (1997-now)
- Environmental and Exercise Physiology Steering Committee Member of APS (1997-2000)
- Co-Editor-in-Chief, *International Journal of Sports Medicine* (1992-1994)
- Fellow of the American College of Sports Medicine, 1991
- Faculty Research Assignment; Dept of Human Biology; Rijksuniversiteit Limburg, The Netherlands
- Louise Spence Griffeth Fellowship for Excellence at The University of Texas; (1986-91)
- Ambassador of the American College of Sports Medicine (1984-1990)
- Postdoctoral Research Fellowship: National Institutes of Heart HL-07081; AG-00078 (1979-1982)
- Editorial Board Member: *Journal of Applied Physiology*; (1989-1996) (1999-now)
- Medicine and Science in Sports and Exercise* (1989-now)
- European Journal of Sport Science* (2011-2021)
- Journal of Exercise Nutrition and Biochemistry* (2014-2016)
- Sports Medicine and Rehabilitation Journal* (2016-now)
- Journal of Science in Sport and Exercise* (2019)
- Nutrients* (2021-now)

**Supervising Professor for Doctorates Awarded and Dissertations**

Andrew R. Coggan- 1986; Professor. Indiana University/Purdue University, Indianapolis IN.  
Received the 'Student Research Award' from ACSM 1987

Scott J. Montain- 1991; Chief of Military Nutrition. US Army Research Institute for Environmental  
Medicine. Natick MA. Received the 2018 Hall of Honor Award- UT Austin

Jose Gonzalez-Alonso-1994; Endowed Professor, Brunel University. London

Jeffrey F. Horowitz- 1996; Professor. University of Michigan, Ann Arbor MI  
Received the 'Student Research Award' from ACSM;  
Received the 'Outstanding Doctoral Dissertation Award' from UT-Austin

Ricardo Mora-Rodríguez -1998; Professor. University of Toledo. Toledo Spain  
Received the 'Outstanding Doctoral Dissertation Award' from UT-Austin

Ricardo G. Fritzsche- 1998; Research scientist and clinician. PPD Inc. Austin TX

Theodore W. Zderic- 2002; Research Scientist. University of Houston. Houston TX/  
Received the 'Student Research Award' from ACSM

Joel D. Trinity- 2010; Associate Professor. Dept. of Internal Medicine. University of Utah Medical School  
Received the 'New Investigator Award' from ACSM

Mathew D. Pahnke- 2010; Senior Scientist. Gatorade Sport Science Institute. Chicago IL.

Il-Young Kim- 2012- Assistant Professor of Molecular Medicine; Gachon University School of Medicine  
Seoul Korea. Received the 'New Investigator Award' from the American Physiological Society.

Justin R. Trombold- 2012; Received an MBA from the University of North Carolina

Ting-Heng Chou- 2017; Post-doctoral Research Fellow. Ohio State University. Columbus OH.

Brian K. Leary- 2018; Assistant Professor. University of West Virginia, Morgantown WV.

Heath M. Burton- 2019; Assistant Professor., University of South Carolina Upstate SC.

Jakob R. Allen- 2020; Exercise Scientist. Austin Bold FC and the Austin Gilgronis rugby team.  
Austin TX.

**Grants and Contracts and Gifts to The University of Texas:** Totaling > \$4 million over tenure with  
mostly continuous funding.

**Professional Societies**

Fellow of The American College of Sports Medicine (1990) (member 1976-now)  
Texas Chapter of the American College of Sports Medicine (President 1986-1987)  
The American Physiological Society (APS); (1984-now)  
American Institute of Nutrition (1994-2006)  
American Society for Clinical Nutrition (1994-2006)

American Academy of Kinesiology and Physical Education (Fellow #378)(1997-now)

### **Edited Books**

*Food, Nutrition and Sports Performance II. The International Olympic Committee Consensus on Sports Nutrition.* Editors: RJ Maughan, LM Burke, and EF Coyle. Routledge Publishing, 2004.

### **U.S. Patent Granted.**

*Training system and method.* EF Coyle - US Patent App. 15/860,232, 2019 - The present disclosure provides an exercise training method for operating an exercise training system.

### **Summary of Publication Citations**

Google Scholar h-Index = 83 (34,754 Total Citations)

Web of Science (Thomas Reuters) h-Index = 64; (14,918 Total Citations)

Average citation per article = 81.08

49 Articles have been cited 100 times or more

**Total Publications** = 193 (including data based peer reviewed articles (113); scholarly review articles (38); scholarly chapters (35) and invited editorials (9). Not including abstracts and lay articles.

### **List of Published Works in My Bibliography:**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1hSDhJL9qmM5p/bibliography/46931482/public/?sort=date&direction=ascending>

### **Data Based Peer Reviewed Publications:**

115. Leary BK, Burton HM, Vardarli E, Wolfe AS, Crawford CK, Akins JD, and Coyle, EF. Effects of short-term maximal power training lasting four-seconds on  $VO_{2peak}$ . (In Review).
114. Satiroglu R, Lalande S, Hong S, Nagel M . and Coyle EF. 4-s inertial load sprint training raises maximal anaerobic power, peak oxygen consumption and blood volume. *Medicine and Science in Sports and Exercise* 53 (12): 00-00, 2021 (In Press).
113. Burton HM, and Coyle EF. Background inactivity blunts metabolic adaptations to intense short-term training. *Medicine and Science in Sports and Exercise* 53 (9): 00-00, 2021.
112. Vardarli E, Satiroglu R, Allen JR, Bjellquist-Ledger R, Burton BM, and. Coyle EF. Physiological responses to maximal 4-s sprint interval cycling using inertial loading: the influence of inter-sprint recovery duration. *European Journal of Applied Physiology* 121 (8): 2295-2304, 2021.
111. Allen JR, Satiroglu R, Fico B, Tanaka H, Vardarli E, Luci JJ, and Coyle EF. Inertial Load Power Cycling Training Increases Muscle Mass and Aerobic Power in Older Adults. *Medicine and Science in Sports and Exercise* 53 (6) 1188-1193, 2021.
110. Burton, HM and Coyle EF. Daily Step Count and Postprandial Fat Metabolism. *Medicine and Science in Sports and Exercise* 53 (2) 333-340, 2021.
109. Leary BK, Burton HM, Vardarli E, Wolfe AS, Crawford CK, Akins JD, Jensen JL, and Coyle, EF. Differences in Joint Power Distribution in High and Low Lactate Threshold Cyclists. *European Journal of Applied Physiology* 121 (1): 231-238, 2021.

108. Wolfe AS, Burton HM, Vardarli E, Coyle EF. Hourly 4-s sprints prevent impairment of postprandial fat metabolism from inactivity. *Medicine and Science in Sports and Exercise* 52, No. 10, pp. 2262–2269, 2020.
107. Crawford CK, JD Akins, E Vardarli, AS Wolfe, Coyle EF. Prolonged standing reduces fasting plasma triglyceride but does not influence postprandial metabolism compared to prolonged sitting. *PLoS One*, 2020; <https://doi.org/10.1371/journal.pone.0228297>.
106. Chou, T-H, Akins JD, Crawford CK, Allen, JR, Coyle EF. Low stroke volume during exercise with hot skin is due to elevated heart rate. *Medicine and Science in Sports and Exercise* 51 (10): 2025-2032, 2019.
105. Hagberg JM, , Coyle EF, Baldwin K, Cartee G, Weiss E, Fontana L, Joyner M, Kirwan J, Seals D. The Historical Context and Scientific Legacy of John O. Holloszy. *Journal of Applied Physiology* 127: 277-305, 2019.
104. Akins JD, Crawford CK, Burton HM, Wolfe AS, Vardarli E, Coyle EF. Inactivity induces resistance to the metabolic benefits of acute exercise. *Journal of Applied Physiology* 126: 1088-1094, 2019.
103. Chou, T-H, Allen, JR, Hahn, DW, Leary BK, Coyle EF. Cardiovascular responses to exercise when increasing skin temperature with narrowing of the core-to-skin temperature gradient. *Journal of Applied Physiology* 125: 697-705, 2018.
102. Kim I-Y, Park S, Chou T-H, Trombold JR, Coyle EF Prolonged sitting negatively affects the postprandial plasma triglyceride-lowering effect of acute exercise. *American Journal of Physiology - Endocrinology and Metabolism*, 311(5), E891-E898, 2016.
101. Lee JF, Christmas KM, Machin DR, McLean BD, and Coyle EF. Warm skin alters cardiovascular responses to cycling after preheating and precooling. *Medicine and Science in Sports and Exercise*. 47: 1168-1176, 2015.
100. Trombold JR, Christmas K, Machin D, Van Pelt DW, Heng TH, Kim IY, Coyle EF. Post-exercise macronutrient intake and subsequent postprandial triglyceride metabolism. *Medicine and Science in Sports and Exercise*. 46: 2099-2106, 2014.
99. Kim IY, Park S, Trombold JR, Coyle EF. Effects of moderate- and intermittent low-intensity exercise on postprandial lipemia. *Medicine and Science in Sports and Exercise* 46: 1882-1890, 2014.
98. Machin DR, Christmas KM, Chou TH, Hill S, Van Pelt D, Trombold JR, and Coyle EF. Effects of differing dosages of pomegranate juice supplementation after eccentric exercise. *Physiology Journal* Volume 2014, Article ID 271959, <http://dx.doi.org/10.1155/2014/271959>
97. Trinity JD, Pahnke MD, Trombold JR, Coyle EF. Impact of polyphenol antioxidants on cycling performance and cardiovascular function. *Nutrients* 6(3):1273-1292, 2014.
96. Trombold JR, Christmas K, Machin D, Kim IY, Coyle EF. Acute high-intensity endurance exercise is more effective than moderate-intensity exercise for attenuation of postprandial triglyceride elevation. *Journal of Applied Physiology*. 114: 792-800, 2013.
95. McLean B, Petrucelli C, Coyle EF. Maximal power output and perceptual fatigue responses during a Division I female collegiate soccer season. *Journal of Strength and Conditioning Research*. 26: 3189–3196, 2012.
94. Trinity, JD, Lee JF, Pahnke MD, Beck KC, Coyle EF. Attenuated relationship between cardiac output and oxygen uptake during high intensity exercise. *Acta Physiologica* 204: 362-370, 2012.
93. Diefenthaler, F, Coyle EF, Bini RR, Carpes FP, Vaz MA. Muscle activity and pedal force profile of triathletes during cycling to exhaustion. *Sport Biomechanics* 11(1): 10-19, 2012.
92. Trombold JR, Reinfeld AS, Casler JR, Coyle EF. The effect of pomegranate juice supplementation on strength and soreness after eccentric exercise. *Journal of Strength and Conditioning Research* 25 (7) 1783-1788, 2011.

