CURRICULUM VITAE

L. Bruce Gladden, Professor

School of Kinesiology, Auburn University

**Education:**

University of Florida, Gainesville Postdoctoral Fellow 1976-1978

 Department of Physiology

University of Tennessee, Knoxville Ph.D., Zoology 1976

University of Tennessee, Knoxville B.S., Zoology 1972

**Professional Experience:**

Auburn University, School of Kinesiology, Tenured Professor, 1989-Present

University of Louisville, Exercise Physiology Laboratory Director, 1987-1989

University of Louisville, Exercise Physiology Laboratory, Associate Professor, 1984-1989

University of Louisville, Exercise Physiology Laboratory, Assistant Professor, 1978-1984

**Honors and Awards:**

President-Elect, President, Past-President, American College of Sports Medicine, 2020-2023

Auburn University Creative Research and Scholarship Award, 2020

Vice-President, American College of Sports Medicine, 2018-2020

Environmental & Exercise Physiology Section Honor Award – American Physiological Society, 2020

Chair, Environmental and Exercise Physiology Council of American Physiological Society, 2016-2019

Fellow of the American Physiological Society, 2018

American College of Sports Medicine Citation Award, 2015

Texas A & M Department of Health & Kinesiology Scholar Award, 2015

Editor-in-Chief, *Medicine & Science in Sports & Exercise*, 2014-2022

American College of Sports Medicine (ACSM) Board of Trustees, Representative for Basic Sciences, 2011-2014

Councillor, Environmental and Exercise Physiology section of American Physiological Society, 2011-2014

Virginia Commonwealth University Department of Health and Human Performance Distinguished Scholar Lecturer, 2011

Outstanding Exercise Science Alumni Award, University of Tennessee, Knoxville, 2010

Service Award, Southeast American College of Sports Medicine (SEACSM), 2009

Humana-Germany-Sherman Distinguished Professor in Education, Auburn University, 1999-2004

Chair-Elect, Chair, Past-Chair – Auburn University Faculty Senate, 1999-2002

Henry J. Montoye Scholar, Southeast American College of Sports Medicine (SEACSM), 2000

Auburn University Graduate Faculty Lecturer, 1998

Fellow #382, National Academy of Kinesiology, Inducted 1997

Alumni Professor, Auburn University, 1996-2001

President-elect, President, Past-President: Southeast American College of

 Sports Medicine, 1995-1997

Fellow, American College of Sports Medicine since 1980

Outstanding Researcher of the Year, Auburn University College of Education, 1992

Parker B. Francis Foundation Fellow, 1978

Postdoctoral Fellow in Respiratory Physiology - National Institutes of Health Respiratory Training Grant, University of Florida, 1976-1978

Received National Science Foundation Undergraduate Research Participant's Fellowship,1972.

Received B.S. Degree "With Honors", 1972

Received an Accelerated Scholarship, Educational Opportunity Grant and National Defense Loan for undergraduate education at the University of Tennessee, 1969-1972

**Article-length publications:**

**Google Scholar h-index = 48; 9,197 citations as of 12/18/2023**

**Book Chapters**

4. Kane, Daniel A, Matthew L Goodwin, **L Bruce Gladden**. Lactate Metabolism in Health and Disease. *In* Ji, LL (ed): *The Skeletal Muscle. Volume II: Plasticity, Adaptation and Epigenetics. Section XII: Skeletal Muscle and Whole-body Health*. In Press, 2024.

3. **Gladden, L Bruce**. Lactate Metabolism during Exercise. *In* Poortmans, JR. (ed): *Principles of Exercise Biochemistry*, 3rd, revised edition, Medicine and Sport Science, Basel, Karger, 2003, volume 46, pp. 152-196.

2. Brooks, George A, and **L Bruce Gladden**. Chapter 8. Metabolic Systems: Anaerobic Metabolism (Glycolytic and Phosphagen). *In* Tipton, CM. (ed): *Exercise Physiology: People and Ideas*. New York: Oxford University Press, 2003, pp. 322-360.

1. **Gladden, L Bruce**. Chapter 14. Lactate transport and metabolism during exercise. In: *Handbook of Physiology. Exercise: Regulation and Integration of Multiple Systems*, edited by Loring B Rowell and John T Shepherd. New York: Oxford University Press, 1996, pp. 614-648.

