

THOMAS JACKSON BARSTOW

CURRICULUM VITA

(10/31/06)

ADDRESS (Work): Department of Kinesiology **Telephone:** (785) 532-0712
 1A Natatorium
 Kansas State University
 Manhattan, KS 66506-0302

CITIZENSHIP: USA

EDUCATION: B.S. (with Honors) in Nutrition, University of California, Davis, 1974

M.A. in Physical Education, University of California, Davis, 1978. Thesis: "A Comparison of the Kinetics of Oxygen Uptake Between Diabetics and Nondiabetics."

Ph.D. in Physiology (Major cardiorespiratory physiology, minor nutrition), University of California, Davis, 1985. Dissertation: "Dynamics of Pulmonary Gas Exchange During Unsteady States of Exercise."

PROFESSIONAL EXPERIENCE:

2002- Head, Dept. Kinesiology, Kansas State University, Manhattan, KS
 2002- Visiting Professor, The Manchester Metropolitan University, Manchester, UK
 2000- Professor, Dept. Kinesiology, Kansas State University, Manhattan, KS
 1996- Associate Professor, Dept. Kinesiology, Kansas State University, Manhattan, KS
 1996 Adjunct Associate Professor, Dept. Medicine, Harbor-UCLA Medical Center, Torrance, CA.
 1993-1996 Research Physiologist, Dept. Physical Medicine Rehab., V. A. Wadsworth Medical Center, Los Angeles, CA.
 1989-1996 Adjunct Assistant Professor, Dept. Medicine, Harbor-UCLA Medical Center, Torrance, CA
 1988-1996 Director, Respiratory Physiology Research Laboratory, Harbor-UCLA Medical Center, Torrance, CA
 1988-1989 Adjunct Assistant Professor, Dept. Pediatrics, Harbor-UCLA Medical Center, Torrance, CA
 1986-1989 Postdoctoral Research Fellow in Nutrition, Dept. Pediatrics, and Division of Respiratory Physiology and Medicine, Dept. Medicine, Harbor-UCLA Med. Ctr.
 1984-1985 Associate in Physiology, Dept. Animal Physiology, U.C. Davis
 1979-1980 Associate in Physiology, Dept. Animal Physiology, U.C. Davis
 1977-1978 Postgraduate Researcher, Dept. Cardiology, School of Medicine, U.C. Davis
 1976-1977 Director, Adult Fitness Program, Dept. Physical Education, U.C. Davis
 1975-1976 Nutritionist and Exercise Physiologist, National Athletic Health Institute, Inglewood, California

CERTIFICATION: Exercise Specialist, American College of Sports Medicine, 1978.

PROFESSIONAL ACTIVITIES:

Professional memberships:

- 1977- American College of Sports Medicine
- 1986- American Heart Association, Cardiopulmonary Council
- 1989- American Physiological Society

Editorial/Reviewer, Scientific Journals:

- 1989- Reviewer, Amer. Rev. Respir. Dis.
- Reviewer, J. Appl. Physiol.
- 1990- Reviewer, Eur. J. Appl. Physiol.
- Reviewer, Am. J. Physiol.
- Reviewer, Med. Sci. Sports Exerc.
- 1991- Reviewer, Modeling Forum, Am. J. Physiol.
- 1994- Reviewer, J. Physiol. (London)
- Reviewer, Anal. Biochem.
- Reviewer, Can. J. Appl. Physiol.
- 1995 Reviewer, Am. J. Cardiol.
- 1996 Reviewer, J. Auton. Nervous System
- 1999-2002 Editorial Board, Eur. J. Applied Physiology
- 2000- Editorial Board, J. Applied Physiology
- 2000- Editorial Board, Med. Sci. Sports Exerc.
- 2005 Reviewer, Clin. Physiol. Func. Imaging

Reviewer, Funding Agencies:

- 1991 Research proposal, Ministry of Science and Technology, Republic of Slovenia
- 1997 Large Project Intramural Grant Program, Allegheny University of the Health Sciences, PA
- 1999 VA/DOD Physical Performance and Combat Readiness, Collaborative Research Program
- 1999 NIH Special Emphasis Panel
- 2000 "
- 2004 "
- 2006 Natural Sciences and Engineering Research Council of Canada

Consulting service:

- 1987-88 Computer program design, Dept. Phys. Ed., U.C. Davis.

Community service:

- 4/88-4/95 Science Fair judge, First Lutheran School, Torrance, CA
- 9/87-6/90 7th grade Confirmation Sunday School class, First Lutheran Church, Torrance, CA
- 4/90-6/90 Coach, Little League baseball
- 7/90-6/93 Chair, Staff Support Committee, First Lutheran Church
- 10/90-9/91 Senior Pastor Search Committee, First Lutheran Church
- 1/91-3/91 Coach, Torrance Recreation basketball program
- 9/92-12/92 Assistant coach, AYSO soccer Division 5
- 1/94-9/95 Senior Pastor Search Committee, First Lutheran Church
- 9/98-6/99 member, Stewardship Committee, Peace Lutheran Church, Manhattan KS
- 9/97- Worship Assistant, Peace Lutheran Church, Manhattan, KS
- 4/04- Personnel Committee, Peace Lutheran Church, Manhattan, KS

HONORS:	1981	Graduate Student Research Award, \$500, U.C. Davis
	1981-2	NIH Training Grant, "Integrative Functions of Higher Organisms", Dept. Human Physiology, School of Medicine, U.C. Davis
	1982-3	Jastro-Shields Graduate Fellowship, U.C. Davis
	1982	Graduate Student Travel Award, \$531, U.C. Davis
	1983-4	Graduate Student Research Award, \$1325, U.C. Davis
	1983-4	U.C. Regent's Fellowship in Physiology, U.C. Davis
	1986-9	NIH Training Fellowship in Nutrition and Metabolism, Dept. Pediatrics, Harbor-UCLA Medical Center
	1989	Finalist, Ph.D. Research Prize Competition, Harbor-UCLA, \$150.
	1994	Fellow, American College of Sports Medicine
	2001	Doctoral Student Research Award (Barbara Lutjemeier), Central States chapter, American College of Sports Medicine
	2005	Making a Difference Award, Women in Science and Engineering, KSU.
	2006	First Place, Developing Scholars Program research presentation, KSU, Sammy Ornelas. Mentor.

RESEARCH GRANTS AND FELLOWSHIPS:

3/86-2/89	NIH Postdoctoral Training Fellowship in Nutrition and Metabolism, Dept. Pediatrics, Harbor-UCLA Medical Center
7/89-6/90	Am. Heart Assoc., Greater Los Angeles Affiliate, \$20,000 (PI) "Mechanisms of Blood Glucose Regulation during Exercise."
6/89-5/91	Ciba-Geigy Corp., \$461,689. (co-invest.) "Effect of Benezapril on Congestive Heart Failure during Exercise"
12/89-11/91	Ciba-Geigy, \$260,970. (co-invest.) "Exercise Testing in Coronary Artery Disease".
7/89-6/90	Arthritis Found., \$50,000. (co-invest.) "Exercise, Activity and Pain in Patients with PFS".
6/90-5/91	Harbor Collegium, \$10,000. (PI) "Oxygen Delivery during Exercise in Congestive Heart Failure".
4/92-3/94	NIH-NICHD, \$261,915 (co-invest.) "Integrated Anabolic Mechanisms of Exercise, Diet and Puberty."
7/93-6/96	NIH-NIAID, \$451,072 (co-invest.) "Exercise Intolerance in Chronic Fatigue Syndrome."
4/93-4/94	REI Research Grant, Harbor-UCLA Medical Center, \$4000 (PI). "Muscle Fiber Composition and Exercise Energetics."
4/95-3/00	NIH-NICHD, \$1,798,619 (co-invest) "Mechanisms of Exercise Modulation of Human Growth."
9/95-8/98	VA B2002-RC, \$400,000 (co-invest) "Functional Electrical Stimulation on Spinal Cord Injured Patients: Effects on Muscle Blood Flow and Metabolism."