91. Trinity, JD, Pahnke MD, Lee JF, Coyle EF. Interaction of Hyperthermia and Heart Rate on Stroke Volume during Prolonged Exercise. *Journal of Applied Physiology* 109: 745-751, 2010
90. Pahnke MD, Trinity JD, Zachwieja JJ, Stofan JR, W. Douglas Hiller DH, and Coyle EF. Serum sodium concentration changes are related to fluid balance and sweat sodium loss. *Medicine and Science in Sports and Exercise*. 42: 9: 1669-1680, 2010.
89. Trombold JR, Barnes JN, Critchley L, Coyle EF. Ellagitannin consumption improves strength recovery 2-3 days after eccentric exercise. *Medicine and Science in Sports and Exercise*. 42 (3) 493-498, 2010.
88. Trinity J, Pahnke M, Sterkel J, Coyle EF. Maximal Power and Performance during a Swim Taper. *International Journal of Sports Medicine* 29(6): 500-506, 2008.
87. Trinity JD, Pahnke MJ, Reese EC, Coyle EF. Maximal mechanical power during a taper in elite swimmers. *Medicine and Science in Sports and Exercise* 38:1643-1649, 2006.
86. Coyle, E.F. Improved muscular efficiency displayed as 'Tour de France' champion matures. *Journal of Applied Physiology*. 98: 22191-2196, 2005.
85. Zderic TW, Schenk S, Davidson CJ, Byerley LO, Coyle EF. Manipulation of dietary carbohydrate and muscle glycogen affects glucose uptake during exercise when fat oxidation is impaired by Beta-adrenergic blockade. *American Journal of Physiology: Endocrinol. Metab.* 287: 1195-1201, 2004.
84. Zderic TW, Davidson CJ, Schenk S, Byerley LO, Coyle EF. High-fat diet elevates resting intramuscular triglyceride concentration and whole body lipolysis during exercise. *American Journal of Physiology Physiology: Endocrinol. Metab.* 286: 217-225, 2004.
83. Schenk, S. Davidson, CJ, Zderic TW, Byerley LO, Coyle EF. Different glycemic indexes of breakfast cereals are not due to glucose entry into blood but to glucose removal by tissue. *American Journal of Clinical Nutrition*. 78: 742-748, 2003.
82. Mora-Rodriguez R, Hodgkinson BJ, Byerley LO and Coyle EF. Effects of  $\beta$ -adrenergic receptor stimulation and blockade on substrate metabolism during submaximal exercise. *American Journal of Physiology Physiology: Endocrinol. Metab.* 280:E752-760, 2001.
81. Coyle, EF, Jeukendrup AE, Oseto, MC, Hodgkinson, BJ and Zderic, TW. Low-fat diet alters intramuscular substrates and reduces lipolysis and fat oxidation during exercise. *American Journal of Physiology Physiology: Endocrinol. Metab.* 280(3): E391-398, 2001.
80. Martin JC, Diedrich D, Coyle EF: Learning effects associated with maximal power testing: implications for validity. *International Journal of Sports Medicine* 21(7): 485-487, 2000.
79. Romijn, J.A., Coyle EF, Sidossis LS, Rosenblatt J, Wolfe RR. Substrate metabolism during different exercise intensities in endurance-trained women. *Journal of Applied Physiology* 88:1707-1714, 2000.
78. Mora-Rodriguez R, Coyle EF: Effects of plasma epinephrine on fat metabolism during exercise: interactions with exercise intensity. *American Journal of Physiology Physiology : Endocrinol. Metab.* 278: E669-676, 2000.
77. Fritzsche RG, Coyle EF: Cutaneous blood flow during exercise is higher in endurance-trained humans *Journal of Applied Physiology Physiology* 88: 738-744, 2000.
76. Fritzsche RG, Switzer TW, Hodgkinson BJ, Lee SH, Coyle EF: Water and carbohydrate ingestion during prolonged exercise increase maximal neuromuscular power *Journal of Applied Physiology* 88: 730-737, 2000.
75. Gonzalez-Alonso J, Mora-Rodriguez R, Coyle EF: Stroke volume during exercise: influence of environment and hydration. *American Journal of Physiology (Heart Circ. Physiol.)* 278: H321-H330, 2000.
74. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Pre-exercise medium chain triglyceride ingestion does not reduce muscle glycogen utilization during high intensity exercise. *Journal of Applied Physiology* 88(1): 219-225, 2000.
73. Gonzalez-Alonso J, Mora-Rodriguez R, Coyle EF: Supine exercise restores the reductions in cardiac output and skin blood flow with dehydration. *American Journal of Physiology* 277 (Heart Circ. Physiol. 46): H576-H583, 1999.

72. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Substrate metabolism when subjects are fed carbohydrate during exercise. *American Journal of Physiology* 276 (Endocrinol. Metab. 39) E828-E835, 1999.
71. Fritzsche RG, Switzer TW, Hodgkinson BJ, Coyle EF: Stroke volume decline during prolonged exercise is influenced by the increase in heart rate. *Journal of Applied Physiology* . 86(3): 799-805, 1999.
70. Martin JC, Wagner BM, Coyle EF: Inertial-load method determines maximal cycling power in a single exercise bout. *Medicine and Science in Sports and Exercise* 29(11):1505-12, 1997.
69. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Lipolytic suppression following carbohydrate ingestion limits fat oxidation during exercise. *American Journal of Physiology* 273(4 Pt 1):E768-75, 1997.
68. Coyle EF, Jeukendrup AE, Wagenmakers AJ, Saris WH: Fatty acid oxidation is directly regulated by carbohydrate metabolism during exercise. *American Journal of Physiology* 273(2 Pt 1):E268-75, 1997
67. Gonzalez-Alonso J, Mora-Rodriguez R, Below PR, Coyle EF: Dehydration markedly impairs cardiovascular function in hyperthermic endurance athletes during exercise. *Journal of Applied Physiology* 82(4):1229-1236, 1997.
66. Klein S, Weber JM, Coyle EF, Wolfe RR: Effect of endurance training on glycerol kinetics during strenuous exercise in humans. *Metabolism* 45(3):357-361, 1996.
65. Mora-Rodriguez R, Gonzalez-Alonso J, Below PR, Coyle EF: Plasma catecholamines and hyperglycemia influence thermoregulation in man during prolonged exercise in the heat. *Journal of Physiology (Lond)*. 491(Pt 2):529-540, 1996.
64. Klein S, Coyle EF, Wolfe RR: Effect of exercise on lipolytic sensitivity in endurance-trained athletes. *Journal of Applied Physiology* 78(6):2201-2206, 1995.
63. Gonzalez-Alonso J, Mora-Rodriguez R, Below PR, Coyle EF: Dehydration reduces cardiac output and increases systemic and cutaneous vascular resistance during exercise. *Journal of Applied Physiology* 79(5):1487-96, 1995.
62. Romijn JA, Coyle EF, Sidossis LS, Zhang XJ, Wolfe RR: Relationship between fatty acid delivery and fatty acid oxidation during strenuous exercise. *Journal of Applied Physiology* 79(6):1939-45, 1995.
61. Below PR, Mora-Rodriguez R, Gonzalez-Alonso J, Coyle EF: Fluid and carbohydrate ingestion independently improve performance during 1 h of intense exercise. *Medicine and Science in Sports and Exercise* 27(2):200-210, 1995.
60. Klein S, Coyle EF, Wolfe RR: Fat metabolism during low-intensity exercise in endurance-trained and untrained men. *American Journal of Physiology* 267(6 Pt 1):E934-E940, 1994.
59. Moon JK, Coggan AR, Hopper MK, Baker LE, Coyle EF: Stroke volume measurement during supine and upright cycle exercise by impedance cardiography. *Annals of Biomedical Engineering* 22(5):514-523, 1994.
58. Horowitz JF, Sidossis LS, Coyle EF: High efficiency of type I muscle fibers improves performance. *International Journal of Sports Medicine* 15(3):152-157, 1994.
57. Heaps CL, Gonzalez-Alonso J, Coyle EF: Hypohydration causes cardiovascular drift without reducing blood volume. *International Journal of Sports Medicine* 15(2):74-79, 1994.
56. Romijn JA, Coyle EF, Sidossis LS, Gastaldelli A, Horowitz JF, Endert E, Wolfe RR: Regulation of endogenous fat and carbohydrate metabolism in relation to exercise intensity and duration. *American Journal of Physiology* 265(3 Pt 1):E380-391, 1993.
55. Romijn JA, Klein S, Coyle EF, Sidossis LS, Wolfe RR: Strenuous endurance training increases lipolysis and triglyceride-fatty acid cycling at rest. *Journal of Applied Physiology* 75(1):108-113, 1993.
54. Farrell PA, Wilmore JH, Coyle EF, Billing JE, Costill DL: Plasma lactate accumulation and distance running performance. 1979 [classical article] *Medicine and Science in Sports and Exercise* 25(10):1091-1097; discussion 1089-90, 1993.

