

Christopher B. Scott, PhD

Professor

University of Southern Maine

37 College Ave.

Exercise, Health and Sport Sciences

Gorham, ME 04038

(207) 780-4566

- Aug 2002-
Present The **University of Southern Maine**, Gorham, ME. College of Science, Technology and Health. Professor (tenured) in the Department of Exercise Health and Sports Sciences. Teaching emphasis on Exercise Science in clinical and applied settings. Research focuses on anaerobic and aerobic energy costs of high-intensity strength, speed and power-related activity.
- Jan 1998-
Aug 2002 The **University of Wyoming**, Laramie, WY. Department of Zoology and Physiology. Teaching and research assistant in Biology and Physiology. Dissertation project investigated the re-modeling of the extracellular matrix within cardiovascular tissue after infarction.
- Sept 1995-
Dec 1997 The **Heart & Lung Group of Savannah**, Savannah, GA. Implementation of a physician based preventive medicine and rehabilitation program within the community. Research dedicated towards the diagnostic interpretation of energy expenditure.
- Nov 1993-
Aug 1995 The **Dallas Heart Group**, Dallas, TX. Exercise physiologist with a clinical cardiology practice. Research and application involved with determining cardiac, pulmonary, and skeletal muscle limitations to exercise.
- June 1989-
Sept 1993 **Cooper Institute for Aerobics Research**, Dallas, TX. Research associate responsible for the exercise physiology laboratory. Involved with all phases of data collection, interpretation, and publication in the area of clinical exercise physiology. Interaction with the public and the media. Testing of professional and elite athletes.
- July 1986-
Dec 1988 “Body Worry”, Grand Bahama Island, Bahamas. **Research editor** for the Body Worry Project, a syndicated column in over 90 nationwide periodicals and two books (Viking-Penguin Publ.) documenting an individuals experience with fitness, nutrition, and health related topics. Completed a cross-country promotional tour with television and radio experience.
- Dec 1985-
June 1986 **Ariel Human Performance Center**, Miami, FL. Exercise physiologist for preventive medicine center. Designed and implemented a complete Preventive Medicine program combining physiologic testing with in-house exercise programming. Facility was designed for public and athletes.

Education

University of Wyoming, January 1998 – August 2002

Doctor of Philosophy (Zoology & Physiology)

Teaching/ Research Assistant

Dissertation title: Remodeling of the extracellular matrix in heart and aorta post-myocardial infarction.

University of Arizona, September 1987 - December 1990

Master of Science (Exercise & Sports Sciences)

Teaching Assistant/ Scholarship

Thesis title: The maximally accumulated oxygen deficit as an indicator of anaerobic capacity.

United States Sports Academy, August 1984 - August 1985

Master of Sport Science (Fitness Management)

Scholarship

Springfield College, September 1980 - June 1984

Bachelor of Science (Health Fitness)

Cum Laude

Awards

USM CONHP Scholarship Support Award 2008 (\$2,500)

USM Faculty Senate Scholarship Award 2007

USM Faculty Technology Grant 2006 (\$2,400)

USM CONHP Scholarship Support Award 2005 (\$2,350)

USM Faculty Senate Research Grant 2004 (\$2,998)

USM Pilot CONHP Project Award 2003-2004 (\$2,366)

USM Faculty Technology Grant 2003 (\$2,295)

Met-Rx Thermogenesis of Feeding study 2003 (\$15,000)

Mentorships

50+ undergraduate research projects (2002 – present)

Memberships, Committees, Boards

Chair, Peer Review Committee (EHSS)	2013 – present
Chair, Exercise, Health and Sport Sciences	2009 – 2010
Co-Director, Thinking Matters Undergraduate Research Symposium	2006 - 2009
American Society of Exercise Physiologists Maine chapter President	2007 – present 2013 - 2014
Journal of the International Society of Sports Nutrition Review Board	2007 - present
Journal of Human Kinetics Review Board	2013 – present
Motricidade Section Editor	2013 – 2014
USM CONHP Peer Review Committee	2008 – 2009
USM Research Council	2006 – 2009
USM Institutional Review Board (IRB)	2003 – 2009