- 7/96-8/01 NIH-NHLBI \$641,167 (PI) "Control of Muscle PCr, H⁺ and Vo₂ Kinetics."
- 7/98-6/00 Fellowship in Pulmonary Medicine, Parker B. Francis Family Foundation \$72,000 (sponsor for Craig Harms, Ph.D.)
- 7/99-6/01 Am. Heart Assoc. \$69,050 (co-invest; CA Harms, PI) "Mechanisms of Interaction Between Hyperpnea and Cardiovascular Function"
- 9/99-8/01 Fellowship, Medical Research Council of Canada \$66,000 (sponsor for Barry Scheuermann, Ph.D.)
- 7/01-6/04 Am. Heart Assoc. (Heartland Affiliate) \$110,000 (PI) "Model of Muscle Blood Flow Incorporating Oscillations from Muscle Pump and Impedance to Flow"

STUDENT RESEARCH ADVISING (Major Professor MP)

Post-doctoral Fellows

Andrew Jones, 1993-94
 Barry Scheuermann, 1997-2001
 Akira Miura, 2000-01

Doctoral Students

Casey Kindig, 2001
 Timothy Bauer, 1999-2005 (MP)
 Brad Behnke, 2000-2004
 Barbara Lutjemeier, 2001- (MP)
 Dana Townsend, 2001- (MP)
 Leonardo Ferreira, 2003- 2006 (MP)

Master's Students

Scott Gadeken, report, 1997 (MP)	Christa Eskridge, report, 1997
Casey Kindig, thesis, 1997	Lori Krueger, report, 1998 (MP)
Heather Vidrickson, report, 1998 (MP)	Christine Jones, report, 1998
Christian Larson, report, 1998	Melanie Mason, report, 1998
Brian Hoelting, thesis, 1997-99 (MP)	Mark Oberkrom, exam, 1999
Tim Benson, thesis, 1999	Jamie Stark, thesis, 1999
Heather Brady, thesis, 2000	Joyce McConnel, exam, 2000
Bradley Behnke, thesis, 2000	Kristen Meadows, thesis, 2000 (MP)
Barbara Lutjemeier, thesis, 2001 (MP)	Emily Diederich, thesis, 2001
Jill Murphy, thesis, 2001	Kim Davis, examination, 2001 (MP)
Maria DeBoer, thesis, 2002 (MP)	Patricia Marteney, thesis, 2002 (MP)
Serina McEntire, thesis, 2002	John Russell, thesis, 2002
Tyler Barker, thesis, 2003 (MP)	Allison Harper, thesis, 2005 (MP)

Undergraduate Research Supervision

Jill Murphy, 1998
 Lindsay Mallory, McNair Scholar, 1997-99
 Tyson McBride, 1999-2002
 Matthew Stanley, Howard Hughes Medical Institute Undergraduate Research Scholar, 1999-2002

Adrienne Williams, KSU Developing Scholar Program 2001-2002
Angela Nichols, McNair Summer Scholar, 2004
Suzanne Stebbens, Howard Hughes Medical Institute Undergraduate Research Scholar, 2004-6
Sammy Ornelas, Bridges Scholar, Developing Scholar, McNair Scholar

Extra-KSU External Examiner

Maureen MacDonald, University of Waterloo, Ontario, Canada, Dissertation, 1998
Glen Wadley, Deakin University, Geelong, Australia, Master's Thesis, 1999
Christopher Bell, University of Western Ontario, Ontario, Canada, Dissertation, 2000
Katrien Koppo, University of Gent, Belgium, Dissertation, 2002
Jamie Pringle, Manchester Metropolitan University, UK, Dissertation, 2002

INVITED LECTURES AND PRESENTATIONS:

"Changing lifestyles: Focus on nutrition and weight control." Sports Medicine Seminar, Postgraduate Division, University of Southern California, 11/75.

"Body composition and fitness in the exceptional child." Symposium on the Exceptional Child, Los Angeles, CA., 11/75.

"Nutrition and athletic performance." Sports Medicine Seminar, Orange County Podiatric Association, Los Angeles, CA., 3/76.

"Preventative health measures: The do's and don'ts of dying on the job." 10th Annual Southern California Personnel Management Association Relations Workshop, Anaheim, CA., 3/76.

"Nutrition and athletic performance," and "Preseason conditioning and heat adaptation." Sports Medicine Workshop for Coaches, Trainers, and Physicians, Kern High School District, Fresno, CA., 4/76.

"Nutrition and the professional athlete." Los Angeles Lakers professional basketball team, Los Angeles, CA., 4/76.

"Coronary heart disease." Kiwanis International, Davis, CA chapter, 11/76.

"Exercise and weight control." SCALEDOWN workshops in Sacramento and Modesto, CA., 1/77-5/77.

"The effects of nutrition on performance in track athletes." Coaches Clinic, American River College, Sacramento, CA., 3/77.

"Nutrition and wrestling." High school wrestling camp, U.C. Davis, 8/77.

"Circulatory determinants of pulmonary gas exchange." Division of Respiratory Physiology and Medicine, Harbor-UCLA Medical Center, 11/84.

"Measurement of pulmonary gas exchange with each breath." Metabolic Research Group, U.C. Davis, 5/85.

"Changes in natural enrichment of CO₂ with moderate exercise." Southern California Pulmonary Research Conference, 1/86.

"Lactate metabolism during exercise." Res. Seminar in Nutrition, Harbor-UCLA Medical Center, 4/86.

"Carbon dioxide transport." Principles of Respiratory Physiology Lecture Series, Division of Respiratory Physiology and Medicine, Harbor-UCLA Medical Center, 9/86.

"Changes in natural enrichment ($^{13}\text{C}/^{12}\text{C}$) of breath CO_2 due to hypoxia and/or exercise." Research Seminar in Nutrition, Harbor-UCLA Medical Center, 4/87.

"Glucose utilization during exercise." Graduate Group in Physiology, U.C. Davis, 4/89

"Calculation of pulmonary gas exchange." Pulmonary Fellows Conference, Division of Respiratory Critical Care Physiology and Medicine, Harbor-UCLA Medical Center, 7/89

"Calibration of laboratory gas exchange systems." Pulmonary Fellows Conference, Division of Respiratory Critical Care Physiology and Medicine, Harbor- UCLA Medical Center, 7/89

"Control of oxidative metabolism during exercise." Division of Respiratory Critical Care Physiology Medicine, Harbor-UCLA Medical Center, 7/89

"Diffusion and convection of respiratory gases." Principles of Respiratory Physiology Lecture Series, Division of Respiratory Physiology and Medicine, Harbor-UCLA Medical Center, 10/89

"Central rhythm generation and central chemoreception." Principles of Respiratory Physiology Lecture Series, Division of Respiratory Critical Care Physiology and Medicine, Harbor-UCLA Medical Center, 11/89

"Principles of thoracic mechanics." UC Riverside Medical School 260, Pathophysiology, Harbor-UCLA Medical Center, 11/89-95.

"Dynamics of muscle and pulmonary oxygen uptake during exercise." Department of Anatomy and Physiology, Cal. State Univ. Long Beach, 11/90

"Does lactate production spare oxygen uptake kinetics?" Pulmonary Physiology Research Conference, Division of Respiratory Critical Care Physiology and Medicine, Harbor-UCLA Medical Center, 3/91

"Review of Exercise Physiology." Exercise and Disability, Rehabilitation Medicine Service, VA Medical Center, West Los Angeles, 5/93.

"Muscle Oxygenation during Moderate and Heavy Exercise Measured with Near-InfraRed Spectroscopy." Research Seminar Series, Divisions of Pulmonary, Cardiology and Infectious Diseases, Harbor-UCLA Medical Center, 7/93.

"Models of Respiratory Control: Evidence from in vivo studies in humans using ^{31}P magnetic resonance spectroscopy." Research Seminar Series, Divisions of Pulmonary, Cardiology and Infectious Diseases, Harbor-UCLA Medical Center, 11/93.

"Balance Between Muscle Oxygen Extraction and O_2 Delivery. Studies with Near Infrared Spectroscopy." Research Seminar Series, Harbor-UCLA Medical Center, 11/94.