53. Montain SJ, Coyle EF: Influence of the timing of fluid ingestion on temperature regulation during exercise. *Journal of Applied Physiology* 75(2):688-695, 1993.
52. Sinacore DR, Coyle EF, Hagberg JM, Holloszy JO: Histochemical and physiological correlates of training- and detraining-induced changes in the recovery from a fatigue test. *Physical Therapy* 73(10):661-667, 1993.
51. Horowitz JF, Coyle EF: Metabolic responses to preexercise meals containing various carbohydrates and fat. *American Journal of Clinical Nutrition* 58(2):235-241, 1993.
50. Montain SJ, Coyle EF: Influence of graded dehydration on hyperthermia and cardiovascular drift during exercise. *Journal of Applied Physiology* 73(4):1340-1350, 1992.
49. Montain SJ, Coyle EF: Fluid ingestion during exercise increases skin blood flow independent of increase in blood volume. *Journal of Applied Physiology* 73:903-910, 1992.
48. Sidossis LS, Horowitz JF, Coyle EF: Load and velocity of contraction influence gross and delta mechanical efficiency. *International Journal of Sports Medicine* 13(5):407-411, 1992.
47. Gonzalez-Alonso J, Heaps CL, Coyle EF: Rehydration after exercise with common beverages and water. *International Journal of Sports Medicine* 13(5):399-406, 1992.
46. Coyle EF, Sidossis LS, Horowitz JF, Beltz JD: Cycling efficiency is related to the percentage of type I muscle fibers. *Medicine and Science in Sports and Exercise* 24(7):782-8, 1992.
45. Romijn JA, Coyle EF, Hibbert J, Wolfe RR: Comparison of indirect calorimetry and a new breath  $^{13}\text{C}/^{12}\text{C}$  ratio method during strenuous exercise. *American Journal of Physiology (Endocrinol Metabolism)* 26:E64-E71, 1992.
44. Wilson JR, Coyle EF, Osbakken M: Effect of heart failure on skeletal muscle in the dog. *American Journal of Physiology* 262(Heart Circ Physiol 31):H993-H998, 1992.
43. Kautz SA, Feltner ME, Coyle EF, Baylor AM: The pedaling technique of elite endurance cyclists: changes with increasing workload at constant cadence. *International Journal of Sport Biomechanics* 7:29-53, 1991.
42. Montain SJ, Hopper MK, Coggan AR, Coyle EF: Exercise metabolism at different time intervals after a meal. *Journal of Applied Physiology* 70:882-888, 1991.
41. Coyle EF, Hamilton M, Alonso JG, Montain SJ, Ivy JL: Carbohydrate metabolism during intense exercise when hyperglycemic. *Journal of Applied Physiology* 70:834-840, 1991.
40. Coyle EF, Feltner ME, Kautz SA, Hamilton MT, Montain SJ, Baylor AM, Abrahams LD, Petrek GW: Physiological and biochemical determinants of elite endurance cycling performance. *Medicine and Science in Sports and Exercise* 23:93-107, 1991.
39. Hamilton MT, Gonzalez-Alonso J, Montain SJ, Coyle EF: Fluid replacement and glucose infusion during exercise prevents cardiovascular drift. *Journal of Applied Physiology* 71:871-877, 1991.
38. Ryan R, Coyle EF, Quick RW: Blood lactate profile throughout a training season in elite female swimmers. *Journal of Swimming Research* 6(3):5-9, 1990.
37. Coyle EF, Hopper MK, Coggan AR: Maximal oxygen uptake relative to plasma volume. *International Journal of Sports Medicine* 11:116-119, 1990.
36. Mancini DM, Coyle EF, Coggan AR, Beltz J, Ferraro N, Montain S, Wilson JR: Contribution of intrinsic skeletal muscle changes to  $^{31}\text{P}$  NMR skeletal muscle metabolic abnormalities in patients with chronic heart failure. *Circulation* 80(5) 1338-1346, 1989.
35. Coggan AR, Coyle EF: Metabolism and performance following carbohydrate ingestion late in exercise. *Medicine and Science in Sports and Exercise* 21:59-65, 1989.
34. Coggan AR, Coyle EF: Effect of carbohydrate feedings during high intensity exercise. *Journal of Applied Physiology* 65:1703-1709, 1988.
33. Coyle EF, Coggan AR, Hopper MK, Walters TJ: Determinants of endurance in well-trained cyclists. *Journal of Applied Physiology* 64:2622-2630, 1988.
32. Ivy JL, Katz AL, Cutler CL, Sherman WM, Coyle EF: Muscle glycogen synthesis after exercise: effect of time of carbohydrate ingestion. *Journal of Applied Physiology* (64(4): 1480-1485, 1988.

31. Hopper MK, Coggan AR, Coyle EF: Exercise stroke volume relative to plasma volume expansion. *Journal of Applied Physiology* 64:404-408, 1988.
30. Coggan AR, Coyle EF: Reversal of fatigue during prolonged exercise by carbohydrate infusion or ingestion. *Journal of Applied Physiology* 63:2388-2395, 1987.
29. Coyle EF, Coggan AR, Hemmert MK, Ivy JL: Muscle glycogen utilization during prolonged strenuous exercise when fed carbohydrate. *Journal of Applied Physiology* 61:165-172, 1986.
28. Coyle EF, Hemmert MK, Coggan AR: Effects of detraining upon cardiovascular responses to exercise: role of blood volume. *Journal of Applied Physiology* 60:95-99, 1986.
27. Martin WH, Coyle EF, Bloomfield SA, Ehsani AA: Effects of physical deconditioning after intense endurance training of left ventricular dimensions and stroke volume. *Journal of American College of Cardiology* 7:982-989, 1986.
26. Coyle EF, Martin WH, Bloomfield SA, Lowry OH, Holloszy JO: Effects of detraining upon responses to submaximal exercise. *Journal of Applied Physiology* 59:853-859, 1985.
25. Coyle EF, Coggan AR, Hemmert MK, Lowe RC, Walters TJ: Substrate usage during prolonged exercise following a pre-exercise meal. *Journal of Applied Physiology* 59:429-433, 1985.
24. Martin WH, Coyle EF, Ehsani AA: Cardiovascular sensitivity of epinephrine in the trained and untrained states. *American Journal of Cardiology* 54:1326-1330, 1984.
23. Martin WH, Coyle EF, Joyner M, Santeusanio D, Ehsani AA, Holloszy JO: The effects of stopping exercise training on epinephrine-induced lipolysis in man. *Journal of Applied Physiology* 56:845-848, 1984.
22. Hintz CS, Coyle EF, Kaiser KK, Chi MM, Lowry OH: Comparison of muscle fiber typing by quantitative enzyme assays and by myosin ATPase staining. *Journal of Histochemistry and Cytochemistry* 32:655-660, 1984.
21. Coyle EF, Martin WH, Sinacore DR, Joyner MJ, Hagberg JM, Holloszy JO: Time course of loss of adaptations after stopping prolonged intense endurance training. *Journal of Applied Physiology* 57:1857-1864, 1984.
20. Hagberg JM, Coyle EF: Physiological comparison of competitive racewalking and running. *International Journal of Sports Medicine* 5:74-77, 1984.
19. Martin WH, Heath G, Coyle EF, Bloomfield SA, Holloszy JO, Ehsani AA: Effect of prolonged intense endurance training on systolic time intervals in patients with coronary artery disease. *American Heart Journal* 107:75-81, 1984.
18. Miller JM, Coyle EF, Sherman WM, Hagberg JM, Costill DL, Fink WJ, Terblanche SE, Holloszy JO: Effect of glycerol feeding on endurance and metabolism during prolonged exercise in man. *Medicine and Science in Sports and Exercise* 15:237-242, 1983.
17. Chi MMY, Hintz CS, Coyle EF, Martin WH, Ivy JL, Nemeth PM, Holloszy JO, Lowry OH: Effects of detraining on enzymes of energy metabolism in individual human muscle fibers. *American Journal of Physiology* 244:C276-C287, 1983.
16. Coyle EF, Hagberg JM, Hurley BF, Martin WH, Ehsani AA, Holloszy JO: Carbohydrate feedings during prolonged strenuous exercise can delay fatigue. *Journal of Applied Physiology* 55:230-235, 1983.
15. Hagberg JM, Coyle EF: Physiological determinants of endurance performance as studied in competitive racewalkers. *Medicine and Science in Sports and Exercise* 15(4): 287-289, 1983.
14. Coyle EF, Martin WH, Ehsani AA, Hagberg JM, Bloomfield SA, Sinacore DR, Holloszy JO: Blood lactate threshold in some well trained ischemic heart disease patients. *Journal of Applied Physiology* 54:18-23, 1983.
13. Rotkis TC, Cote R, Coyle EF, Wilmore JH: Relationship between high density lipoprotein cholesterol and weekly running mileage. *Journal of Cardiac Rehab* 2(2):109-112, 1982.
12. Hagberg JM, Coyle EF, Carroll JE, Miller JM, Martin WH, Brooke MH: Exercise hyperventilation in patients with McArdle's disease. *Journal of Applied Physiology* 52:991-994, 1982.