Classes taught

SPM 485 Senior Thesis I	SPM 486 Senior Thesis II
SPM 475 Exercise Physiology Practicum (Cardiac Rehabilitation)	SPM 431 Advanced Exercise Physiology
SPM 460 Clinical Exercise Physiology (ECG Interpretation)	SPM 435 Exercise Biochemistry
SPM 450 Exercise for Special Populations	SPM 495 Clinical Internship
SPM 398 Independent study	CON 321 Health Related Research
CON 322w Health Related Research (writing intensive)	
SPM 330 Physiology of Exercise	SPM 235 Lab Techniques Human Perf & Nutr
CON 219 Lifetime Fitness and Wellness	SPM 100 Intro. Exercise, Health & Sport Sciences

Mentored Undergraduate Student Publications

- Scott, C.B., Beliveau, C., Desmond, K. and E. Rollins. Total energy costs of 3 all-out Tabata routines: calisthenic, plyometric and resistance exercise **Eur J Human Movement** 37:49-55, 2016.
- Scott, C.B., Nelson, E., Martin, S. and B. Ligotti. Total energy costs of 3 Tabata-type calisthenic squat routines: Isometric, isotonic and jump. **Eur J Human Movement**. 35:34-40, 2015.
- Scott, C.B., Luchini, A., Knausenberger and A. Steitz. Total energy costs – aerobic and anaerobic, exercise and recovery - of five resistance exercises. **Central Eur J Sport Sci Med**. 8:53-59, 2014.
- Scott, C.B., M.P. Leary and A.J. Tenbraak. Energy expenditure characteristics of weight lifting: 2 sets to fatigue. **Appl Physiol Nutr Met**. 36:115-120, 2011.
- Scott, C.B., B. Leighton, K. Ahearn, and J. McManus. Bench press energy expenditure: muscular endurance and strength. **J Strength Cond Res**. 23:611-618, 2009
- Scott, C.B., A. Croteau, and T. Ravlo. Energy expenditure before, during and after the bench press. **J Strength Cond Res**. 23:611-618, 2009.
- Scott, C.B., B. Shaw and C. Leonard. Gender comparisons of aerobic and anaerobic energy expenditure for a 6-min slow O₂ component cycle test. **JEPonline**, 11(2):56-63, 2008.
- Scott, C.B., J. Fernandes and M. Lehman. Onset of the thermic effect of feeding (TEF): a randomized controlled trial. **J Int Soc Sports Nutr**. 4:24, 2007.
- Scott, C.B., N.D. Littlefield, J.D. Chason, M.P. Bunker and E.M. Asselin. Aerobic and anaerobic energy expenditure for brief equivalent bouts of cycling and running. **Nutr Metab.**, 3:1, 2006.
- Scott, C.B and R.L. Devore. Diet-Induced Thermogenesis: Variations Among Three Isocaloric Meal Replacement Shakes. **Int J Appl Basic Nutr Sci.**, 21:874-877, 2005.

USM Publications

- Scott, C.B. and V.M. Reis. Modeling the total energy costs of resistance exercise: a work in progress. **Cent Euro J Sports Sci Med.**, 14:5-12, 2016.

- Vilica-Alves, J., Freitas, M.N., Saavedra F.J., Scott, C.B., Reis, V.M., Simao, R. and Garrido, N. Comparison of oxygen uptake during and after the exertion of resistance exercise and exercises performed on ergometers, matched for intensity. **J Human Kinetics.**, 53:179-187, 2016.
- Reis, V.M., D.R. Oliveira, A.L. Carneiro, H.M. Fernandes and C.B. Scott. Inclusion of blood lactate O₂ equivalent in the VO₂ intensity regression at level and 10.5% grade running. **Braz J Phys Ed Sport** 30:255-261, 2016.
- Scott, C.B. and V.M. Reis. Steady state models provide an invalid estimate of intermittent resistance-exercise energy costs. **Eur J Human Movement.** 33:70-78, 2014.
- Scott, C.B. Intermittent resistance exercise: evolution from the steady state. **Cent Euro J Sports Sci Med.**, 6:85-91, 2014.
- Scott, C.B. Combustion, respiration and intermittent exercise: a theoretical perspective on oxygen uptake and energy expenditure. **Biology** 3:255-263, 2014.
- Aniceto, R.R., R.M. Ritti-Dias, C.B. Scott, F. F. Martens de Lima, T.M. Pessoa dos Prazeres and W.L. do Prado. Acute effects of different weight training methods on energy expenditure in trained men. **Rev Bras Med Esporte.** 19:181-185, 2013.
- Scott, C.B. and C. Fountaine. Estimating the costs of intermittent exercise. **J Human Kinetics.** 38:107-113, 2013.
- Scott, C.B. The energy costs of resistance training. **Proceedings of the 3rd International Symposium on Strength & Conditioning**, (ISBN: 978-989-704-142-6) 2013.
- Scott, C.B. The effect of time-under-tension and lifting cadence on aerobic, anaerobic and recovery energy expenditure: 3 submaximal sets. **Appl Physiol Nutr Metab**, 37:252-256, 2012.
- Scott, C.B. Glucose and fat oxidation: bomb calorimeter be damned. **Scientific World J**, 2012: (312463), 2012.
- Scott, C.B. Oxygen costs peak after resistance training sets: A rationale for the importance of recovery over exercise. **JEPonline**, 15:1-8, 2012.
- Scott, C.B. Quantifying the immediate recovery energy expenditure of resistance training. **J Strength Cond. Res.** 25:1159-1163, 2011.
- Scott C.B. and C. Earnest. Resistance exercise energy expenditure is greater with fatigue as compared to non-fatigue. **JEPonline**. Feb 2011.