A Practicum: Cardiopulmonary Exercise Testing. Gunma Prefectural Cardiovascular Center, Maebashi, Japan. Lectures included: "Validation of Gas Exchange Measurements", "Exercise Testing Protocols and

Preparation of Patient", and "Physiological Basis of Exercise Training." 5/95.

"Oxygen Uptake Kinetics During Heavy Exercise: Methodology and Physiological Implications." Third International Congress on Physiological Anthropology, Nara, Japan, 9/96.

"Role of Muscle Heterogeneity in Energetics of Exercise". Department of Exercise Science and Physiology, Hiroshima Women's University, Hiroshima, 9/96.

"Muscle Fiber Type Influences Cardiorespiratory Responses to Exercise." Central States Chapter, ACSM, 1997 Annual Meeting, Kansas City, 10/97.

"Studies on the Kinetic Coupling of Cardiorespiratory Adjustments to Cellular Respiration During Exercise." 3rd Annual Congress of the European College of Sport Science, Manchester, UK, 7/98.

"Influence of Muscle Fiber Type on Cardiopulmonary Responses during Heavy Exercise." Annual Meeting of the Biomedical Engineering Society, Cleveland, 10/98.

"Assessment of Training Adaptations with FES in Spinal Cord Injured Patients." Annual Meeting of the Biomedical Engineering Society, Cleveland, 10/98.

"Intensite de l'Exercice Caracterisee par la Cinetique de Debit de Prelevement d'Oxygene." Research Seminar series on the Physiology of Muscular Exercise and in Sports Medicine, Universite Pierre et Marie Curie Paris VI, France, 5/99.

"Role of Fitness and Muscle Fiber Type Heterogeneity on the $\dot{V}O_2$ Cost of Exercise." Seminar Series, Department of Exercise Science, U. California-Davis, 6/99.

"Role of Phosphorylation State in Control of Cellular Respiration." SouthWest-ACSM, San Jose, CA, 11/99.

"Are Children Better Biological Machines than Adults? Power and Capacity" ACSM, Baltimore 6/01.

"Symposium honoring the Work of Paul A. Mole", SouthWest ACSM, Salt Lake City, UT, 11/01

"Current Approaches to Measuring Muscle Blood Flow in Humans", Central States ACSM, Kansas City, MO, 11/02.

"Modeling Oxygen Uptake Kinetics", 8th Annual Congress of the European College of Sport Sciences, Salzburg, Austria, 7/04.

"Muscle contraction-blood flow interactions during exercise." Keynote speaker, Graduate Research Symposium, Dept. Kinesiology, Univ. Toledo, 4/05.

"Oxygen Flux from Capillary to Mitochondria: Integration of Metabolic and Cardiovascular Control", symposium organizer, ACSM, Denver, 6/06.

"Hemoglobin desaturation and capillary blood flow dynamics in humans during exercise." ACSM, Denver, 6/06.

"Coupling of microvascular O₂ delivery and Control of Oxidative Phosphorylation." ACSM Conference, Integrative Physiology of Exercise." Indianapolis, 9/06.

“Consequences of Muscle Contraction on Control of Circulation & Microvascular Gas Exchange.” Noll Laboratory Research Seminar, Penn. State University, 10/06.

PUBLICATIONS:

RESEARCH PAPERS, PEER REVIEWED

1. Wilmore, J.H., R.B. Parr, P. Ward, P.A. Vodak, T.J. Barstow, T.V. Pipes, G.Grimditch, and P. Leslie. Energy cost of circuit weight training. *Med. Sci. Sports* 10:75-78, 1978.
2. Wilmore, J.H., R.B. Parr, R.N. Girandola, P. Ward, P.A. Ward, P.A. Vodak, T.J. Barstow, T.V. Pipes, G.T. Romero, and P. Leslie. Physiological alterations consequent to circuit weight training. *Med. Sci. Sports* 10:79-84, 1978.
3. Mole', P.A., R.L. Coulson, J.R. Caton, B.G. Nichols and T.J. Barstow. In vivo ³¹P NMR in human muscle: Transient patterns with exercise. *J. Appl. Physiol.:Respirat. Environ. Exer. Physiol.* 59:101-104, 1985.
4. Tyler, W.S., N.K. Tyler, G.A. Last, T.J. Barstow, D.J. Magliano, and D.M. Hinds. Effect of ozone on lung and somatic growth. Pair-Fed rats after ozone exposure and recovery periods. *Toxicology* 46:1- 20, 1987.
5. Barstow, T.J. and P.A. Mole'. Simulation of pulmonary oxygen uptake during exercise in humans. *J. Appl. Physiol.* 63:2253-2261, 1987.
6. Tyler, W.S., N.K. Tyler, J.A. Last, M.J. Gillespie, and T.J. Barstow. Comparison of daily and seasonal exposures of young monkeys to ozone. *Toxicology* 50:131-144, 1988.
7. Barstow, T.J., D.M. Cooper, S. Epstein, and K. Wasserman. Changes in breath ¹³CO₂/¹²CO₂ consequent to exercise and hypoxia. *J. Appl. Physiol.* 66:936-942, 1989.
8. Springer, C., T.J. Barstow, and D.M. Cooper. Effect of hypoxia on ventilatory control during exercise in children and adults. *Pediatr. Res.* 25:285-290, 1989.
9. Cooper, D.M., T.J. Barstow, A. Bergner, and W-N.P. Lee. Blood glucose turnover during high and low intensity exercise. *Am. J. Physiol.* 257 (Endocrin. Metab. 20):E405-E412, 1989.
10. Casaburi, R., T.J. Barstow, and K. Wasserman. Influence of work rate on ventilatory and gas exchange kinetics. *J. Appl. Physiol.* 67:547- 555, 1989.
11. Barstow, T.J., N. Lamarra and B.J. Whipp. Modulation of muscle and pulmonary oxygen uptakes by circulatory dynamics. *J. Appl. Physiol.* 68:979-989, 1990.
12. Cooper, D.M., J. Poage, T.J. Barstow, and C. Springer. Are obese children truly unfit? Minimizing the confounding effect of body size on the exercise response. *J. Pediatr.* 116:223-230, 1990.
13. Barstow, T.J., D.M. Cooper, E. Sobel, E.M. Landaw and S. Epstein. Influence of increased metabolic rate on [¹³C]bicarbonate washout kinetics. *Am. J. Physiol. (Regulatory, Integrative Comp Physiol.* 28):R163-R171, 1990.
14. Armon, Y., D.M. Cooper, C. Springer, T.J. Barstow, H. Rahimizadeh, E. Landaw, and S. Epstein. Oral

[¹³C]bicarbonate measurement of CO₂ stores and dynamics in children and adults. *J. Appl. Physiol.* 69:1754-1760, 1990.