11. Wilmore JH, Farrell PA, Norton AC, Cote RW III, Coyle EF, Ewy GA, Temkin LP, Billing JE: An automated, indirect assessment of cardiac output during rest and exercise. *Journal of Applied Physiology* 52(6): 1493-1497, 1982.
10. Ehsani AA, Martin WH, Heath, GW, Coyle EF: Cardiac effects of prolonged and intense exercise training in patients with coronary artery disease. *American Journal of Cardiology* 50:246-254, 1982.
9. Coyle EF, Feiring DC, Rotkis TC, Cote RW, Roby FB, Lee W, Wilmore JH: The specificity of power improvements through slow and fast isokinetic training. *Journal of Applied Physiology* 51:1437-1442, 1981.
8. Farrell PA, Wilmore JH, Coyle EF: Exercise heart rate as a predictor of running performance. *Research Quarterly of Exercise and Sport* 51(2): 417-421, 1980.
7. Costill DL, Coyle EF, Fink WJ, Lesmes GR, Witzmann FA: Adaptations in skeletal muscle following strength training. *Journal of Applied Physiology* 46:96-99, 1979.
6. Coyle EF, Costill DL, Lesmes GL: Leg extension power and muscle fiber composition. *Medicine and Science in Sports* 11:12-15, 1979.
5. Farrell PA, Wilmore JH, Coyle EF, Billing JE, Costill DL: Plasma lactate accumulation and distance running performance. *Medicine and Science in Sports* 11(4):338-344, 1979.
4. Lesmes GR, Costill DL, Coyle EF, Fink WJ: Muscle strength and power changes during maximal isokinetic training. *Medicine and Science in Sports and Exercise* 10(4): 266-269, 1978.
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#### **CHAPTERS AND NON-REFEREED ARTICLES**

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### **LETTERS TO THE EDITOR, EDITORIALS, AND PERSPECTIVES**

11. Coyle, EF: How Many Steps Per Day is Healthy, Even When You Exercise Regularly ? *Active Voice*. Newsletter of the American College of Sports Medicine. 1/26/2021.
10. Coyle, EF: Can 4-s Cycle Sprints Counteract Some Effects of Inactivity? *Active Voice*. Newsletter of the American College of Sports Medicine. 9/2020.
9. Chou, T-H; Coyle, EF. Cutaneous vascular volume change reflected in volume change after forearm venous occlusion *Journal of Applied Physiology* 125(3): 969-969, 2018. (LETTER)
8. Coyle EF: Reconsideration of a Tour de France cyclist. *Journal of Applied Physiology* 114: 1361, 2013. (LETTER)
7. Coyle EF; Trinity JD: Stroke volume does/does not decline during exercise at maximal effort in healthy individuals. *Journal of Applied Physiology* 104: 281-283, 2008. (POINT/COUNTERPOINT).
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5. Coyle EF: Understanding efficiency of human muscular movement exemplifies integrative and translational physiology. *Journal of Physiology* (London). 571: 501, 2006. (PERSPECTIVES)
4. Coyle EF: Scientific considerations for physiological evaluations of elite athletes. *Journal of Applied Physiology* 99: 1630 - 1631, 2005. (LETTER)
3. Coyle EF: Has Armstrong's cycle efficiency improved? *Journal of Applied Physiology* 99: 1628 - 1629, 2005. (LETTER)
2. Coyle EF: Very intense exercise-training is extremely potent and time efficient: a reminder. *Journal of Applied Physiology*. 98: 1983 - 1984, 2005. (EDITORIAL)
1. Coyle EF: Relationship between fatty acid delivery and fatty acid oxidation during exercise. *Journal of Applied Physiology* 81(3): 1450-1452, 1996.

### **MEDIA ARTICLES FOR THE LAYS PUBLIC**

More than 200 newspaper, magazine and on-line articles have highlighted Dr. Coyle's research over the years. In the recent past the *New York Times* has published four articles on Dr. Coyle's current research on inactivity physiology.

"Exercise in Four-second Bursts Throughout the Day"; *NY Times* , 1/18/21

"The 4-Second Workout." *NY Times* , 4/29/20

"Sitting for More Than 13 Hours a Day May Sabotage the Benefits of Exercise." *NY Times* , 4/10/19

"Keep it Moving." *NY Times* , 12/9/16

#### **On-line Media Coverages (Starting 2021)**

- 1/15/2021- Fast Talk episode 146: Cardiovascular Drift with Dr. Ed Coyle - <https://www.fasttalklabs.com/fast-talk/cardiovascular-drift-with-dr-ed-coyle/>.  
1/26/2021- <https://plantyourself.com/get-fit-quick-ed-coyle-on-pyp-448/>  
1/26/2021- <https://youtu.be/Vf1PSmQ9xKk>

### **PRESENTATIONS**

**International/National**

**Prolonged Sitting Creates Resistance to the Metabolic Benefits of Acute Exercise (i.e.; Exercise Resistance).** Integrated Physiology of Exercise- ACSM & APS. San Diego, CA (9/10/18).

**Muscle Health: On and Off the Court.** Annual Meeting of SCAN of American Dietetic Association. Charlotte, NC (4/1/17).

**Accomplishments of the Ball State University Human Performance Laboratory- 50<sup>th</sup> Anniversary.** Annual Meeting of the American College of Sports Medicine. San Diego, CA (5/28/15).

**Physiology of the Marathon: How fast might they go?**  
Korean Association of Health and Physical Education. Incheon, South Korea (8/21/14)

**Physiology of Endurance: How Fast Might They Go?**  
Kyung Book University. South Korea (8/19/14)

**What Separates the Good, the Elite and the Top Professional Cyclists?**  
Korean Cycling Federation. Seoul, South Korea (8/18/14)

**The Physiology of Endurance Performance: How Fast Might They Go?**  
Korean Sport Science Institute. Seoul, South Korea (8/18/14)

**Physiology of the Marathon: How Fast Might They Go?** The 8<sup>th</sup> International Sport Sciences Symposium of "Active Life". Tokyo Japan (2/23/13)

**Physiology of Endurance: How Fast Might They Go ?** The 20<sup>th</sup> International Congress on Sport Science for Students. Budapest, Hungary. (4/26/2012).

**The Limits of Human Performance.** UK Sport and Exercise Medicine Conference. London England (11/24/2010)

**The Limits of Human Performance.**  
Brunel University Invited Lecture; London England (11/20/2010)

**Training and Tapering in Sport.**  
Turkish Society of Exercise and Sports Medicine; Antalya, Turkey (11/11/2010)

**The Limits of Human Performance.**  
Turkish Society of Exercise and Sports Medicine; Antalya, Turkey (11/11/2010)

**Cardiac Output During High Intensity Exercise**  
**Influence of Tachycardia on Stroke Volume During High Intensity Exercise**  
Annual Meeting of the American College of Sports Medicine.  
Baltimore, Maryland. 6/2-5/2010.

**Metabolic and Performance Effects of Short-term Fasting.**  
International Olympic Committee; Sports Nutrition Working Group  
Lausanne, Switzerland. 4/3/2009.

**Physical Fatigue During Intense Exercise: Compensation of Physiological Systems**

Sustaining Performance Under Stress Symposium. (Co-organizer).

The University of Texas at Austin (CSIT).

Austin, TX. 12/4-6/2007.

**Carbohydrates and the Glycemic Index**

**Physiological Maturation of Lance Armstrong**

**Nutrition in the NBA, San Antonio Spurs**

International Congress for Physical Activity, Sports and Health

Santiago, Chile. 9/26-29/2007

**Substrate Use Throughout the Spectra of Exercise (Keynote)**

Sports, Cardiovascular and Wellness Nutritionists (SCAN) Annual Meeting

Austin, TX 4/13/07

**1) Fat Metabolism and Pre-exercise Nutrition**

**2) Application of the 'Glycemic Index'**

**3) Nutrition in the NBA: Feeding the San Antonio SPURS**

Sport Nutrition of Argentina- Athletic Club of River Plate

Buenos Aires, Argentina. 12/20/06

**1) Physiological Limits to Marathon Performance**

**2) Elite marathon performance: How fast can they go?**

2006 World Congress: Science and Medicine of the Marathon

Chicago, IL, 10/18-21/ 2006

**Nutrition for Training and Recovery**

**Physiological Profile of a Tour De France Grand Champion**

The 2nd International Forum on Sports Nutrition and Food

Beijing, China 8/8-9/2006

**Training Capacity in Adult Female Soccer Players.**

Scientific Conference on Soccer. Gatorade Sports Science Institute. Baveno, Italy. 5/17/06

**1) Update on Metabolism of Carbohydrate and Fat: The Simple Truth.**

**2) Increased Muscular Efficiency with Maturation into a Tour de France Champion**

**3) The Recovery of Muscle Glycogen after Exercise**

**4) Nutrition During Exercise: What and How Much?**

11th Symposium of the Medical and Training Application to Exercise and Sport

Ciudad de Mar del Plata, Argentina; 9/30 and 10/1/05

**Physiological Maturation of a Tour De France Grand Champion**

British Association of Sport and Exercise

Loughbrough, England, 9/5/05.