- Scott, C.B. Excess post-exercise oxygen consumption. Encyclopedia of Exercise Medicine in Health and Disease. F.C. Mooren (Ed.), 2011. (invited contribution).
- Scott, C.B. *A Primer for the Exercise and Nutritional Sciences: Thermodynamics, Bioenergetics, Metabolism*. Humana Press, 2008.
- Scott, C.B. and Z.M. Djuricic. The oxidation of glucose: thermodynamic considerations of anaerobic and aerobic energy exchange. **JEPonline**, 11(4):34-43, 2008.
- Scott, C.B. Bioenergetics: Energy Exchange for the Sports Nutritionist (Chap. 1). In, **Essentials of Sports Nutrition and Supplements**. Ed., J. Antonio et al. (Humana Press, 2008).
- Scott, C.B. Metabolism. In: *Sports Nutrition Program.*, National Strength and Conditioning Association, Ed. (a 35-min PowerPoint presentation (including notes and references) for high school coaches, athletes and their parents, 2007).
- Scott, C.B. Estimating total energy expenditure for brief bouts of exercise with acute recovery. **Appl Physiol Nutr Metab.** 31:144-149, 2006.
- Scott, C.B. Contribution of blood lactate to the interpretation of total energy expenditure for weight lifting. **J Strength Cond Res.**, 20:21-28, 2006.
- Scott, C.B. Misconceptions about aerobic and anaerobic energy expenditure. **J Int Soc Sports Nutr.**, 2:32-37, 2005.
- Scott, C.B. Contributions of Anaerobic Energy Expenditure to Whole-body Thermogenesis. **Nutr Metab.**, 2:14, 2005.
- Scott, C.B and R.B. Kemp. Direct and indirect calorimetry of lactate oxidation: implications for whole-body energy expenditure. **J Sports Sci.** 23:15-19, 2005.
- McGowan, B., C.B. Scott, A. Mu, R. McCormick, D.P. Thomas and K.B. Margulies. Cardiac structural and molecular response to unloading. **Am J Physiol Heart Circ Physiol.**, 284: H2061-H2068, 2003.
- Scott, C.B. Anaerobic and aerobic energy expenditure for heavy to severe exercise and recovery. (Invited review) **Comm Theor Biol.**7:109-119, 2002.

Pre-USM Publications

- Velleman, S.G., R.J. McCormick, D. Ely, B.B. Jarrold, R.A. Patterson, C.B. Scott, H. Daneshvar and W.L. Bacon. Collagen characteristics and organization during the progression of cholesterol-induced atherosclerosis in Japanese quail. **Exp Biol Med.** 226:328-333, 2001.