15. Springer, C.S., T.J. Barstow, K. Wasserman and D.M. Cooper. Oxygen uptake and heart rate responses during hypoxic exercise in children and adults. *Med. Sci. Sports Exerc.* 23:71-79, 1991.
16. Armon, Y., D.M. Cooper, R. Flores, S. Zanconato and T.J. Barstow. Oxygen uptake dynamics during high-intensity exercise in children and adults. *J. Appl. Physiol.* 70:841-848, 1991.
17. De Cort, S.C., J.A. Innes, T.J. Barstow, and A. Guz. Cardiac output, oxygen consumption and arteriovenous oxygen difference following a sudden rise in exercise level in man. *J. Physiol. (London)*. 441:501-512, 1991.
18. Barstow, T.J. and P.A. Mole'. Linear and nonlinear characteristics of oxygen uptake kinetics during heavy exercise. *J. Appl. Physiol.* 71(6):2099-2106, 1991.
19. Barstow, T.J., E.M. Landaw, C.S. Springer and D.M. Cooper. Increase in bicarbonate stores with exercise. *Respir. Physiol.* 87:231-242, 1992.
20. Casaburi, R., T.J. Barstow, T. Robinson and K. Wasserman. Dynamic and steady-state ventilatory and gas exchange responses to arm exercise. *Med. Sci. Sports Exercise* 24:1365-1374, 1992.
21. Zanconato, S., D.M. Cooper, T.J. Barstow and E. Landaw. ¹³CO₂ washout dynamics during intermittent exercise in children and adults. *J. Appl. Physiol.* 73:2476-2482, 1992.
22. Zanconato, S., S.B. Buchthal, T.J. Barstow and D.M. Cooper. ³¹P Magnetic resonance spectroscopy of leg muscle metabolism during exercise in children and adults. *J. Appl. Physiol.* 74:2214-2218, 1993.
23. Barstow, T.J., R. Casaburi and K. Wasserman. Oxygen uptake kinetics and the O₂ deficit as related to exercise intensity and blood lactate. *J. Appl. Physiol.* 75:755-762, 1993.
24. Zhang, J.J., K. Wasserman, K.E. Sietsema, T.J. Barstow, G. Mizumoto and C.S. Sullivan. O₂ uptake kinetics in response to exercise: A measure of tissue anaerobiosis in heart failure. *Chest* 103:735-741, 1993.
25. Barstow, T.J., S.B. Buchthal, S. Zanconato, and D.M. Cooper. Muscle energetics and pulmonary oxygen uptake kinetics during moderate exercise. *J. Appl. Physiol.* 77:1742-1749, 1994.
26. Barstow, T.J., S.B. Buchthal, S. Zanconato, and D.M. Cooper. Changes in potential controllers of human skeletal muscle respiration during incremental calf exercise. *J. Appl. Physiol.* 77:2169-2176, 1994.
27. J. Porszasz, T.J. Barstow, and K. Wasserman. Evaluation of a pitot tube flowmeter for measuring ventilation during exercise. *J. Appl. Physiol.* 77(6):2659-2665, 1994.
28. Belardinelli, R., T.J. Barstow, J. Porszasz and K. Wasserman. Changes in skeletal muscle oxygenation during incremental exercise measured with near infrared spectroscopy. *Eur. J. Appl. Physiol.* 70:487-492, 1995.
29. Belardinelli, R., T.J. Barstow, J. Porszasz and K. Wasserman. Skeletal muscle oxygenation during constant work rate exercise. *Med. Sci. Sports Exerc.* 27:512-519, 1995.
30. Bailey, R.R., T.J. Barstow, and D.M. Cooper. The level and tempo of children's physical activities: an observational study. *Med. Sci. Sports Exerc.* 27:1033-1041, 1995.

31. Barstow, T.J., A.M.E. Scremin, D.L. Mutton, C.F. Kunkel and T.G. Cagle. Gas exchange kinetics during functional electrical stimulation in subjects with spinal cord injury. *Med. Sci. Sports Exerc.* 27:1284-1291, 1995.
32. Belardinelli, R., D. Georgiou and T.J. Barstow. Near infrared spectroscopy and changes in skeletal muscle oxygenation during incremental exercise in chronic heart failure: A comparison with healthy subjects. *Giornale Italiano di Cardiologia* 25:715-724, 1995.
33. Belardinelli, R., D. Georgiou, V. Scocco, T.J. Barstow, and A. Purcaro. Low-intensity exercise training in patients with chronic heart failure. *J. Am. Coll. Cardiol.* 26:975-982, 1995
34. Wang, C., D.R. Eyre, R. Clark, D. Kleinberg, C. Newman, A. Iranmanesh, J. Veldhuis, R.E. Dudley, N. Berman, T. Davidson, T.J. Barstow, R. Sinow, G. Alexander and R.S. Swerdloff. Sublingual testosterone replacement improves muscle mass and strength, decreases bone resorption and increases bone formation markers in hypogonadal men--A Clinical Research Center study. *J. Clin. Endocrinol. Metab.* 81:3654-3662, 1996.
35. Barstow, T.J., A.M.E. Scremin, D.L. Mutton, C.F. Kunkel, T.G. Cagle and B.J. Whipp. Changes in gas exchange kinetics with training in patients with spinal cord injury. *Med. Sci. Sports Exerc.* 28:1221-1228, 1996.
36. Barstow, T.J., A.M. Jones, P.H. Nguyen and R. Casaburi. Influence of muscle fiber type and pedal frequency on oxygen uptake kinetics of heavy exercise. *J. Appl. Physiol.* 81:1642-1650, 1996.
37. Engelen, M., J. Porszasz, M. Riley, K. Wasserman, K. Maehara and T.J. Barstow. Effects of hypoxic hypoxia on O₂ uptake and heart rate kinetics during heavy exercise. *J. Appl. Physiol.* 81:2500-2508, 1996.
38. Eliakim, A., T.J. Barstow, J.A. Brasel, H. Ajje, W.-N.L. Lee, R. Renslo, N. Berman and D.M. Cooper. Effect of exercise training on energy expenditure, muscle volume, and maximal oxygen uptake in adolescent females. *J. Pediatr.* 129:537-543, 1996.
39. Eliakim, A., J.A. Brasel, S. Mohan, T.J. Barstow, N. Berman and D.M. Cooper. Physical fitness, endurance training, and the growth hormone-insulin-like growth factor I system in adolescent females. *J. Clin. Endocrinol. Metab.* 81:3986-3992, 1996.
40. Maehara, K., M. Riley, P. Galasetti, T.J. Barstow and K. Wasserman. Effect of hypoxia and carbon monoxide on muscle oxygenation during exercise. *Am. J. Respir. Crit. Care Med.* 155:229-235, 1997.
41. Riley, M., K. Maehara, J. Porszasz, M.P.K.J. Engelen, T.J. Barstow, H. Tanaka, and K. Wasserman. Association between the anaerobic threshold and the break-point in the double product/work rate relationship. *Eur. J. Appl. Physiol.* 75:14-21, 1997.
42. Mutton, D.L., A.M.E. Scremin, T.J. Barstow, M.D. Scott, C.F. Kunkel and T.G. Cagle. Physiologic responses during functional electrical stimulation leg cycling and hybrid exercise in spinal cord injured subjects. *Arch. Phys. Med. Rehabil.* 78:712-718, 1997.
43. Leaf, D.A., M.T. Kleinman, M. Hamilton and T.J. Barstow. The effect of exercise intensity on lipid peroxidation. *Med. Sci. Sports Exerc.* 29:1036-1039, 1997.
44. Coppoolse, R., T.J. Barstow, W.W. Stringer, E. Carithers and R. Casaburi. Effect of acute bicarbonate administration on exercise responses of COPD patients. *Med. Sci. Sports Exerc.* 29:725-732, 1997.
45. Langsetmo, I., G.E. Weigle, M.R. Fedde, H.H. Erickson, T.J. Barstow, and D.C. Poole. Vo₂ kinetics in the horse

at moderate and heavy exercise. *J. Appl. Physiol.* 83:1235-1241, 1997.