**Carbohydrate: Before, During and After Exercise**

British Physiological Society

Loughbrough, England. 9/3/05

**Meals Prior to a Match**

FIFA- Federation International Football Association  
Zurich, Switzerland. 9/1/05

**Nutrient Mix for Recovery from Training and Competition**

National Strength and Conditioning Coaches Association Meeting  
Louisville, Kentucky. 1/7/04 (2 lectures).

**Recovery from Training and Competition**

China National Meeting on Sports Nutrition (1st Annual)  
Beijing, China. 11/5/04.

**Carbohydrate Ingestion Prior to and During Intense Exercise.**

The National Academies: Food and Nutrition Board  
Committee on Optimization of Nutrient Composition of Military Rations.  
USARIEM, Natick, MA 8/9/04.

**The IOC Consensus on Sports Nutrition: Macronutrients and Fluids**

Annual Meeting of the American College of Sports Medicine  
Indianapolis, IN, 6/05/04.

**50 Years of Progress in the One-Mile Run: Physiological Limits**

Annual Meeting of the American College of Sports Medicine  
Indianapolis, IN, 6/05/04.

**Hydration and Physical Performance: Laboratory Studies:** Joint Conference of ACSM and NATO.  
Hydration and Physical Activity Boston, MA. 12/9/03

**Energy to Burn: Science or Hype in Substrate Metabolism.** SCAN Sports Nutrition Workshop (Pre-FNCE). American Dietetic Association Annual Meeting. San Antonio, TX. 10/25/03.

**Nutritional Strategies for Competitive Athletes**

**Fluid, Electrolyte and Substrate Intake during Exercise**

**The Physiology of Endurance**

Medical Conference for the Hawaii Ironman World Championships  
Kona, HI. 10/13-14/03

**Recovery From Exercise. Nutrition and Training for Sport.** Conference Sponsored by Gatorade Sports Sciences Institute. Chicago, IL. 7/25/03.

**Fluid and Substrate Intake during Exercise.** International Olympic Committee- Working Group on Sports Nutrition. Consensus Conference. Laussane, Switzerland. 6/16/03.

**Nutrición para la recuperación: ¿Cuál es la mezcla correcta de Nutrientes? 6/7/03**

**¿Cuanta proteína, grasa y carbohidratos, realmente necesita el deportista? 6/6/03**

International Symposium for Sports Nutrition. Universidad Iberoamericana. Mexico City, Mexico

**Endurance Performance Physiology: Application and Remaining Mysteries**



President's Lecture: 50th Annual Meeting of The American College of Sports Medicine  
San Francisco, California 5/28/03.

**Anti-oxidants and Exercise: Perspective of an Applied Physiologists- Symposium Discussant**  
Annual Meeting of the American College of Sports Medicine  
San Francisco, California, 5/27/03.

**Dehydration and Hyperthermia During Exercise Increase Muscle Glycogenolysis and Not Plasma Glucose Kinetics**  
XXXIV International Congress of Physiological Sciences  
Christchurch, New Zealand. 8/30/01.

**Sugar Feeding During Exercise in the Heat Increase Plasma Glucose Kinetics Without Altering Glycogen Oxidation**  
XIIIth International Conference on the Physiology of Food and Fluid Intake  
Port Douglas, Australia. 8/22/01.

**The ACSM Recommendations & Rationale for Fluid Replacement During Exercise**  
Annual Meeting of the American College of Sports Medicine.  
Baltimore, Maryland. 5/30/01.

**Ergogenic Aids and Drug Use in Cycling**  
American Medical Society for Sports Medicine: Annual Meeting  
San Antonio, Texas 4/8/01

**Cardiovascular Drift During Prolonged Exercise**  
Sport Science Network 2000  
Nagano, Japan. 10/13/00.

**Substrate Selection During Exercise- Tutorial Lecture**  
Annual Meeting of the American College of Sports Medicine.  
Indianapolis, Indiana. 6/3/00.

**Human Endurance Performance- Keynote Speaker**  
Sport Medicine- British Columbia: Annual Conference  
Vancouver, New Westminister, British Columbia, Canada, 4/1/00.

**Carbohydrate and Sport Performance**  
VII COSUMED Congress (South American Confederation of Sports Medicine),  
and the III AMEDCO Congress (Colombian Association of Sports Medicine).  
Santafé de Bogotá, Columbia, 3/16/00.

**Physiology of Endurance Performance.**  
I World Congress of Graduate Sports Medicine  
Santafé de Bogotá, Columbia, 3/14/00

**Determinants of Endurance Exercise Performance- Biological Science Keynote Speaker**  
Fifth International Olympic Committee World Congress on Sport Sciences  
Sydney, Australia. 11/2/99.

**Physiological and Performance Benefits of Optimal Hydration**

Conference on Exercise Metabolism and Nutrition  
Melbourne University, Melbourne, Australia. 10/29/99.

**Physiological and Performance Benefits of Optimal Hydration**

1999 Gatorade Sports Science Conference  
Chicago, IL. 6/25/99

**Fueling and Cooling During Exercise**

National Athletic Trainer's Association 50th Annual Meeting, Kansas City MO. 6/19/99

**Fluid Replacement during Exercise**

International Symposiums of Sports Medicine  
Hong Kong, China. 6/16/99  
Guangzhou, China. 6/14/99  
Shanghi, China. 6/11/99

**Dietary Carbohydrate and Fat: Effects on Metabolism**

Christchurch, New Zealand (12/3/98); Auckland, New Zealand (12/8/98); Dunedin, New Zealand (12/10/98).

**Nutrition for Active People and Athletes: What Do You Really Need?**

Dr. Tom Anderson Memorial Lecture / New Zealand Dietetic Association  
Christchurch, New Zealand (12/2/98); Auckland, New Zealand (12/7/98); Dunedin, New Zealand (12/9/98).

**Pre-Exercise Meals: Effects on Metabolism and Performance** 10/6/98

**Carbohydrate Supplementation for Strength Training** 10/5/98

**Carbohydrate Supplementation for Intermittent Exercise** 10/5/98

**The Interaction of Carbohydrate and Fat Metabolism during Exercise** 10/5/98

6th International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

**Exercise Training and Substrate Utilization.** 6/4/98 **Diet Composition and Exercise Performance: High Fat or High Carbohydrate?** 6/6/98 Annual Meeting of the American College of Sports Medicine. Orlando, FL.

**Dietary Fat and Carbohydrate: What Balance?**

**Fit/Fat: Diet for Health**

ACSM's Health and Fitness Summit. Austin, Texas 4/30/98 and 5/1/98 and 5/2/98.

**Choice of Substrate During Exercise.** 2nd Conference of Copenhagen Muscle Research Centre  
The Royal Danish Academy of Sciences. Copenhagen, Denmark, 10/25/97.

**Nutrition and the Athlete.** American Osteopathic Association Annual Conference. San Antonio, Texas, 10/20/97.

**Lipid Oxidation during Exercise: Role of Lipolysis, FFA Availability and Glycolytic Flux**

10th International Conference on Biochemistry of Exercise. Sydney, Australia, 7/16/97.

**Fuels for Exercise.** Recent Advances in Sports Nutrition. The University of Sydney, Sydney, Australia, 7/14/97.

**Fuels for Exercise.** Recent Advances in Sports Nutrition. Deakin University. Melbourne, Australia, 7/11/97.

**Intramuscular Triglyceride Oxidation During Exercise Acutely Increases With Reduced Plasma FFA Mobilization and Oxidation.** Experimental Biology Meetings. New Orleans, Louisiana, 4/2/97.

**Fat Metabolism during Exercise.** Advances in Training and Nutrition for Endurance Sports. Papendal-Arnheim, The Netherlands, 1/30/97.

**Limits of Human Endurance Performance** 10/24/96

**Cardiovascular Stress of Dehydration and Hyperthermia** 10/20/96

**Benefits of Fluid Replacement: Role of Plasma Volume and Catecholamines** 10/20/96,  
Ironman Medical Conference, Kona Hawaii

**Heat, Hydration and Athletic Performance: Cardiovascular Effects of Dehydration.** 7/11/96

**Why Nutrition is Important and Included in the Chain.** 7/10/96.

Physical Activity, Sport and Health. The 1996 International Pre-Olympic Scientific Congress. Dallas, Texas.

**Physical Activity as a Metabolic Stressor**

NIH Workshop on "The Role of Dietary Supplements for Physically Active People. National Institutes of Health. Bethesda, Maryland. 6/3/96.

**Impairment of Fat Mobilization and Oxidation with Carbohydrate Ingestion.** 6/1/96

**Glycolytic Flux During Exercise Regulates Fatty Acid Oxidation.** 5/30/96

**Physiological Determinants of Elite Cycling Performance.** 5/29/96

Annual Meeting of the American College of Sports Medicine. Cincinnati.

**Fueling and Cooling Endurance Athletes for Peak Performance.** Boston Marathon Seminar Series for the 100th Anniversary. Boston, Massachusetts, 4/13/96.

**Fuel Selection for the Working Muscle.** CEFS Workshop: Carbohydrates in Relationship to Physical Performance. Waterloo, Belgium 12/4/95.

**Cardiovascular Drift in Prolonged Exercise: Effects of Dehydration and Rehydration.** International Conference on Dehydration, Rehydration and Exercise in the Heat. Nottingham, England. 11/2/95.