**Invited Articles**

25. **Gladden, L. Bruce**. Distributed control of O2 max. *Journal of Physiology* 602(3):421-422, 2024. DOI: 10.1113/JP285982. PMID: 38276917

24. Glancy, Brian, Daniel A. Kane, Andreas N. Kavazis, Matthew L. Goodwin, Wayne T. Willis, **L. Bruce Gladden**. Mitochondrial lactate metabolism: history and implications for exercise and disease. *Journal of Physiology* [599(3):863-888, 2021.](https://doi.org/10.1113/jp278930)

23. Poole, David C., Harry B. Rossiter, George A. Brooks, **L. Bruce Gladden**. The anaerobic threshold: 50+ years of controversy. *Journal of Physiology* 599(3):737-767, 2021.

22. Grassi, Bruno, Michael C. Hogan, **L. Bruce Gladden**. Microvascular O2 delivery and O2 utilization during metabolic transitions in skeletal muscle. One-hundred years after the pioneering work by August Krogh. *Comparative biochemistry and physiology. Part A, Molecular & Integrative Physiology*, 2021 Feb;252:110842. doi: 10.1016/j.cbpa.2020.110842. Epub 2020 Nov 17. PMID: 33212294.

21. Goodwin, Matthew L., **L. Bruce Gladden**, Maarten W. Nijsten. Lactate-Protected Hypoglycemia (LPH). *Frontiers in Neuroscience* 14:920. doi: 10.3389/fnins.2020. 00920

20. **Gladden, L. Bruce**. Lactate as a key metabolic intermediate in cancer. *Annals of Translational Medicine* 7(10):210, 2019.

19. Ferguson, Brian S., Matthew J. Rogatzki, Matthew L. Goodwin, Daniel A. Kane, Zachary Rightmire and **L. Bruce Gladden**. Lactate metabolism: historical context, prior misinterpretations, and current understanding. *European Journal of Applied Physiology* 118(4):691-728, 2018. doi: 10.1007/s00421-017-3795-6 – 17,000 accesses as of 06/06/2023

18. Rogatzki, Matthew J., Brian S. Ferguson, Matthew L. Goodwin, and **L. Bruce Gladden**. Lactate is always the endproduct of glycolysis. *Frontiers in Neuroscience* 9:22, 2015. doi:10.3389/fnins.2015.00022 – 24,233 views as of 06/06/2023

17. Goodwin, Matthew L., **L. Bruce Gladden**, Maarten W.N. Nijsten, Kevin B. Jones. Lactate and Cancer: Revisiting the Warburg Effect in an Era of Lactate Shuttling. *Frontiers in Nutrition*. 1:27, 2014. doi:10.3389/fnut.2014.00027 – 20,417 views as of 06/06/2023

16. Clanton, Thomas L., Michael C. Hogan, and **L. Bruce Gladden**.Regulation of cellular gas exchange, oxygen sensing and metabolic control. *Comprehensive Physiology* 3(3):1135-1190, 2013.

15. McDonald, James R. and **L. Bruce Gladden**. Anaerobic Metabolism in *Encyclopedia of Exercise Medicine in Health and Disease*, Ed. by Frank C. Mooren, Springer Berlin Heidelberg, pp. 69-71; 2012. Print ISBN 978-3-540-36065-0, Online ISBN 978-3-540-29807-6.

14. **Gladden, L. Bruce**, James W. Yates, and Edward T. Howley. Who needs a bag? *Medicine & Science in Sports & Exercise* 44(2):288-289, 2012.

13. **Gladden, L. Bruce**, Matthew L. Goodwin, James R. McDonald, and Maarten W.N. Nijsten. Fuel for cancer cells? *Cell Cycle* 10:15, 2421-2422, 2011.

12. **Gladden, L. Bruce**. 200th Anniversary of lactate research in muscle. *Exercise and Sports Sciences Reviews* 36:109-115, 2008.

11. **Gladden, L. Bruce**. Current trends in lactate metabolism: Introduction. *Medicine & Science in Sports & Exercise* 40:475-476, 2008.

10. **Gladden, L. Bruce**. A “lactatic” perspective on metabolism. *Medicine & Science in Sports & Exercise* 40:477-485, 2008.

9. **Gladden, L. Bruce**. Perspectives. Is there an intracellular lactate shuttle in skeletal muscle? *Journal of Physiology* 582:899, 2007.

8. Goodwin, Matthew L., Andres Hernandez, James E. Harris, and **L. Bruce Gladden**. Blood lactate measurements and analysis during exercise: A guide for clinicians. *Journal of Diabetes Science and Technology* 1(4):558-569, 2007.