46. Koga, S., T. Shiojiri, N. Kondo and T.J. Barstow. Effect of increased muscle temperature on oxygen uptake kinetics during exercise. *J. Appl. Physiol.* 83:1333-1338, 1997.
47. Berman, N., R. Bailey, T.J. Barstow, and D.M. Cooper. Spectral and bout detection analysis of physical activity patterns in healthy, prepubertal boys and girls. *Am. J. Human Biol.*, 1997.
48. Belardinelli, R., T.J. Barstow, P.H. Nguyen and K. Wasserman. Muscle oxygenation and oxygen uptake kinetics following constant work rate exercise in chronic heart failure. *Am. J. Cardiol.* 80:1319-1324, 1997.
49. Troutman, W.B., T.J. Barstow, A.J. Galindo and D.M. Cooper. Abnormal dynamic and kinetic cardiorespiratory responses to exercise in pediatric Fontan patients. *J. Am. Coll. Cardiol.* 31:668-673, 1998.
50. Eliakim, A., J.A. Brasel, T.J. Barstow, S. Mohan and D.M. Cooper. Peak oxygen uptake, muscle volume, and the growth hormone-insulin-like growth factor-I axis in adolescent males. *Med. Sci. Sports Exerc.* 30:512-517, 1998.
51. Wang, H., W.R. Hiatt, T.J. Barstow and E.P. Brass. Relationships between muscle mitochondrial DNA content, mitochondrial enzyme activity and oxidative capacity in man: alterations with disease. *Eur. J. Appl. Physiol.* 80:22-27, 1999.
52. Koga, S., T. Shiojiri, M. Shibasaki, N. Kondo, Y. Fukuba and T.J. Barstow. Kinetics of oxygen uptake during supine and upright heavy exercise. *J. Appl. Physiol.* 87:253-260, 1999.
53. Barstow, T.J., A.M. Jones, P.H. Nguyen and R. Casaburi. Influence of muscle fibre type and fitness on the oxygen uptake/power output slope during incremental exercise in humans. *Exper. Physiol.* 85:109-116, 2000.
54. Barstow, T.J., A.M.E. Scremin, D.L. Mutton, C.F. Kunkel and T.G. Cagle. Oxygen uptake kinetics during arm and leg exercise in patients with spinal cord injury. *Spinal Cord.* 38:340-345, 2000.
55. Billat V.L., R.H. Morton, N. Blondel, S. Berthoin, V. Bocquet, J.P. Koralsztein and T.J. Barstow. Oxygen kinetics and modelling of time to exhaustion whilst running at various velocities at maximal oxygen uptake. *Eur. J. Appl. Physiol.* 82:178-187, 2000.
56. Carter H., A.M. Jones, T.J. Barstow, M. Burnley, C.A. Williams and J.H. Doust. Oxygen uptake kinetics in treadmill running and cycle ergometry: a comparison. *J. Appl. Physiol.* 89:899-907, 2000.
57. Carter H., A.M. Jones, T.J. Barstow, M. Burnley, C.A. Williams and J.H. Doust. Effect of endurance training on oxygen uptake kinetics during treadmill running. *J. Appl. Physiol.* 89:1744-1752, 2000.
58. Koga, S., T.J. Barstow, T. Shiojiri, T. Takaishi, N. Kondo, Y. Fukuba and D.C. Poole. Effect of muscle mass on \dot{V}_{O_2} kinetics at the onset of work. *J. Appl. Physiol.* 90:461-468, 2001.
59. Scheuermann, B.W., B.D. Hoelting, M.L. Noble and T.J. Barstow. The slow component of O_2 uptake is not accompanied by changes in muscle EMG during repeated bouts of heavy exercise in humans. *J. Physiol.* 531:245-256, 2001.
60. Hoelting, B.D., B.W. Scheuermann and T.J. Barstow. Effect of contraction frequency on leg blood flow during knee extension exercise in humans. *J. Appl. Physiol.* 91:671-679, 2001.

61. Scheuermann, B.W., C. Bell, D.H. Paterson, T.J. Barstow and J.M. Kowalchuk. Oxygen uptake kinetics for moderate exercise are speeded in older humans by prior heavy exercise. *J. Appl. Physiol.* 92:609-616, 2002.
62. Scheuermann, B.W., J.H. McConnell and T.J. Barstow. EMG and oxygen uptake responses during slow and fast ramp exercise in humans. *Exp. Physiol.* 87:91-100, 2002.
63. Mallory, L.A., B.W. Scheuermann, B.D. Hoelting M.L. Weiss, R.M. McAllister, and T.J. Barstow. Influence of peak VO_2 and muscle fiber type on the efficiency of moderate exercise. *Med. Sci. Sports Exerc.* 34:1279-1287, 2002.
64. Miura, A., M. Endo, H. Sato, H. Sato, T.J. Barstow and Y. Fukuba. Relationship between the curvature constant parameter of the power-duration curve and muscle cross-sectional area of the thigh for cycle ergometry in humans. *Eur. J. Appl. Physiol.* 87:238-244, 2002.
65. Behnke, B.J., T.J. Barstow, C.A. Kindig, P. McDonough and D.C. Poole. Dynamics of oxygen uptake following exercise onset in rat skeletal muscle. *Respir Physiol Neurobiol.* 133(3):229-39, 2002.
66. Diederich, E.R., B.J. Behnke, P. McDonough, C.A. Kindig, T.J. Barstow, D.C. Poole and T.I. Musch. Dynamics of microvascular oxygen partial pressure in contracting skeletal muscle of rats with chronic heart failure. *Cardiovasc. Res.* 56(3):479-86, 2002.
67. Scheuermann, B.W. and T.J. Barstow. O_2 uptake kinetics during exercise at peak O_2 uptake. *J. Appl. Physiol.* 95:2014-2033, 2003.
68. Bauer, T.A., E.P. Brass, M. Nehler, T.J. Barstow and W.R. Hiatt. Pulmonary VO_2 dynamics during treadmill and arm exercise in peripheral arterial disease. *J. Appl. Physiol.* 97:627-634, 2004.
69. Wilkerson, D.P., K. Koppo, T.J. Barstow and A.M. Jones. Effect of prior multiple-sprint exercise on pulmonary O_2 uptake kinetics following the onset of perimaximal exercise. *J. Appl. Physiol.* 97:1227-1236, 2004.
70. Koga, S., D.C. Poole, T. Shiojiri, N. Kondo, Y. Fukuba, A. Miura, and T.J. Barstow. Comparison of oxygen uptake kinetics during knee extension and cycle exercise. *Am J Physiol Regul Integr Comp Physiol.* 288:R212-R220, 2004.
71. Wilkerson, D.P., K. Koppo, T.J. Barstow and A.M. Jones. Effect of work rate on the functional 'gain' of Phase II pulmonary O_2 uptake response to exercise. *Respir. Physiol. Neurobiol.* 142:211-223, 2004.
72. Lutjemeier, B., A. Miura, B.W. Scheuermann, S. Koga, D. Townsend and T.J. Barstow. Muscle contraction-blood flow interactions during upright knee extension exercise in humans. *J. Appl. Physiol.* 98:1575-83, 2005.
73. Ferreira, L.F., D. Townsend, B. Lutjemeier and T.J. Barstow. Muscle capillary blood flow kinetics estimated from pulmonary O_2 uptake and near-infrared spectroscopy. *J. Appl. Physiol.*, 98:1820-1828, 2005.
74. Ferreira, L.F., D.C. Poole and T.J. Barstow. Muscle blood flow- O_2 uptake interaction and their relation to on-exercise dynamics of O_2 exchange. *Respir. Physiol. Neurobiol.* 147(1):91-103, 2005.
75. Ferreira, L.F., B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Dynamics of skeletal muscle oxygenation during sequential bouts of moderate exercise. *Exp. Physiol.* 90:393-401, 2005.

76. Ferreira, L.F., A.J. Harper, D.K. Townsend, B.J. Lutjemeier and T.J. Barstow. Kinetics of estimated human muscle capillary blood flow during recovery from exercise. *Exp. Physiol.* 90:715-26, 2005.
77. Ferreira, L.F., A.J. Harper and T.J. Barstow. Frequency-domain characteristics and filtering of blood flow following the onset of exercise: implications for kinetics analysis. *J. Appl. Physiol.* 100:817-825, 2006.
78. Ferreira L.F., B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Effects of pedal frequency on estimated muscle microvascular O_2 extraction. *Eur. J. Appl. Physiol.* 96:558-63, 2006.
79. Barker, T., D.C. Poole and T.J. Barstow. Human critical power-oxygen uptake relation at different pedaling frequencies. *Exp. Physiol.* 91:621-63, 2006.
80. Harper, A.J., L.F. Ferreira, B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Human femoral artery and estimated muscle capillary blood flow kinetics following the onset of exercise. *Exp. Physiol.* 91:661-671, 2006.
81. Carter, H., Pringle, J.S., Barstow, T.J., Doust, J.H.. Oxygen uptake kinetics during supra VO_{2max} treadmill running in humans. *Int J Sports Med.* 27:149-57, 2006.

RESEARCH PAPERS, in press

82. Ferreira, L.F., D.M. Hueber and T.J. Barstow. Effects of assuming constant optical scattering on measurements of muscle oxygenation by near-infrared spectroscopy during exercise. *J. Appl. Physiol.*

RESEARCH PAPERS, PEER-REVIEWED (in review)

1. Glancy, B., T.J. Barstow and W.T. Willis. Linear relation between time constant of oxygen uptake kinetics, total creatine, and mitochondrial content in vitro.
2. Bauer, T.A., E.P. Brass, T.J. Barstow, and W.R. Hiatt. Skeletal muscle StO_2 kinetics are slowed during low work rate calf exercise in peripheral arterial disease.
3. Lutjemeier, B.J., L.F. Ferreira, D.C. Poole, D. Townsend and T.J. Barstow. Muscle microvascular hemoglobin concentration and oxygenation within the contraction-relaxation cycle.