**Human Endurance Performance: Integrating Physiological Factors** 10/3/95

**Fluids, Electrolytes and Plasma Volume Changes** 10/1/95

**Cardiovascular Stress of Dehydration and Hyperthermia** 10/1/95

Ironman Medical Conference, Kona Hawaii

**Carbohydrate and Performance: Competition and Recreation.** Post Graduate Course Co-Sponsored by ACSM and ASCN. Nutrition and Exercise for Performance and Health. Minneapolis, Minnesota. 6/3/95.

**Utilization of Substrates during Prolonged Exercise: Carbohydrate vs. Fat** 5/7/95

**Model of the Physiological Determinants of Endurance Performance** 5/7/95  
**Cardiovascular Responses to Dehydration during Prolonged Exercise** 5/6/95  
4th International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

**Workshop: Exercise Metabolism Using Stable Isotopes.** The Physiological Society. Birmingham, England. 12/21/94.  
**Physiological and Biochemical Limitations to Performance.** The Physiological Society. Birmingham, England. 12/21/94.

**Application of Stable Isotopes for Studying Metabolism during Exercise.** Rijksuniversiteit Limburg Medical School, Maastricht, The Netherlands 11/2/94.

**Carbohydrate and Fluid Ingestion with Exercise.** VI Meeting of the Spanish Sports Medicine Federation. Los Narejos (Murcia), Spain. 9/30/94-10/3/94.  
**Sports Nutrition.** FIMS World Congress of Sports Medicine. Athens, Greece 9/12/94.

**Effects of Dehydration on Cardiovascular Drift during Prolonged Exercise** 5/14/94  
**Physiological Determinants of Endurance: Competitive Cycling** 5/13/94  
**Carbohydrate Intake to Cope with Training, Competition and Recovery.** 5/13/94  
3rd International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

**Substrate Utilization in Active People.** New Dimensions in Carbohydrates. The American Society for Clinical Nutrition. Washington, DC. 12/13-14/93.

**Potential Role of Muscle Fiber Type in Determining Oxygen Drift during Exercise**  
Annual Meeting of the American College of Sports Medicine. Symposium. Seattle, Washington 6/3/93

**Scientific Testing of Olympic Cyclists. Symposium of The Argus Tour.** Cape Town, South Africa. 3/12/93.

**Pitfalls in the Development of Sports Medicine- The Experience of Leading International Sports Nations.** 3/11/93.

**Nutritional Aids to Athletic Performance.** 3/10/93

**Fat or Carbohydrate for Optimal Exercise Performance.** 3/10/93  
5th South African Sports Medicine Association Congress. Cape Town, South Africa.

**Nutrition for Developing Sport Programs.** First International Lectures. University of the Western Cape. Cape Town, South Africa. 3/8/93.

**Carbohydrate and Sports Nutrition.** Johannesburg Dietetic Association: Kellogg Group. BIFA Conference Center. Johannesburg-Midrand. South Africa. 3/4/93.

**Biochemistry of Substrate Utilization.** Sports Nutrition Speaker Network. Chicago, Illinois. 12/11/92.

**Thermoregulatory and Cardiovascular Responses to Fluid Replacement during Exercise.** Quaker Oats Conference. Baveno, Italy. 6/18-22/92

**Temperature Regulation and Fluid Balance.** Nutrition for the Marathon and Other Endurance Sports. The Ohio State University. Columbus, Ohio 4/9-10/92

**Carbohydrate Feeding During Exercise.** International Scientific Congress on Mountain Sport. Chamonix, France. 2/2-4/92

**Future Research in Carbohydrate Metabolism.** Sports Nutrition Conference. The American College of Sports Medicine, Indianapolis. 1/10-11/92.

**Sports Nutrition: Principles to Practice.** Second International World Congress on Sport Sciences. Barcelona, Spain. 10/20/91.

**Effects of Diet on Intermittent High Intensity Exercise.** Rugby World Cup Sports Medicine Congress. Royal College of Surgeons. Edinburgh, Scotland. 10/23/91.

**Nutritional Approach to Exercise and Performance.** Institute of Sports Medicine and Science, Agui, Japan, 9/28/91.

**Carbohydrate Feedings and Performance.** The 8th International Biochemistry of Exercise Conference. Nagoya, Japan, 9/27/91

**Metabolic Responses to Exercise.** Quaker Oats Conference. Bermuda, 6/24-28/91

**Carbohydrate and Fluid Ingestion During Exercise: Are There Trade-Offs?** Annual Meeting of the American College of Sports Medicine. Symposium. Orlando, Florida, 5/29/91.

**Carbohydrates and Exercise.** American Institute of Nutrition Symposium. FASEB Annual Meeting. Atlanta, 4/21/91.

**Timing and Method of Increased Carbohydrate Intake to Cope with Heavy Training, Competition and Recovery.** International Olympic Committee Consensus Conference- Foods Nutrition and Sports Performance. Lausanne, Switzerland. 2/4-5/91.

**Carbohydrate Metabolism and Fatigue.** Conference on the Biochemical and Physiological Aspects of Muscular Fatigue. French Physiological Society and INSERM. Paris, 9/20-22/90 France.

**Ergogenics: The Enhancement of Sport Performance.** Quaker Oats Conference. Maui, Hawaii, 6/14-18/90.

**Carbohydrate Feedings: Effects on Metabolism, Performance and Recovery.** Conference on Sports Nutrition. Magglingen, Switzerland, 6/6/90.

**Carbohydrate Feedings: Effects on Metabolism, Performance and Recovery.** FIMS World Congress of Sports Medicine. Amsterdam, Netherlands, 5/31/90.

**Nutrition During and After Exercise.** Conference on "Nutrition and Sports Performance". Rome, Italy, 4/20-21, 1990.

**Detraining Application to Microgravity.** Conference on "Countering Space Adaptation with Exercise: Current Issues". NASA, Houston, Texas, 9/26-28/89.

**Recent Advances in Carbohydrate Metabolism: Feeding During Exercise.** The 14th International Congress of Nutrition. Seoul, South Korea. 8/20-25/89.

**Fluid Replacement during Exercise.** Quaker Oats Conference on Fluid Homeostasis. Kauai, Hawaii, 6/22-26/89.

**Physiology of Detraining.** Colloquia presented at the Annual Meeting of the American College of Sports Medicine. Baltimore, Maryland, 6/1/89.

**Carbohydrate Feeding During Prolonged Exercise.** Conference on "Nutrition et Sport". Paris, France. 5/25-27/89.

**Timing of Carbohydrate Supplementation during Prolonged Strenuous Exercise.** Workshops on the Use of Carbohydrate-Electrolyte Solutions by Field Soldiers. National Research Council-National Academy of Science, Washington, D.C., 2/1/89.

**Exercise and Diabetes in Youth.** Quaker Oats Conference on Youth, Exercise and Sport. Bermuda. 6/23-27/88.

**How Do Carbohydrate Feedings Improve Performance in Prolonged Exercise?** Annual Meeting of the American College of Sports Medicine. Symposium. Dallas, Texas. 6/25/88.

**Dietary Carbohydrate as an Ergogenic Aid during Endurance Exercise.** Federation of American Societies for Experimental Biology. Symposium. Las Vegas, Nevada. 5/3/88.

**Carbohydrate Feeding During Exercise.** Press Conference for Writers. New York, New York. 3/9/88.

**Principles of Exercise Training and Nutrition.** Japanese Swimming Federation. Osaka, Japan. 11/8/87.

**Nutrition for Prolonged Exercise: Energy, Carbohydrate and Fluids.** Quaker Oats Conference on Prolonged Exercise. Warwick, Bermuda, 6/25-29/87.

**Basics of Muscular Contraction.** National Strength and Conditioning Coaches Association National Meeting. Dallas, Texas, 6/85.

**Physiological Performance Evaluation with Detraining.** United States Olympic Committee First National Conference on Performance Evaluation. Colorado Springs, Colorado, 1/85.

### **Regional or State or Invited University Lectures**

**Muscle Health.** POM Wonderful Scientific Advisory Board. Los Angeles, CA. 2/13/19.

**Prolonged Sitting: Does It Override Some of the Healthy Effects of Acute Exercise ?** Department of Health and Kinesiology. Texas A&M University College Station, TX. 11/16/2018

**Physical Inactivity: It Takes a Village.** McCraw Lecture. Kinesiology and Health Education. The University of Texas at Austin. Austin, Texas, 9/28/18

**Physical Inactivity: A Modern Preventable Epidemic.** School of Nursing. The University of Texas at Austin. Austin, Texas, 3/30/18

**The Physiology of Cycling: Resisting Fatigue and Maximizing Power,** 10/22/15

**Fatigue During Exercise: Carbohydrate Depletion, Dehydration and Hyperthermia,** 10/23/15  
Northland Chapter of ACSM. Minnesota State University, Mankato, MN

**Dehydration During Intense Exercise: Maintain Blood Pressure but Get Hot**  
Tarleton State University, Stephenville, TX, 3/27/15

**Physiology of the Marathon: How Fast Might They Go?**  
University of Texas- Tyler, Tyler TX, 3/26/15

**Physiology of the Marathon: How Fast Might They Go?**  
University of Houston, Houston TX, 3/25/15

**Dehydration During Intense Exercise: Maintain Blood Pressure but Get Hot**  
Texas A&M University-Kingsville, Kingsville, TX, 3/24/15

**Dehydration During Intense Exercise: Maintain Blood Pressure but Get Hot**  
Texas A&M University- San Antonio, San Antonio, TX, 3/23/15

**Sports Science: Measurement of Maximal Power.**  
Annual Worldwide Meeting of National Instruments  
Austin, TX 8/6/13

**Marathon Performance: How Fast Might They Go ?**  
McCraw Lecture: Dept. Kinesiology and Health Education: UT-Austin  
Austin, TX 9/28/12

**Limits to Human Performance: How Fast Might They Go ?**  
Texas Chapter of ACSM  
Austin, TX 2/25/11

**Delayed Onset Muscle Soreness.**  
POM Wonderful Research Summit.  
Los Angeles, CA. 2/9/2011

**Physiological Modeling for Improved Performance.** DSRC/DARPA Workshop. Houston, TX 2/15/10

**Detraining.** 37<sup>th</sup> Annual Sports Medicine Conference. The University of Texas Health Science Center of San Antonio. Austin, TX. 2/6/10.