7. **Gladden, L. Bruce**. Lactate metabolism: a new paradigm for the third millennium. *Journal of Physiology* 558:5-30, 2004. This review was in the top five most electronically accessed papers in the *Journal of Physiology* from June, 2004 through June, 2006. It then remained in the top 10-20 most-frequently read articles for almost every month through January, 2011. In 2005, figures from this review were used on the front and back covers of the *Journal of Physiology* “Reviews and Perspectives” collection. 1,641 citations as of 06/06/2023.

6. **Gladden, L. Bruce**. Lactic acid: New roles in a new millennium. *Proceedings of the National Academy of Sciences* 98:395-397, 2001.

5. **Gladden, L. Bruce**. The role of skeletal muscle in lactate exchange during exercise: introduction. *Medicine & Science in Sports & Exercise* 32:753-755, 2000.

4. **Gladden, L. Bruce**. Muscle as a consumer of lactate. *Medicine & Science in Sports & Exercise* 32:764-771, 2000.

3. Pascoe, David D. and **L. Bruce Gladden**. Glycogen resynthesis following short term high intensity exercise and resistance exercise. *Sports Medicine* 21:98-118, 1996.

2. **Gladden, L. Bruce**. Lactate uptake by skeletal muscle. *Exercise and Sports Sciences Reviews* 17:115-155, 1989.

1. **Gladden, L. Bruce**. Current "Anaerobic Threshold" Controversies. *Physiologist* 27:312-318, 1984.

**“Regular” Refereed Publications**

84. Ali, Duha, Mark Schall, Sean Gallagher, Richard Sesek, Mashnur Rashid, **L Bruce Gladden**. Recovery time and rest allowance for one-handed load carrying on inclined surfaces. *International Journal of Industrial Ergonomics*, (In Review).

83. Ali, Duha, Mark Schall, Sean Gallagher, Richard Sesek, Mashnur Rashid, **L Bruce Gladden**. The psychophysical and physiological responses of individuals with varying body fat percentages and physical fitness levels during one-handed carrying on an inclined surface. *International Journal of Industrial Ergonomics*, (In Review).

82. Koirala, Bhabuk, Alessandro Concas, Alberto Cincotti, Yi Sun, Andrés Hernández , Matthew L Goodwin, L Bruce Gladden, Nicola Lai. Estimation of differential pathlength factor from NIRS measurement in skeletal muscle. *European Journal of Applied Physiology*, (In Review).

81. Morton-Jones, Mariah E, **L Bruce Gladden**, Andreas Kavazis, Mary J Sandage. A Tutorial on Skeletal Muscle Metabolism, Contraction, and the Role of Blood Lactate: Implications for Speech Production. *Journal of Speech, Language, and Hearing Sciences* Dec 29:1-15, 2023. DOI: 10.1044/2023\_JSLHR-23-00531. Epub ahead of print. PMID: 38157288.

80. Mesquita, Paulo HC, Joshua S Godwin, Bradley Ruple, Casey L Sexton, Mason C McIntosh, Breanna J Mueller, Shelby Osburn, Christopher B Mobley, Cleiton A Libardi, Kaelin C Young, **L Bruce Gladden***,* Michael D Roberts, Andreas N Kavazis. Resistance training diminishes mitochondrial adaptations to subsequent endurance training in healthy untrained men. *Journal of Physiology* 601(17):3825-3846, 2023. DOI: 10.1113/JP284822. PMID: 37470322.

79. Grassi, Bruno, Michael C. Hogan, Hailu Alemayehu, William Aschenbach, Jason Hamann, Kevin Kelley, Peter D Wagner, **L Bruce Gladden**. Combination of hyperoxia and a right-shifted HbO2 dissociation curve delays O2 kinetics during maximal contractions in isolated muscle. *Journal of Applied Physiology* 135(2):456-466, 2023. DOI: 10.1152/japplphysiol.00131.2023. PMID: 37391886.

78. Koirala, Bhabuk, Alessandro Concas, Yi Sun, **L Bruce Gladden**, Nicola Lai. Relationship between muscle venous blood oxygenation and near-infrared spectroscopy: quantitative analysis of the Hb and Mb contributions. *Journal of Applied Physiology* 134(5):1063-1074, 2023. DOI: 10.1152/japplphysiol.00406.2022. PMID: 36927143.