CHAPTERS

1. Barstow, T.J. and R. Casaburi. Ventilatory Control in Lung Disease. In: *Principles and Practice of Pulmonary Rehabilitation*. Philadelphia: Saunders, 1992.
2. Cooper, D.M. and T.J. Barstow. Magnetic Resonance Imaging and Spectroscopy in Studing Exercise in Children. In: *Exercise and Sports Science Reviews. Vol. 24*. Baltimore: Williams and Wilkins. 1996.
3. Behnke, B.J., T.J. Barstow and D.C. Poole. VO_2 Kinetics: Pulmonary versus Muscle. In: *Oxygen Uptake Kinetics in Health and Disease*. Ed. A.M. Jones and D.C. Poole. London: Routledge. 2004
4. Barstow, T.J. and B.W. Scheuermann. VO_2 Kinetics: Effects of Maturation and Ageing. In: *Oxygen Uptake Kinetics in Health and Disease*. Ed. A.M. Jones and D.C. Poole. London: Routledge. 2004

LETTERS TO THE EDITOR

1. Cooper, D.M. and T.J. Barstow. Blood glucose turnover during exercise above and below the lactate threshold. *J. Appl. Physiol.* 74:2613, 1993.
2. Koga, S., T. Shiojiri, N. Kondo and T.J. Barstow. *J. Appl. Physiol.* 85:1593-4, 1998.
3. Barstow, T.J., B.J. Lutjemeier and L.F. Ferreira. Kinetics of restoration of arteriolar tone after exercise. *J. Appl. Physiol.* 99:775, 2005.
4. Ferreira, L.F. and T.J. Barstow. Kinetics of muscle oxygen use, oxygen content and blood flow during exercise. *J. Appl. Physiol.* 99:2468-9, 2005.

REVIEWS

1. Dressendorfer, R.H. and T.J. Barstow. Exercise for sedentary adults. *Primary Cardiology (June):*40-43, 1978.
2. Barstow, T.J. Characterization of Vo_2 kinetics during heavy exercise. *Med. Sci. Sports Exerc.* 26:1327-1334, 1994.
3. Poole, D.C., T.J. Barstow, G.A. Gaesser, W.T. Willis and B.J. Whipp. Vo_2 slow component: physiological and functional significance. *Med. Sci. Sports Exerc.* 26:1354-1358, 1994.
4. Koga, S., T. Shiojiri, N. Kondo, M. Shibasaki, D.C. Poole and T.J. Barstow. Effect of Altered Muscle Temperature on Oxygen Uptake Kinetics During Exercise. *The 1997 Nagano Symposium on Sports Science*. Ed. by Nose, H., E.R. Nadel and T. Morimoto. Cooper Publishing Group, 1998.

PAPERS IN PREPARATION (research completed)

Bauer, T.A., M. Nehler, T.J. Barstow, E.P. Brass and W.R. Hiatt. Effect of revascularization on pulmonary oxygen uptake kinetics in peripheral arterial disease.

Harper, A.J., L.F. Ferreira, B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Muscle capillary and femoral artery blood flow kinetics during recovery from exercise.

Lutjemeier, B.J., C.A. Harms, L.F. Ferreira, D.K. Townsend, A.J. Harper and T.J. Barstow. The effect of contraction frequency on the central and peripheral blood flow/ Vo_2 relationship.

Saitoh, T., L.F. Ferreira, T.J. Barstow, D.C. Poole, N. Kondo and S. Koga. Heterogeneity of muscle deoxygenation kinetics during repeated bouts of heavy exercise.

Ferreira, L.F., S. Koga and T.J. Barstow. Non-linear relationship between Vo_2 and cardiac output during incremental cycling exercise.

Miura, A., B. Lutjemeier, B.W. Scheuermann and T.J. Barstow. Interaction of muscle tension and perfusion pressure on muscle blood flow during rhythmic dynamic exercise in humans.

Gonzales, J.U., B.W. Scheuermann and T.J. Barstow. Effects of prior exercise on oxygen cost and muscle activity during moderate exercise.

Barker, T. D.C. Poole and T.J. Barstow. Oxygen uptake kinetics at critical power at different pedal frequencies in sprint and endurance trained athletes.

Scheuermann, B.W., J.M. Kowalchuk and T.J. Barstow. Recovery Vo_2 kinetics following ramp exercise are independent of the Vo_2 slow component.

Meadows, K.D., B.W. Scheuermann, B.C. Frazier, D.C. Poole and T.J. Barstow. The role of muscle fiber type distribution on the time to exhaustion during intense cycle exercise.

Frazier, B.C., B.W. Scheuermann, K.D. Meadows and T.J. Barstow. The influence of muscle fiber type predominance on EMG characteristics during dynamic exercise to fatigue.

ABSTRACTS

1. Wilmore, J.H., R.B. Parr, P.A. Vodak, T.J. Barstow, T.V. Pipes, P. Ward, and P. Leslie. Strength, endurance, BMR, and body composition changes with circuit weight training. *Med. Sci. Sports* 8:59, 1976.
2. George, L., J.W. Matheson, T.A. Riemenschneider, T.J. Barstow, A.N. DeMaria, and D.T. Mason. Relationship between the anterior mitral leaflet motion and left ventricular size in the echogram. *Pediatr. Res.* 12:381, 1978.
3. DeMaria, A.N., W. Bommer, A. Neumann, L. Weinert, T. Barstow, R. Kaku, and D.T. Mason. Evaluation of tricuspid valve prolapse by two- dimensional echocardiography. *Circulation* 57-58 (Supplement II):II43, 1978.
4. Bommer, W.J., W. Smith, A. Algarra, F. Mora, T.J. Barstow, D.T. Mason, and A.N. DeMaria. Improved pulse-doppler echographic blood flow analysis by spectral frequency distribution recordings. *Clin. Res.* 27:155A, 1979.
5. Barstow, T.J., E.M. Bernauer, and B.M. Shekolislam. A comparison of the kinetics of oxygen uptake between diabetics and nondiabetics. *Med. Sci. Sports* 11:79, 1979.
6. Barstow, T.J. Predicting the effects of circulatory adjustments at the on set of exercise on pulmonary oxygen consumption (pVo_2). In: *Proceedings of the 5th University of California at Davis Biomedical Engineering Symposium*, ed. Maury Hull, 1982.
7. Barstow, T.J., and P.A. Mole'. A ramp test is inadequate for determining the time constant of pulmonary Vo_2 . *Med. Sci. Sports* 15:102, 1983.
8. Mole', P.A., R.L. Coulson, J.R. Caton, B.G. Nichols and T.J. Barstow. Dynamics of muscle phosphagen and $[\text{H}^+]$ with forearm exercise in humans using in vivo P-31 NMR. *Fed. Proc.* 44:1374, 1985.
9. Tyler, W.S., N.K. Tyler, T.J. Barstow, D. Magliano, D. Hinds, and M. Young. Persistence of ozone lesions in monkeys with growing lungs during a 6 month post-exposure period. *Am. Rev. Resp. Dis.* 131(4):A169, 1985.