- Scott, C.B. Energy expenditure of heavy to severe exercise and recovery. **J Theor Biol.** 207:293-297, 2000.
- Scott, C.B. Oxygen deficit and slow VO₂ component relationships between intermittent and continuous exercise. **J Sports Sci.** 17:921-926, 1999.
- Scott, C.B. Re-interpreting anaerobic metabolism: an argument for the application of both anaerobic glycolysis and excess post-exercise oxygen consumption (EPOC) as independent sources of energy expenditure. **Eur J Appl Physiol.** 77:200-205, 1998.
- Scott, C.B. and M. Bogdanffy. Aerobic and anaerobic energy expenditure during exhaustive ramp exercise. **Int J Sports Med.** 19:277-280, 1998.
- Scott, C.B. Interpreting energy expenditure for anaerobic exercise and recovery: an anaerobic hypothesis. **J Sport Med Phys Fit.** 37:18-23, 1997.
- Gordon, N.F., C.B. Scott, W.J. Wilkinson, A. Montouri and J.J. Duncan. Comparison of enalapril and atenolol in young, physically active men with essential hypertension: effects on exercise tolerance. **Amer J Cardiol.** 79:1065-1069, 1997.
- Gordon, N.F. and C.B. Scott. Comparison of single versus multiple lifestyle interventions: are the antihypertensive effects of exercise training and diet-induced weight loss additive?. **Amer J Cardiol.** 79:763-767, 1997.
- Gordon, N.F. and C.B. Scott. Risk stratification after myocardial infarction: CPX testing for exercise prescription in cardiac rehabilitation. In: **Disease Management with Gas Exchange.** Medgraphics Corp., St. Paul, MN, 1996.
- Gordon, N.F. and C.B. Scott. Exercise intensity prescription in cardiovascular disease: theoretical basis for anaerobic threshold determination. **J Cardiopul Rehab.** 15:193-196, 1995.
- Scott, C.B. Anaerobic metabolic influences on oxygen uptake behavior. **J Strength Cond Res.** 9:59-62, 1995.
- Scott, C.B. Blood pressure and exercise. **American College of Sports Medicine Certified Newsletter.** 3(2):1-5, 1993.
- Scott, C.B. Resting metabolic rate variability as influenced by mouthpiece and noseclip practice procedures. **J Burn Care and Rehab.** 14:573-577, 1993.
- Scott, C.B., N.F. Gordon, and J.J. Duncan. A calorie is a calorie is a calorie; or is it? **J Cardiopul Rehab.** 13:1-2, 1993.

- Kohl, H.W., N.F. Gordon, C.B. Scott, H. Vaandrager, and S. Blair. Musculoskeletal strength and serum lipid levels in men and women. **Med Sci Sports Exercise**. 24:1080-1087, 1992.
- Brill, P.A., C.B. Scott, and N.F. Gordon. Exercise and cardiovascular disease: a gender difference. In, *Exercise and Disease*. Eds., M. Eisinger and R.W. Watson. CRC Press Inc. 1992.
- Gordon, N.F., H.W. Kohl, C.B. Scott, L.W. Gibbons, and S.N. Blair. Reassessment of the guidelines for exercise testing: what alterations to current recommendations are required? **Sports Med**. 13:293-302, 1992.
- Gordon, N.F., J.J. Duncan, and C.B. Scott. Failure of exercise to reduce hypertension. **J Amer Med Assoc**. 267:1776-1777, 1992.
- Scott, C.B., R. Carpenter, A. Taylor, and N.F. Gordon. Effect of macronutrient composition of an energy-restrictive diet on maximal physical performance. **Med Sci Sports Exercise**. 24:814-818, 1992.
- Scott, C.B., F. Roby, T.G. Lohman, and J.C. Bunt. The maximally accumulated oxygen deficit as an indicator of anaerobic capacity. **Med Sci Sports Exercise**. 20:618-624, 1991.
- Gordon, N.F. and C.B. Scott. Hypertension and exercise. **Primary Care**. 18:683-694, 1991.
- Duncan, J.J., N.F. Gordon, and C.B. Scott. Women walking for health and fitness: how much is enough? **J Amer Med Assoc**. 266:3295-3299, 1991.
- Gordon, N.F. and C.B. Scott. The role of exercise in the primary and secondary prevention of coronary artery disease. **Clin Sports Med**. 10:87-103, 1990.
- Gordon, N.F., C.B. Scott, W.J. Wilkinson, J.J. Duncan and S. Blair. Exercise and borderline hypertension: recommendations. **Sports Med**. 10:390-404, 1990.
- Cooper, K.H. and C.B. Scott. Healthy heart guide. **Active American**, Summer 1990.