77. Smith, Morgan A, Casey L Sexton, Krissy A Smith, Shelby C Osburn, Joshua S Godwin, Jonathan P Beausejour, Bradley A Ruple, Michael D Goodlett, Joseph L Edison, Andrew D Frugé, Austin T Robinson, **L Bruce Gladden**, Kaelin C Young, Michael D Roberts. Molecular predictors of resistance training outcomes in young untrained female adults. *Journal of Applied Physiology* 134(3):491-507, 2023, DOI: 10.1152/japplphysiol.00605.2022. PMID: 36633866.

76. Koirala, Bhabuk, Alessandro Concas, Sun Yi, **L. Bruce Gladden**, Nicola Lai. Blood volume vs. deoxygenated NIRS signal: computational analysis of the effects muscle O2 delivery and blood volume on the NIRS signals. *Journal of Applied Physiology* 131(5):1418-1431, 2021.

75. Ferguson, Brian S., Leslie E. Neidert, Matthew J. Rogatzki, Keith R. Lohse, **L. Bruce Gladden**, Heidi A. Kluess. Red blood cell ATP release correlates with red blood cell hemolysis. *American Journal of Physiology. Cell Physiology* 321(5):C761-C769, 2021.

74. Parry, Hailey A, Kang Nian Yap, Geoffrey E. Hill, Wendy R. Hood, **L. Bruce Gladden**, Michael Eddy, Andreas N. Kavazis.[Development of a Mobile Mitochondrial Physiology Laboratory for Measuring Mitochondrial Energetics in the Field.](https://pubmed.ncbi.nlm.nih.gov/34515689/) *Journal of Visualized Experiments* Aug 27;(174), 2021.

73. Koirala, Bhabuk, Gerald M. Saidel, Andres Hernández, **L. Bruce Gladden**, Nicola Lai. Effect of blood flow on hemoglobin and myoglobin oxygenation in contracting muscle using near-infrared spectroscopy. *Advances in Experimental Medicine and Biology* 1269:367-372, 2021.

72. Porcelli, Simone, Letizia Rasica, Brian S. Ferguson, Andreas N. Kavazis, James R. McDonald, Michael C. Hogan, Bruno Grassi, **L. Bruce Gladden**. Effect of acute nitrite infusion on contractile economy and metabolism in isolated skeletal muscle *in situ* during hypoxia. *Journal of Physiology* 598(12):2371-2384, 2020.

71. Mahmud, Sultan Z., **L. Bruce Gladden**, Andreas N. Kavazis, Robert W. Motl, Thomas S. Denney, Adil Bashir. Simultaneous measurement of perfusion and T2\* in calf muscle at 7T with submaximal exercise using radial acquisition. *Scientific Reports* 10(1):6342, 2020.

70. Mota, Gustavo R., Zachary B. Rightmire, Jeffrey S. Martin, James R. McDonald, Andreas N. Kavazis, David D. Pascoe, **L. Bruce Gladden**. Ischemic preconditioning has no effect on maximal arm cycling exercise in women. *European Journal of Applied Physiology* 120(2):369-380, 2020.

69. Romero, Matthew A., Petey W. Mumford, Paul A. Roberson, Shelby C. Osburn, Hailey A. Parry, Andreas N. Kavazis, **L. Bruce Gladden**, Tonia S. Schwartz, Brent A. Baker, Ryan G. Toedebusch, Thomas E. Childs, Frank W. Booth, Michael D. Roberts. Five months of voluntary wheel running downregulates skeletal muscle LINE-1 gene expression in rats. *American Journal of Physiology: Cell Physiology* 317(6):C1313-C1323, 2019.

68. Haun, Cody T., Christopher G. Vann, Christopher B. Mobley, Paul A. Roberson, Shelby C. Osburn, Hudson M. Holmes, Petey M. Mumford, Matthew A. Romero, Kaelin C. Young, Jordan R. Moon, **L. Bruce Gladden**, Robert D. Arnold, Michael A. Israetel, Annie N. Kirby, Michael D. Roberts. Effects of graded whey supplementation during extreme-volume resistance training. *Frontiers in Nutrition* 2018 Sep 11;5:84. doi:10.3389/fnut.2018.00084. eCollection 2018.

67. Yi, Sun, Brian S. Ferguson, Matthew J. Rogatzki, James R. McDonald, and **L. Bruce Gladden**. Muscle NIRS signals vs. venous blood hemoglobin oxygen saturation in skeletal muscle. *Medicine & Science in Sports & Exercise* 48(10):2013-2020, 2016.

66. Barberio, Matthew D., David J. Elmer, Richard H. Laird, Khalil A. Lee, **L. Bruce Gladden**, and David D. Pascoe. Systemic LPS and inflammatory response during consecutive days of exercise in heat. *International Journal of Sports Medicine* 36(3):262-270, 2015.