10. Tyler, W.S., N.K. Tyler, T.J. Barstow, D. Magliano, D. Hinds, and M. Young. Effects in young monkeys of intermittent episodes of exposure to low levels of ozone. *Am. Rev. Resp. Dis.* 131(4):A169, 1985.
11. Casaburi, R., T. Robinson, T. Barstow, and E. McCann. Influence of work rate on oxygen uptake kinetics during arm ergometer exercise. FASEB, Washington, D.C., April, 1987.
12. Barstow, T., D. Cooper, J. Ruth, S. Epstein, and K. Wasserman. Is ^{13}C natural enrichment (NE) of exhaled CO_2 dependent on work intensity during exercise? FASEB, Washington, D.C., April, 1987.
13. Barstow, T.J., and P.A. Mole'. Interpretation of Vo_2 kinetics during heavy exercise is model dependent. American College of Sports Medicine, Las Vegas, May 1987.
14. Barstow, T.J., D.M. Cooper, E. Sobel, and S. Epstein. $^{13}\text{CO}_2$ washout kinetics can be used to estimate metabolic rate. *Physiologist* 30:230, 1987.
15. Lee, W.P., D.M. Cooper, T. Barstow, and A.E. Bergner. Lack of glucose carbon recycling during exercise in normal subjects. Western Society for Pediatric Research, Carmel, CA., February, 1988.
16. Cooper, D., T. Barstow, E. Sobel, and S. Epstein. Dynamics of exhaled $^{13}\text{CO}_2$ following oral administration of ^{13}C -bicarbonate. FASEB, Las Vegas, May, 1988.
17. Springer, C., D.M. Cooper, and T.J. Barstow. Effect of hypoxia on oxygen uptake kinetics during exercise in children and adults. FASEB, Las Vegas, May, 1988.
18. Barstow, T.J., D.M. Cooper, C. Springer, and S. Epstein. Estimation of CO_2 stores by tracer dilution and VCO_2 kinetics. FASEB, Las Vegas, May, 1988.
19. Barstow, T.J., N. Lamarra, and B.J. Whipp. Influence of circulatory dynamics on the kinetics of pulmonary O_2 uptake during exercise. International Conference on the Control of Breathing, Denver, September, 1988.
20. Zanconato, S., Armon, Y., Barstow, T.J., and Cooper, D.M. Gas exchange response to bursts of exercise in children and adults. American Thoracic Society, May 1989.
21. Cooper, D.M., Springer, C., Barstow, T., Landaw, E., and Epstein, S. CO_2 stores and output in children estimated by $^{13}\text{CO}_2$ washout. FASEB, March 1989.
22. Barstow, T.J., Casaburi, R., and Storer, T. Training speeds kinetics of Vo_2 for work below the lactate threshold. FASEB, March 1989.
23. Barstow, T.J., J.M. Ren, B. Chance and K. Wasserman. Tissue oxygenation by near infrared spectroscopy during moderate and heavy exercise. FASEB, March 1990.
24. Jensen, S., E. Yeh, T. Barstow, P. Wals and D. Cooper. Distribution of exchangeable CO_2 -bicarbonate in the anesthetized rabbit. FASEB, March 1991.
25. Ben-Dov, I., K. Sietsema, R. Casaburi, T. Barstow, and K. Wasserman. Cause of O_2 -uptake oscillations during periodic breathing in CHF: Cardiac output or lung gas store oscillations? ATS, April 1991.
26. Barstow, T.J. and E. Khaleeli. Initial heart rate responses after exercise onset in trained cyclists. ACSM, May 1991.

27. Cooper, D., S. Zanconato and T.J. Barstow. CO₂ dynamics during intermittent exercise in children assessed by [¹³C]bicarbonate tracer. ACSM, May 1991.
28. Barstow, T.J., S. Buchthal, S. Zanconato, D.M. Cooper, J. Dutta, J. Phillips and K. Wasserman. Role of muscle pH change on phosphocreatine kinetics during constant load exercise in humans. FASEB, April 1992.
29. Belardinelli, R., T.J. Barstow, and K. Wasserman. Changes in muscle O₂ saturation during constant load exercise as related to the lactic acidosis threshold. FASEB, April 1992.
30. Barstow, T.J., W-N.P. Lee, D.M. Cooper and K. Wasserman. Sources of blood lactate below and above the lactate threshold. ACSM, May 1992.
31. Barstow, T.J. and S.D. Buchthal. Observation of a linear increase in ADP concentrations with an increase in work by the human gastrocnemius using ³¹P-NMR Spectroscopy. Society of Magnetic Resonance in Medicine (SMRM), Aug. 1992.
32. Buchthal, S.D., T.J. Barstow, S. Zanconato and D.M. Cooper. Comparison of pulmonary oxygen consumption kinetics with PCr utilization kinetics in the gastrocnemius during moderate exercise. SMRM, Aug. 1992.
33. Barstow, T.J., L.P. Maestru, J. Porszasz, W.W. Stringer and K. Wasserman. Effects of prior exercise on oxygen uptake kinetics at different exercise intensities. FASEB, April 1993.
34. Riley, M., J.M. Strakova, K. Wasserman, T.J. Barstow, and C.B. Cooper. Muscle substrate utilization in trained cyclists. Am. Lung Assoc., 1993.
35. Galassetti, P., M. Riley, K. Maehara, H. Stoicheff, T. Barstow and K. Wasserman. Effect of decreased F_IO₂ on tissue oxygen saturation during exercise below and above the lactic acidosis threshold. ALA/ATS, 1993.
36. Mutton, D.L., A.M.E. Scremin, T.J. Barstow, C. Kunkel and T.G. Cagle. Recovery oxygen uptake kinetics in subjects with complete spinal cord injury before and after training with leg cycle exercise induced by functional electrical stimulation. Am. Paraplegia Soc., 1994.
37. Barstow, T.J. Interdependence of PCr, ADP and ΔG_{ATP} under acidotic conditions in skeletal muscle. ACSM, 1995.
38. Belardinelli, R., J. Porszasz and T.J. Barstow. Kinetics of Vo₂ and muscle oxygenation by near infrared spectroscopy (NIRS) during recovery. ACSM, 1995
39. Jones, A.M., P.H. Nguyen, R. Casaburi and T.J. Barstow. Slow component of Vo₂ during heavy exercise is correlated with % fast twitch muscle fibers. ACSM Basic Science Specialty Conference, 1995.
40. Eliakim, A., J.A. Brasel, T.J. Barstow, and D.M. Cooper. Relationship of circulating growth hormone (GH), GH binding protein (BP), and insulin-like growth factor-1 (IGF-1) to physical fitness and muscle mass in adolescent females. APS/SPR, 1996.
41. Cooper, D.M., T.J. Barstow, J.A. Brasel, C. Pillet, M. Liebig, and J. Bravo de Murillo. An integrated approach to exercise testing intervention in children and adolescents. ACSM, 1996.

42. Eliakim, A., R. Renslo, T.J. Barstow, and D.M. Cooper. Effect of endurance training on muscle volume and $\dot{V}_{O_2\max}$ in adolescent females. ACSM, 1996.
43. Barstow, T.J., P. Nguyen and D.M. Cooper. Endurance training-dependent and independent responses to exercise. EB, 1996.
44. Barstow, T.J., P. Nguyen and D.M. Cooper. Relationship between peak \dot{V}_{O_2} and recovery \dot{V}_{O_2} kinetics in high school age girls. ACSM, 1996.
45. Barstow, T.J., A. Jones, P. Nguyen and R. Casaburi. Percent type I fibers in vastus lateralis predicts \dot{V}_{O_2} /work rate slope during incremental exercise. Intersociety Conference, "The Integrative Biology of Exercise", 1996.
46. Barstow, T.J., T.M. Ernst, D.L. Mutton and A.M.E. Scremin. Muscle adaptations to functional electrical stimulation (FES) training in spinal cord injury. ACSM, 1997.
47. Barstow, T.J., P.N. Nguyen, B.D. Hoelting, B.W. Scheuermann and R.M. Sinow. Hypoxia leads to elevated femoral artery blood flow during and after exercise. ACSM, 1998.
48. Hoelting, B.D., B.W. Scheuermann, R.M. Sinow and T.J. Barstow. Hypoxia, but not exercise, affects systolic and diastolic diameters of femoral artery. ACSM 1998.
49. Barstow, T.J. and R.M. Sinow. Mean blood velocity estimated by time-averaged maximal velocity in femoral artery at rest, exercise, and recovery. EB 1998.
50. Scheuermann, B.W., B.D. Hoelting, L. Noble and Barstow, T.J. Slow component of \dot{V}_{O_2} is not accompanied by changes in iEMG during heavy exercise. Biomed. Eng. Soc., Cleveland, 1998.
51. Barstow, T.J., B.H. Hoelting, and B.W. Scheuermann. Influence of muscle contraction frequency on peak and kinetic \dot{V}_{O_2} responses in humans. ACSM 1999.
52. Hoelting, B.D., B.W. Scheuermann and T.J. Barstow. The effects of contraction frequency on leg blood velocity during knee extension exercise in humans. ACSM 1999.
53. Mallory, L.A., B.W. Scheuermann, B.D. Hoelting and T.J. Barstow. Influence of fitness on $\Delta\dot{V}_{O_2}/\Delta WR$ during moderate exercise. ACSM 1999.
54. Scheuermann, B.W., J.M. Kowalchuk and T.J. Barstow. Recovery \dot{V}_{O_2} kinetics following ramp exercise are independent of the \dot{V}_{O_2} slow component. ACSM 1999.
55. Bauer, T.A., B.W. Scheuermann and T.J. Barstow. Comparison of oxygen uptake kinetics in recovery from ramp and constant work rate cycle exercise. ACSM 2000.
56. Meadows, K.M., B.W. Scheuermann, B.C. Frazier, M. Weiss, R.M. McAllister and T.J. Barstow. The role of muscle fiber type distribution on the time to exhaustion during intense cycle exercise. ACSM 2000.
57. B.W. Scheuermann, B.C. Frazier, K.D. Meadows and T.J. Barstow. \dot{V}_{O_2} uptake kinetics are not altered during exercise transitions in the severe exercise domain. ACSM 2000.
58. Barstow, T.J., B.W. Scheuermann, K.D. Meadows and B.C. Frazier. Differences in the \dot{V}_{O_2}/WR slope