Presentations (as Professor)

- Scott, C.B. Maximizing the energy costs of exercise. USM Planetarium, January 2016.
- Scott, C.B. Intermittent resistance exercise: estimating energy costs. New England American College of Sports Medicine, Providence RI, October 2016.
- Scott, C.B. Intermittent exercise increases energy costs. Sino-American Conference, USM, April 2015.

Scott, C.B. Intermittent exercise increases total energy costs. USM Lightning talks. April 2015.

Scott, C.B. Resistance exercise energy costs. 1st International Congress of Interdisciplinary Health, Sport and Pedagogy of Movement (SYNERGY), April 2014, Joao Pessoa, Brazil.

Scott, C.B. Resistance exercise energy costs. 7th Simposio de actualization (National Strength and Conditioning Association, Spain), December 2014. Madrid, Spain.

Scott, C.B. The energy costs of resistance training. 3rd *International Symposium Strength & Conditioning*, July 2013, Vila Real, Portugal.

Scott, C.B. and J. Hutchins. Thermic effect of feeding: cold and room temperature protein drink. *International Society of Sports Nutrition*, June 2012, Clearwater FL.

Scott, C.B. The energy costs of resistance exercise. 4th Simposio de actualization (National Strength and Conditioning Association, Spain), December 2011. Madrid, Spain.

Scott, C.B. and M. Leary. EPOC characteristics after resistance training. *American College of Sports Medicine*, June 2011. Denver, CO.

Fernandes, J. and C.B. Scott. Thermic effect of feeding: orange juice vs. protein drink (240 kcal). *International Society of Sports Nutrition*. July 2010. Clearwater, FL.

Scott, C.B. and C. Leonard. Gender differences in aerobic and anaerobic energy expenditure during a 6-min intense steady-state bicycle test. *International Society of Sports Nutrition*. June 2006. Las Vegas, NV.

Scott, C.B. A different view of bioenergetics – misconceptions about anaerobic energy expenditure. *International Society of Sports Nutrition*. June 2005. New Orleans, LA.

Scott, C.B. Interpreting anaerobic and total energy expenditure for brief non-exhaustive exercise and recovery. *American College of Sports Medicine*, May 2004. Indianapolis, IN.

Scott, C.B. and R.B. Kemp. Energy expenditure measurement requires an anaerobic and EPOC component. *American College of Sports Medicine*, May 2003. San Francisco, CA.

Presentations (pre-Professor)

Scott, C.B. Oxygen deficit and slow VO₂ component relationships between intermittent and continuous exercise. *Midwest Regional Chapter of the American College of Sports Medicine*, March 1999. Frisco, CO.

Scott, C.B. Modeling anaerobic energy expenditure. *Midwest Animal Science Conference*. Univ. of Colorado, Boulder, CO. May 2, 1998.

Bogdanffy, G.M. and C.B. Scott. Aerobic and anaerobic energy expenditure during cardiopulmonary exercise testing. *American College of Sports Medicine*, 1996. Cincinnati, OH.

Gordon, N.F. and C.B. Scott. Are the blood pressure lowering effects of exercise training and dietary modification additive? *American College of Cardiology*, 1995. Orlando, FL.

Scott, C.B. and G.M. Bogdanffy. Quantifying the bioenergetics of cardiopulmonary ramp-type stress testing. *American College of Sports Medicine*, 1995. Minneapolis, MN.

Scott, C.B., M.W. Hebert, and N.F. Gordon. Energy expenditure at the same level of perceived exertion: level versus incline treadmill walking. *American College of Sports Medicine*, 1993. Seattle, WA.

Scott, C.B. Continuous versus intermittent work: a quantitative approach to energy expenditure. *The American Physiological Society, Integrative Biology of Exercise*. 1992. Colorado Springs, CO.

Scott, C.B., N.F. Gordon, H.W. Kohl, H. Vaandrager, and S.N. Blair. Musculoskeletal fitness and flexibility in an adult population. *World Congress on Sport for All*, 1990. Tampere, Finland.

Scott, C.B., F.B. Roby, T.G. Lohman, J.C. Bunt, D.W. Murray, and F.L. Harvey. Maximally accumulated oxygen deficit as an indicator of anaerobic capacity. *South Western Chapter of the American College of Sports Medicine*, 1989. San Diego, CA.