65. Oldenbeuving, Geert, James R. McDonald, Matthew L. Goodwin, Reis Sayilir, Dirk-Jan Reijngoud, **L.B. Gladden**, Maarten W. Nijsten. A patient with acute liver failure and extreme hypoglycaemia with lactic acidosis who was not in a coma: causes and consequences of lactate-protected hypoglycaemia. *Anaesthesia Intensive Care* 42(4):507-511, 2014.

64. Wüst, Rob C.I., James R. McDonald, Yi Sun, Brian S. Ferguson, Matthew J. Rogatzki, Jessica Spires, John M. Kowalchuk, **L. Bruce Gladden**, and Harry B. Rossiter. Slowed muscle oxygen uptake kinetics with raised metabolism are not dependent on blood flow or recruitment dynamics. *Journal of Physiology* 592(8):1857-1871, 2014.

63. Yarar-Fisher, Ceren, David D. Pascoe, **L. Bruce Gladden**, John C. Quindry, J. Hudson, and Joellen Sefton. Acute physiological effects of whole body vibration (WBV) on central hemodynamics, muscle oxygenation and oxygen consumption in individuals with chronic spinal cord injury. *Disability and Rehabilitation* 36(2):136-145, 2014.

62. Spires, Jessica, **L. Bruce Gladden**, Bruno Grassi, Gerald M. Saidel, Matthew L. Goodwin, and Nicola Lai. Distinguishing the effects of convective and diffusive O2 delivery on O2 on-kinetics in skeletal muscle contracting at moderate intensity. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 305(5):R512-521, 2013.

61. Spires, Jessica, **L. Bruce Gladden**, Bruno Grassi, Gerald M. Saidel, and Nicola Lai. Model analysis of the relationship between intracellular PO2 and energy demand in skeletal muscle. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 303:R1110-R1126, 2012.

60. Østergaard, Lars, Kirsten Kjær, Kurt Jensen, **L. Bruce Gladden**, Torben Martinussen, and Preben K. Pedersen. Increased steady state O2 and larger O2 deficit with CO2 inhalation during exercise. *Acta Physiologica* 204(3):371-381, 2012.

59. Lai, Nicola, Fatima Tolentino-Silva, Melita M. Nasca, Marco A. Silva, **L. Bruce Gladden**, and Marco E. Cabrera. Exercise intensity and oxygen uptake kinetics in African-American and Caucasian women. *European Journal of Applied Physiology* 112:973-982, 2012.

58. Goodwin, Matthew L., Andrés Hernández, Nicola Lai, Marco E. Cabrera, and **L. Bruce Gladden**. O2 on-kinetics in isolated canine muscle *in situ* during slowed convective O2 delivery. *Journal of Applied Physiology* 112:9-19, 2012.

57. Wüst, Rob C.I., Bruno Grassi, Michael C. Hogan, Richard A. Howlett, **L. Bruce Gladden**, and Harry B. Rossiter. Kinetic control of oxygen consumption during contractions in self-perfused skeletal muscle. *Journal of Physiology* 589 (16):3995-4009, 2011.

56. Grassi, Bruno, Harry B. Rossiter, Michael C. Hogan, Richard A. Howlett, James E. Harris, Matthew L. Goodwin, John L. Dobson, and **L. Bruce Gladden**. [Faster O2 uptake kinetics in canine skeletal muscle *in situ* after acute creatine kinase inhibition.](http://www.ncbi.nlm.nih.gov/pubmed/21059760) *Journal of Physiology* 589(Pt 1):221-233, 2011.

55. Hernández, Andrés, James R. McDonald, Nicola Lai, and **L. Bruce Gladden**. A prior bout of contractions speeds O2 and blood flow on-kinetics and reduces the O2 slow component amplitude in canine skeletal muscle contracting *in situ*. *Journal of Applied Physiology* 108:1169-1176, 2010.

54. Hernández, Andrés, Matthew L. Goodwin, Nicola Lai, Marco E. Cabrera, James R. McDonald, and **L. Bruce Gladden**. Contraction-by-contraction O2 and computer-controlled pump-perfusion as novel techniques to study skeletal muscle metabolism *in situ*. *Journal of Applied Physiology* 108:705-712, 2010.