**Delayed Onset Muscle Soreness and Polyphenol Supplementation.**  
POM Wonderful Research Summit.  
UCLA, Los Angeles, CA. 6/16/2008

**Does the Cardiovascular System Fail During Intense or Prolonged Exercise ?**

Department of Health and Kinesiology. Texas A&M University  
College Station, TX. 10/17/2007

**Substrate Use Through the Spectra of Exercise: The Basis of Sports Nutrition. And  
The Physiology of Endurance Performance: Ultimate Limits.**

Keynote Speaker: 18th Annual Steven J. Rose Symposium  
Washington University School of Medicine. Program in Physical Therapy.  
St. Louis, MO. 9/14/07

**Stroke Volume During Intense Exercise: When Does it Decline ?**

Institute for Exercise and Environmental Medicine  
Presbyterian Hospital of Dallas  
Dallas, TX 9/7/2007

**Effects of Polyphenols on Endurance Performance.**

POM Wonderful Research Summit  
Los Angeles, CA. 2/7/2007.

**Physiological Maturation of Endurance Athletes.**

Mid-Atlantic Regional Chapter - American College of Sports Medicine  
Harrisburg, PA. 11/10/2006.

**Sport Reflects Life: Physiological Maturation.**

2006 Kimberley Schulze Memorial Lecture. Ball State University  
Muncie, IN. 9/25/2006.

**Physiological Maturation of Lance Armstrong.**

**Heat, Dehydration, Hyponatremia and a Safe 'Hotter-n-Hell Hundred'.**  
MPEC, Wichita Falls, Texas. 8/25/06.

**Physiological Responses to Exercise.**

DARPA Peak Soldier Performance Conference  
San Diego, CA. 8/1/06.

**Monitoring Power of Entire Teams to Detect Over-Training and to Perfect the Taper.  
Nutrition for Recovery- Putting Theory into Effective Practice.**

2006 Big 12 Conference: Medical Aspects of Sport Educational Symposium.  
Dallas, TX. 5/5/2006.

**Lance Armstrong's Physiological Maturation: Sport Reflects Life.**

Brody School of Medicine. East Carolina University.  
Greenville, NC. 3/23/06.

**Physiological Maturation of Lance Armstrong's.**

Rocky Mountain Chapter ACSM.  
Estes Park, CO. 2/25/06.



**Power and Performance in Collegiate Swimmers and Soccer Players.**

Rocky Mountain Chapter ACSM.

Estes Park, CO. 2/24/06.

**Fatigue of Physiological Systems during Exercise: Inability to Compensate** Washington University

School of Medicine; Division of Applied Physiology.

St. Louis, MO. 2/17/06.

**Evaluating and Explaining Human Performance: 'From Lab to Games of Texas'**

Texas Association for Institutional Research. Annual Meeting,

Austin, TX. 2/2/06.

**The Lows and Highs of Carbohydrate Diets.**

**Meeting Fluid Needs to Avoid Hyperthermia and Hyponatremia**

Texas Human Nutrition Conference- 32nd Annual. Texas A&M University.

College Station, TX. 2/4/05.

**The Physiology of Endurance.** North East Chapter of the American College of Sports Medicine.

Providence, RI. 11/6/03.

**Race Day Nutrition Mistakes. Seminar for Athletes.** Hawaii Ironman Triathlon World Championships.

Kona, HI. 10/16/03

**Endurance Exercise Physiology- Are School Children Receiving Scientific Coaching?** Central States

Chapter of the American College of Sports Medicine. Kansas City, MO. 10/10/03

**Optimal Nutrition to Recover From Training.** Texas High School Coaches Association. Fort Worth,

TX. 7/28/03.

**Fat Oxidation during Exercise- What Limits the Rate? *Keynote Address.*** Northwest Chapter of the

American College of Sports Medicine. Spokane, WA. 2/22/02.

**Cardiovascular Drift and Dehydration.** University of Michigan Seminar Series. Department of

Kinesiology. Ann Arbor, MI. 9/28/01.

**Metabolism during Exercise.** Washington University School of Medicine; Division of Geriatrics and

Gerontology; St. Louis, MO; 5/23/01.

**Nutritional Aids for Athletic Performance: Fact vs. Fiction**

Methodist Hospital Sports Medicine Program. Dallas, TX 75237-3460. 12/7/00

**New Ideas Regarding Fat Metabolism during Exercise**

Texas Women's University. Denton, TX. 12/7/00.

**Cardiovascular Drift during Prolonged Exercise: New Perspectives.** Midwest Chapter of the American

College of Sports Medicine. Grand Rapids, MI., 10/5/00.

**Physiological Determinants of Endurance Performance** Southeast Chapter of the American College of

Sports Medicine .Charlotte, NC. 1/28/00.

**Substrate Use during Exercise and Physiological Determinants of Performance**

The Chinese University of Hong Kong. Hong Kong, China. 11/9/99.

**Overview: Exercise Training in the 21st Century and Physiological Stimuli.** Annual Meeting of the Texas Chapter of the American College of Sports Medicine. Houston, TX; 2/26/99.

**Regulation of Fat Oxidation during Exercise.** Washington University School of Medicine; Division of Geriatrics and Gerontology; St. Louis, MO; 5/13/98.

**Physiological Adjustments in Body Fluid Balance: Science and Practice.**

**Physiological Predictors of Exercise Performance.** Latin America Board of Advisors in Science and Education. Second Annual Meeting of the Gatorade Sports Science Institute. 1/28, 1998, San Juan, Puerto Rico.

**Endurance Performance: The Role of Fluids, Carbohydrates and Fat.** The Colloquia on Applied Science in Sports Medicine. M.D. Anderson Cancer Center. Houston, Texas, April 26, 1997.

**Fat Oxidation during Exercise: Lipolysis, Training and Diet.**

Colloquium Series. University of Colorado- Boulder. Boulder, Colorado. 2/21/97

**Fat Oxidation during Exercise: Lipolysis vs. Muscle Mitochondrial Activity**

Texas Chapter of the American College of Sports Medicine. Seguin, Texas. 2/6/97.

**Substrate Use during Exercise: Fat vs. Carbohydrate.** 10/27/95

**Cardiovascular Effects of Dehydration.** 10/26/95

Central States Chapter of the American College of Sports Medicine. Little Rock, Arkansas

**Workshop on Journal Publication.** Texas Chapter of the American College of Sports Medicine. Houston, Texas. 2/10/94.

**Regulation of Fat Metabolism during Exercise.** University of Cape Town Medical School. Department of Physiology. Cape Town, South Africa. March 15, 1993.

**Muscle Metabolism with Detraining: Implications for Retraining.** Texas Chapter of the American College of Sports Medicine. Fort Worth, Texas. 1/22/93.

**Cardiovascular Responses to Prolonged Exercise and Dehydration.** Midwest Chapter of the American College of Sports Medicine. Miami University of Ohio. Oxford, Ohio. 10/30/92.

**Carbohydrate Nutrition during Exercise.** Marquette University. Milwaukee, Wisconsin. 12/6/91.

**Fluid and Substrate Ingestion during Exercise: Role of Blood Volume and Skin Blood Flow.** Southwest Chapter of the American College of Sports Medicine. San Diego, California. 11/23/91.

**Blood Glucose and Exercise Performance** University of Texas Medical Branch at Galveston. Galveston, Texas. 10/31/90.

**Carbohydrate Use during Exercise.** Midwest Chapter of the American College of Sports Medicine. Muncie, Indiana. 10/27-27/1990.

**Substrate Ingestion and Utilization during Exercise.** Rocky Mountain Chapter of the American College of Sports Medicine. Breckenridge, Colorado. 1/26-28/90.

**Carbohydrate Feeding and Performance.** Sports Nutrition Update. Chicago, Illinois, 1/19/90

**Carbohydrate Supplementation during Prolonged Exercise.** Southeast Chapter of the American College of Sports Medicine Lecture Tour.

University of South Carolina. Columbia, South Carolina, 4/12/89

University of North Carolina. Chapel Hill, North Carolina, 4/11/89

University of Virginia. Charlottesville, Virginia, 4/10/89

**Carbohydrate Feeding During Prolonged Exercise.** Ball State University (Alumni Lecture). Muncie, Indiana. 4/19/88.

**Exercise Prescriptions.** Annual Meeting of Texas Family Physicians. Austin, Texas, 9/24/88.

**Optimizing Nutrition Before and During Competition. A Medical Seminar on Applications in Cycling and Endurance Training.** Whitmore College. Spokane, Washington. 7/29/88.

**Adaptations to Endurance Training Maintained During Periods of Physical Inactivity.** Texas A&M University. College Station. 10/30/87.

**Adaptations to Endurance Training Maintained During Periods of Physical Inactivity.** University of Texas at Tyler. Tyler. 10/29/87.