among subjects are not related to differences in EMG RMS slope. ACSM 2000.

59. Barstow, T.J., B.W. Scheuermann, K. Meadows and B. Frazier. Differences in the $\dot{V}O_2$ slope among subjects are not related to differences in median frequency of EMG. Integrative Biology of Exercise 2000.
60. Miura, A., T. Shiragiku, Y. Hirotsoshi, T.J. Barstow, B.J. Whipp and Y. Fukuba. The effect of prior heavy exercise on the parameters of the power-duration curve for cycle ergometry. Integrative Biology of Exercise 2000.
61. Lutjemeier, B.J., A. Miura, B.W. Scheuermann, S. Koga and T.J. Barstow. Post exercise hyperemia does not overshoot peak oscillatory blood flow during exercise. Central States ACSM 2000.
62. Barstow, T.J., B.W. Scheuermann, B.C. Frazier and K.D. Meadows. Interpretation of changes in RMS during fatiguing cycle exercise must consider pedal frequency. ACSM 2001.
63. Miura, A., B.J. Lutjemeier, B.W. Scheuermann, S. Koga and T.J. Barstow. The effect of muscle tension and body position on leg blood flow during exercise. ACSM 2001
64. Scheuermann, B.W., J.H. McConnell and T.J. Barstow. The excess O_2 uptake during slow ramp exercise is not associated with changes in electromyography. ACSM 2001.
65. Lutjemeier, B.J., A. Miura, B.W. Scheuermann, S. Koga and T.J. Barstow. Post exercise hyperemia does not overshoot peak oscillatory blood flow during exercise. ACSM 2001.
66. Lutjemeier, B.J., D. Townsend, B. Hoelting, A. Miura, B.W. Scheuermann and T.J. Barstow. Relationship between mean and oscillations in muscle blood flow during dynamic exercise. CSACSM 2001.
67. Lutjemeier, B.J., D. Townsend, B. Hoelting, A. Miura, B.W. Scheuermann and T.J. Barstow. Relationship between mean and oscillations in muscle blood flow during dynamic exercise. ACSM 2002.
68. DeBoer, M.A., B.W. Scheuermann and T.J. Barstow. Endurance training does not alter delta efficiency of moderate intensity cycle exercise. ACSM 2002.
69. Bauer, T.A., M.R. Nehler, W.R. Hiatt and T.J. Barstow. Oxygen uptake kinetics during arm and leg exercise in patients with peripheral arterial disease (PAD). ACSM 2002.
70. Scheuermann, B.W., J.S. Williams, J.U. Gonzales, D. Roh and T.J. Barstow. Repeated bouts of fast ramp exercise are not associated with changes in the $\dot{V}O_2$ - work rate slope. ACSM 2002.
71. Lutjemeier, B.J., D.K. Townsend, S. Koga, C.A. Harms and T.J. Barstow. Oscillations in femoral venous blood flow during dynamic exercise do not simply reflect muscle pump. CSACSM 2002.
72. Scheuermann, B.W., P. Marteney and T.J. Barstow. Blood velocity waveform characteristics, fitness and post occlusive reactive hyperemia responses. ACSM 2003.
73. Bauer, T.A., W.R. Hiatt and T.J. Barstow. Oxygen uptake kinetics following leg reperfusion in peripheral arterial disease (PAD). ACSM 2003.
74. Lutjemeier, B.J., D.K. Townsend, S. Koga, C.A. Harms and T.J. Barstow. Oscillations in femoral venous blood flow during dynamic exercise do not simply reflect muscle pump. ACSM 2003.

75. Townsend, D.K., B.J. Lutjemeier, A. Miura, B.W. Scheuermann and T.J. Barstow. Skeletal muscle vascular conductance during dynamic knee extension exercise. ACSM 2003.
76. Ferreira, L., B.J. Lutjemeier, D. Townsend, T.J. Barstow. NIRS-Derived estimate of muscle blood flow kinetics during moderate- and heavy-intensity cycling exercise. ACSM 2004.
77. Townsend, D., L. Ferreira, B.J. Lutjemeier and T.J. Barstow. The influence of adipose tissue thickness on near-infrared spectrometry during intra-contraction knee extension exercise. ACSM 2004.
78. Lutjemeier, B.J., D. Townsend, L. Ferreira and T.J. Barstow. Impact of muscle contraction on arterial blood flow and tissue gas exchange by NIRS. ACSM 2004.
79. Barstow, T.J., L. Ferreira, B.J. Lutjemeier and D. Townsend. Tissue oxygenation by NIRS as a function of pedal rate during incremental exercise. ACSM 2004.
80. Townsend, D., M.D. Haub, B.J. Lutjemeier, L. Ferreira, A.J. Harper and T.J. Barstow. Dissociation of glucose homeostasis from insulin sensitivity in college-age subjects at risk for type 2 diabetes. ACSM 2005.
81. Lutjemeier, B.J., C.A. Harms, A.J. Harper, L. Ferreira, D.K. Townsend and T.J. Barstow. Pedal frequency does not alter the cardiac output : Vo₂ relationship during cycling. ACSM 2005.
82. Ferreira, L.F., D.M. Hueber, B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Muscle oxygenation during incremental exercise and recovery: implications of assuming scattering constant. ACSM 2005.
83. Harper, A.J., L. Ferreira, B. Lutjemeier, D. Townsend and T.J. Barstow. Estimated kinetics of muscle capillary blood flow during recovery from exercise. ACSM 2005.
84. Harper, A.J., L. Ferreira, B. Lutjemeier, D.K. Townsend and T.J. Barstow. Muscle capillary and femoral artery blood flow kinetics following the onset of exercise. ACSM 2006.
85. Bauer, T.A., T.J. Barstow and W.R. Hiatt. Effect of work rate on muscle StO₂ kinetics in peripheral arterial disease. ACSM 2006.
86. Lutjemeier, B.J., L.F. Ferreira, D.K. Townsend and T.J. Barstow. Frequency analysis of muscle contraction and NIRS variables: Implications for tissue gas exchange. ACSM 2006.
87. Townsend, D., M.D. Haub, L.F. Ferreira, B.J. Lutjemeier and T.J. Barstow. Insulin sensitivity and endothelial function in college-age subjects with family history of type 2 diabetes. ACSM 2006.
88. Saitoh, T., L.F. Ferreira, T.J. Barstow, D.C. Poole, N. Kondo and S. Koga. Heterogeneity of muscle deoxygenation kinetics during repeated bouts of heavy exercise. ACSM 2007.
89. Harper, A.J., L.F. Ferreira, B.J. Lutjemeier, D.K. Townsend and T.J. Barstow. Muscle capillary and femoral artery blood flow kinetics during recovery from exercise. ACSM 2007.