53. Lai, Nicola, Haiying Zhou, Gerald M. Saidel, Martin Wolf, Kevin McCully, **L. Bruce Gladden**, and Marco E. Cabrera. [Modeling oxygenation in venous blood and skeletal muscle in response to exercise using near-infrared spectroscopy.](http://www.ncbi.nlm.nih.gov/pubmed/19342438?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum) *Journal of Applied Physiology* 106:1858-1874, 2009.

52. Wall, Sarah J, Mary E. Rudisill, and **L. Bruce Gladden**. Cortisol response to physical activity in African American toddlers attending full-time day care. *Research Quarterly for Exercise and Sport* 80:739-746, 2009.

51. Lai, Nicola, **L. Bruce Gladden**, Pierre G. Carlier, and Marco E. Cabrera. Models of muscle contraction and energetics. *Drug Discovery Today* 5(4):273-288, 2008.

50. Zoladz, Jerzy A., **L. Bruce Gladden**, Michael C. Hogan, Zenon Nieckarz, and Bruno Grassi. Progressive recruitment of muscle fibers is not necessary for the slow component of O2 kinetics. *Journal of Applied Physiology*, 105:575-580, 2008.

49. Lai, Nicola, Gerald M. Saidel, Bruno Grassi, **L. Bruce Gladden**, and Marco E. Cabrera. Model of oxygen transport and metabolism predicts effect of hyperoxia on canine muscle oxygen uptake dynamics. *Journal of Applied Physiology* 103:1366-1378, 2007.

48. Howlett, Richard A., Kevin M. Kelley, Bruno Grassi, **L. Bruce Gladden**, and Michael C. Hogan. Caffeine administration results in greater tension development in previously fatigued canine muscle in situ. *Experimental Physiology* 90(6):873-879, 2005.

47. Grassi, Bruno, Michael C. Hogan, Kevin M. Kelley, Richard A. Howlett, and **L. Bruce Gladden**. Effects of nitric oxide synthase inhibition by L-NAME on oxygen uptake kinetics in isolated canine muscle *in situ*. *Journal of Physiology* 568(Pt 3):1021-1033, 2005.

46. Pattillo, Robin E. and **L. Bruce Gladden**. Red blood cell lactate transport in sickle disease and sickle cell trait. *Journal of Applied Physiology* 99:822-827, 2005.

45. Sahlin, Kent, JesBak Sørensen, **L. Bruce Gladden**, Harry B. Rossiter, and Preben K. Pedersen. Prior heavy exercise eliminates O2 slow component and reduces efficiency during submaximal exercise in humans *Journal of Physiology* 564(Pt 3):765-773, 2005.

44. McAnulty, Steven R., Lisa McAnulty, David D. Pascoe, Sareen S. Gropper, Robert E. Keith, John D. Morrow, and **L. Bruce Gladden**. Hyperthermia increases exercise-induced oxidative stress. *International Journal of Sports Medicine* 26:188-192, 2004.

43. Hogan, Michael C., Bruno Grassi, Michele Samaja, Creed M. Stary, and **L. Bruce Gladden**. Effect of contraction frequency on the contractile and noncontractile phases of muscle venous blood flow. *Journal of Applied Physiology* 95:1139-1144, 2003.

42. Evans, Ronald K., Dean D. Schwartz, and **L. Bruce Gladden**. Effect of myocardial volume overload and heart failure on lactate transport into isolated cardiac myocytes. *Journal of Applied Physiology* 94:1169-1176, 2003.

41. Dobson, John L. and **L. Bruce Gladden**. Effect of rhythmic tetanic skeletal muscle contractions on peak muscle perfusion. *Journal of Applied Physiology* 94:11-19, 2003.

40. Kelley, Kevin M., Jason J. Hamann, Christine Navarre, and **L. Bruce Gladden** Lactate metabolism in resting and contracting canine skeletal muscle with elevated lactate concentration. *Journal of Applied Physiology* 93:865-872, 2002.

39. Grassi, Bruno, Michael C. Hogan, Paul L. Greenhaff, Jason J. Hamann, Kevin M. Kelley, William G. Aschenbach, Dumitru Constantin-Teodosiu, and **L. Bruce Gladden**. O2 on-kinetics in dog gastrocnemius in situ following activation of pyruvate dehydrogenase by dichloroacetate. *Journal of Physiology* 538:195-207, 2002.

38. Hamann, Jason J., Kevin M. Kelley, and **L. Bruce Gladden**. Effect of epinephrine on net lactate uptake by contracting skeletal muscle. *Journal of Applied Physiology* 91:2635-2641, 2001.