**Adaptations to Endurance Training Maintained During Periods of Physical Inactivity.** Texas College of Osteopathic Medicine. Forth Worth. 10/28/87.

**Adaptations to Endurance Training Maintained During Periods of Physical Inactivity.** University of Texas at Arlington. 10/28/87.

**Exercise in the Prevention and Management of Adult-Onset Diabetes.** The 35th Annual Postgraduate Pharmacy Seminar. Austin, Texas. 9/12/87.

**Nutritional Aspects of Exercise Performance.** Queens College. Flushing, New York, 2/26/87.

**Carbohydrate Supplementation during Exercise.** Mid-Atlantic Chapter of the American College of Sports Medicine. Hofstra, New York, 2/27/87.

**Exercise Training and Detraining.** United States Swim Coaches Association. Colorado Springs, Colorado, 12/10/86.

**Cardiovascular and Metabolic Effects of Detraining.** Guest Lecture at the Ohio State University. Columbus, Ohio, 3/13/86.

**Carbohydrate Feeding During Prolonged Strenuous Exercise Can Delay Fatigue.** Texas Chapter of the American College of Sports Medicine. Dallas, Texas, November 1983.

**Effects of Glucose Polymer Feeding on Fatiguability and the Metabolic Response to Prolonged Exercise.** Ross Labs Symposia on Nutrient Utilization during Exercise. Tarpon Springs, Florida, 10/82.

**Gastric Emptying Characteristics of Commercial Hydration Solutions.** Ross Labs Symposia on Nutrient Utilization during Exercise. Tarpon Springs, Florida, 10/82.

**The Specificity of Training for Improving Neuro-Muscular Power.** The University of South Carolina Guest Lecturer Series. Columbia, South Carolina, 2/81.

**Neuromuscular Adaptations to Isokinetic Training.** Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Washington, D.C., 4/80.

**Neuromuscular Adaptations to Isokinetic Training.** Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Las Vegas, Nevada, 3/80.

**Basics of Muscle Fiber Types and Their Importance to Human Performance.** Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Scottsdale, Arizona, 3/79.

**Brief Commentary on The Science of Sedentary Behavior and Cardiometabolic Health in Adults** University of Minnesota, Minneapolis Minnesota, 5/29/18.

### **Local**

**Can the Metabolic Effects of Prolonged Sitting Be Overcome by an Acute Bout of Exercise ?** Invited Lecture for Department of Health and Kinesiology. Texas A&M University, College Station, Texas. 11/16/18.

**The Metabolic Effects of Prolonged Sitting Can't Be Overcome by an Acute Bout of Exercise** School of Nursing; The University of Texas at Austin. Sponsored by St. David's CHPR, 3/30/2018

**Studio Startup. Power Cycle.** Lecture at the 'Innovation Center'. College of Engineering. University of Texas at Austin. Austin, Texas. 10/15/17.

**The Aerobic- Strength Alliance.** Lecture to a special conference hosted by the Stark Center at the University of Texas, honoring the book 'Taking Charge', by Clarence Bass. 9/27/13.

**Overtraining.** Lecture to strength and conditioning coaches and interns at University of Texas at Austin. Austin, Texas, 7/11/11 and also 7/16/12.

**In Service Workshop for Coaches: Training and Nutrition for High School Athletes.** Drippings Springs ISD, Texas. 1/17/05.

**Lecture for Dean's Distinguished Faculty Award.** College of Education. The University of Texas at Austin. 2/9/02.

**Sport Science and Nutrition for Children.** Grand Rounds Lecture. Brackenridge Hospital. Austin Texas. 2/19/01

**Diet and Exercise.** Invited Lecture for Department of Health and Kinesiology. Texas A&M University, College Station, Texas. 2/2/01.

**Interaction of Fat and Carbohydrate Metabolism during Exercise.** Invited Lecture. Dept. of Health and Kinesiology. Texas A&M University. 3/3/00.

**Physiology of Human Endurance.** McCraw Lecture Series. Dept. of Kinesiology and Health Education. The University of Texas at Austin. 2/25/00.

**Exercise and the Cardiovascular System.** American Heart Association Conference on Women's Health. Austin, TX. 2/1/00.

**Fat Metabolism during Exercise.** Invited Lecture for Department of Health and Kinesiology. Texas A&M University, College Station, Texas. 2/8/96.

**Carbohydrates and Athletic Performance.** Fourth Annual Sports Performance Symposium. Southwest Texas State University. San Marcos, Texas. 4/21/95.

**What Works? Enhancing Your Performance.** 1994 Motorola Marathon Fitness Symposium. Austin, Texas. 3/5/94.

**Carbohydrates and Exercise.** Austin Chapter of the American Dietetic Association. Austin, Texas. 9/21/91.

**The High-tech Components of Swim Training.** The First Annual Longhorn Swimming Clinic. Austin, Texas, 4/5/90.

**Carbohydrate Feeding and Performance.** REI Clinic. Austin, Texas, 3/1/90.

**The Physiological Adaptations to Running.** Seton Hospital School of Good Health. Austin, Texas, 2/25/89.

**Exercise and Cardiac Rehabilitation.** Presentation to the Mended Heart Association of Austin. Austin, Texas, 11/84.

**Cardiovascular Research.** American Heart Association, Texas Chapter. Presentation to Hays County Board of Directors. San Marcos, Texas, 4/84.

**Basic Biomedical Research.** American Heart Association, Texas Chapter. Presentation to Brown County Board of Directors. Brownwood, Texas, 3/84.

**Benefits of Exercise in Patients with Coronary Artery Disease.** Austin Program of Internal Medical Education. Austin, Texas, 11/83.

**Exercise Physiology and its Implications.** Fitness for Life Seminar. Austin, Texas, 7/83.

**Cardiovascular Fitness Evaluation.** Afternoon workshop presented to Austin Police Department. Austin, Texas, 6/83.

**Physiological Evaluation of Female Athletics.** Lecture presented to Intercollegiate Athletic Department for Women. Austin, Texas, 12/82.

**Exercise Physiology and Physical Therapy.** Arizona Physical Therapy Association's Annual Meeting. Flagstaff, Arizona, 11/81.

**Energy Production for Exercise.** Holistic Health Conference. The University of Arizona. Tucson, Arizona, 5/78.

**Exercise and Weight Control.** Community Hospital Symposium. Indianapolis, Indiana, 4/77.

### **SERVICES FOR PROFESSIONAL ORGANIZATIONS**

#### *American College of Sports Medicine*

- a. Past President of Texas Chapter, 1986-87
- b. Ambassador, 1984-1990
- c. Abstract reviewer
- d. Chaired scientific sessions
- e. Member of the Continuing Education Committee, 1986-88
- f. Position statement committee for "Exercise and Fluid Replacement", 1994-95

#### *The United States Army*

- a. Reviewer of research programs of "Nutritional Sustainment of Military Operational Health"; 10/2011
- b. Grant DOD U.S. Army and DARPA; 5/10/06-5/9/08; \$240,000
- c. Grant DOD U.S. Army (Co-PI; Total Grant \$2,069,060); 2/1/07- 1/31/08; \$464,662 (HPL)
- d. 8 trips to U.S. Army Research Institute of Environmental Medicine to lecture and consult. Natick MA

#### *The American Physiological Society*

- a. Environmental and Exercise Physiology Steering Committee Member, 1997-2000

#### *The National Academies of Sciences*

- a. Food and Nutrition Board: Committee on Optimization of Nutrient Composition of Military Rations, 1992

#### *National Institutes of Health*

- a. Office of Dietary Supplements Research. Member of organizing committee for conference on "Dietary Supplements for Physically Active Lifestyles", 1993

#### *National Institutes of Aging*

- a. Ad-hoc grant reviewer, 1984

#### *National Aeronautic and Space Administration*

- a. Member of a working group for the Extended Duration Orbitor, 1988-90
- b. Chairman, Cardiovascular Working Group, NASA Exercise Countermeasures Project Task Force. 1989-90
- c. Member of Discipline Implementation Team/Exercise Countermeasures Project. 1990.
- d. Member of Bed-Rest Countermeasures Research Group. 2006-2007
- e. NASA International Space Station Exercise Prescription Committee 2008-2010
- f. Grant reviewer for 'Research and Technology Development for Crew Health & Performance'. 2010
- g. Consultant for measuring maximal power and developing countermeasures 2010-2016
- h. Grant reviewer for 'Human Exploration Research Opportunities'. 2015

*United States Olympic Committee*

- a. Member of the scientific advisory committee and research committee, 1986-1988
- b. Consultant to the United States Swimming Federation 1983-1995
- c. Consultant to the United States Cycling Federation, 1984-1988

*International Olympic Committee*

- a. Committee for Biological Science; 3rd World Congress on Sports Science; 1995
- b. Keynote Lecturer; 5th World Congress on Sports Science; 1999
- c. North American Delegate. Sports Nutrition Working Group. International Olympic Committee
- d. Co-author of Position Statement on 'The role of dietary supplements in an athletes' diet'

*New Zealand Olympic Committee*

- a. Member of Sports Science/Medicine Advisory Board, 1994

*The Quaker Oats Company*

- a. Member of the Gatorade Sports Science Institute 1987-2007

*World Congress on Sports Nutrition*

- a. Member of International Assessment Committee, 1989

*San Antonio Spurs of the National Basketball Association (NBA)*

- a. Sport Nutritionist 2004-2009
- b. Consultation regarding maximal power and overtraining 2006-2012

*Chicago Blackhawks of the NHL*

- a. Consultation regarding maximal power and overtraining 2008-2010