37. Aschenbach, William G., Gregory L. Brower, Robert J. Talmadge, John L. Dobson, and **L. Bruce Gladden**. Effect of a myocardial volume overload on lactate transport in skeletal muscle sarcolemmal vesicles. *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology* 281:R176-R186, 2001.

36. Fields, David A., G. Dennis Wilson, **L. Bruce Gladden**, Gary R. Hunter, David D. Pascoe, and Michael I. Goran. Comparison of the BOD POD with the four-compartment model in adult females. *Medicine & Science in Sports & Exercise* 33:1605-1610, 2001.

35. Grassi, Bruno, Michael C. Hogan, Kevin M. Kelley, William G. Aschenbach, Jason J. Hamann, Ronald K. Evans, Robin E. Pattillo, and **L. Bruce Gladden**. Role of convective O2 delivery in determining O2 on-kinetics in canine muscle contracting at peak O2. *Journal of Applied Physiology* 89:1293-1301, 2000.

34. Samaja, Michele, Sonia Allibardi, Giuseppina Milano, Gabriella Neri, Bruno Grassi, **L. Bruce Gladden**, and Michael C. Hogan. Differential depression of myocardial function and metabolism by lactate and H+. *American Journal of Physiology: Heart and Circulatory Physiology* 276:H3-H8, 1999.

33. Grassi, Bruno, **L. Bruce Gladden**, Creed M. Stary, Peter D. Wagner, and Michael C. Hogan. Peripheral O2 diffusion does not affect O2 on- kinetics in isolated *in situ* canine muscle. *Journal of Applied Physiology* 85:1404-1412, 1998.

32. Grassi, Bruno, **L. Bruce Gladden**, Michele Samaja, Creed M. Stary, and Michael C. Hogan. Faster adjustment of O2 delivery does not affect O2 on-kinetics in isolated *in situ* canine muscle. *Journal of Applied Physiology* 85:1394-1403, 1998.

31. Smith, Edith W., Michele S. Skelton, DuAnn E. Kremer, David D. Pascoe, and **L. Bruce Gladden**. Lactate distribution in the blood during steady-state exercise. *Medicine & Science in Sports & Exercise* 30:1424-1429, 1998.

30. Hogan, Michael C., **L. Bruce Gladden**, Bruno Grassi, Creed M. Stary, and Michele Samaja. Bioenergetics of contracting skeletal muscle after partial reduction of blood flow. *Journal of Applied Physiology* 84:1882-1888, 1998.

29. Skelton, Michele S., DuAnn E. Kremer, Edith W. Smith, and **L. Bruce Gladden**. Lactate influx into red blood cells from trained and untrained human subjects. *Medicine & Science in Sports & Exercise* 30:536-542, 1998.

28. Portington, Kevin J., David D. Pascoe, Michael J. Webster, Layne H. Anderson, Rodney R. Rutland, and L**. Bruce Gladden**. Effect of induced alkalosis on exhaustive leg press performance. *Medicine & Science in Sports & Exercise* 30:523-528, 1998.

27. Smith, Edith W., Michele S. Skelton, DuAnn E. Kremer, David D. Pascoe, and **L. Bruce Gladden**. Lactate distribution in the blood during progressive exercise. *Medicine & Science in Sports & Exercise* 29:654-660, 1997.

26. Skelton, Michele S., DuAnn E. Kremer, Edith W. Smith, and **L. Bruce Gladden**. Lactate influx into red blood cells of 'athletic' and 'non-athletic' species. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* 268:R1121-R1128, 1995.

25. Hogan, Michael C., **L. Bruce Gladden**, Sadi Kurdak, and David C. Poole. L-(+)-lactate infusion into submaximally working dog gastrocnemius: increased muscle [lactate] reduces tension development independent of pH. *Medicine & Science in Sports & Exercise* 27:371-377, 1995.

24. **Gladden, L. Bruce**, Robert E. Crawford, Michael J. Webster, and Peter W. Watt. Rapid tracer lactate influx into canine skeletal muscle. *Journal of Applied Physiology* 78:205-211, 1995.

23. Watt, Peter W., **L. Bruce Gladden**, Harinder S. Hundal, and Robert E. Crawford. Effects of flow and contraction on lactate transport in the perfused rat hindlimb. *American Journal of Physiology: Endocrinology and Metabolism* 267:E7-E13, 1994.

22. **Gladden, L. Bruce**, Robert E. Crawford, and Michael J. Webster. Effect of lactate concentration and metabolic rate on net lactate uptake by canine skeletal muscle. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* 35:R1095-R1101, 1994.

21. Poole, David C., **L. Bruce Gladden**, Sadi Kurdak, and Michael C. Hogan. L-(+)-Lactate infusion into working dog gastrocnemius. No evidence that lactate *per se* mediates O2 slow component. *Journal of Applied Physiology* 76:787-792, 1994.

20. Webster, Michael J., Miriam N. Webster, Robert E. Crawford, and **L. Bruce Gladden**. Effect of sodium bicarbonate ingestion on exhaustive resistance exercise performance. *Medicine & Science in Sports & Exercise* 25:960-965, 1993.

19. **Gladden, L. Bruce**, Robert E. Crawford and Michael J. Webster. Effect of blood flow on net lactate uptake during steady-level contractions in canine skeletal muscle. *Journal of Applied Physiology* 72(5):1826-1830, 1992.

18. **Gladden, L. Bruce**. Net lactate uptake during progressive steady-level contractions in canine skeletal muscle. *Journal of Applied Physiology* 71(2):514-520, 1991.

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**Editorials and Letters to the Editor (Scientific Journals)**

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**Presentations/Lectures**

**Invited Presentations/Lectures**

49. **Gladden, L. Bruce**. “Introduction: Evolution of Blood Lactate as a Predictor of Health”, part of a symposium co-chaired by Joe Houmard and Nicholas Broskey, entitled, “Lactate in Health and Disease: The Renaissance Metabolite”. Annual meeting of the American College of Sports Medicine, Denver, CO, May 30 - June 2, 2023.

48. **L. Bruce Gladden.** Can Exercise Burn My Fat Away? Stetson University, Health Sciences. Deland, FL, October 20, 2022.

47. **L. Bruce Gladden.** ATP Bioenergetics in a 2-Hour Marathon – an Integrative Physiology and Biochemistry Topic. Penn State Noll Seminar Series, State College, PA, April 8, 2022.

46. **L. Bruce Gladden.** A Lactate Primer with Basic and Applied Viewpoints. Penn State Kinesiology Colloquium Series, State College, PA, April 7, 2022.

45. **L. Bruce Gladden.** Invited Keynote Address. Fat Burning: Is There an Optimal Exercise Intensity? ACSM’s International Health & Fitness Summit, Dallas, TX, March 31, 2022.

44. **L. Bruce Gladden.** Andrew Kozar ACSM President Address. A Personal History of Southeast ACSM. SEACSM Annual Meeting, Greenville, SC, February 18, 2022.

43. **L. Bruce Gladden.** Is There a Role for O2 in Lactate Metabolism. Part of a symposium entitled, “The anaerobic threshold: 50+ years of controversy.” Annual meeting of the Southwest ACSM, Costa Mesa, CA, October 29-30, 2021.

42. **L. Bruce Gladden.** ATP Usage in a World Class Marathon: An Integrative Topic. D.B. Dill Lecture at Southwest ACSM annual meeting in Costa Mesa, CA, October 29-30, 2021.

41. **L. Bruce Gladden.** Red Blood Cell versus Plasma Concentration: An Overlooked Problem in Lactate Measurement. Invited presentation: Jornada Internacional de Excelencia en Medicina del Deporte. ACSM en Expañol, (International Day of Excellence in Sports Medicine. ACSM in Spanish), October 22, 2021.

40. **L. Bruce Gladden.** Red Blood Cell versus Plasma Concentration: An Overlooked Problem in Lactate Measurement. Invited presentation: Sport Sciences Research Institute of Iran Virtual International Symposium on Lactate, A Phoenix Rising in Exercise Physiology, October 11, 2021.

39. **L. Bruce Gladden.** Why the Anaerobic Threshold Is Not Anaerobic. Invited presentation: Sport Sciences Research Institute of Iran Virtual 12th International Congress on Sports Sciences, November 9-12, 2020.

38. **L. Bruce Gladden.** Introduction to symposium, Is Mitochondrial Respiration a Limiting Factor of Oxidative Metabolism? An Integrated Approach to Exercise. Invited presentation; Integrative Physiology of Exercise meeting in San Diego, CA, September 5-8, 2018.

37. **L. Bruce Gladden.** Is There a Role for O2 in Lactate Metabolism during Exercise? Invited presentation; Division of Respiratory Critical Care Physiology and Medicine, David Geffen School of Medicine, Harbor-UCLA Medical Center, Los Angeles, CA, September 4, 2018.

36. **L. Bruce Gladden**. Does ATP Release from Red Blood Cells Play a Role in Exercise Blood Flow? Invited Pre-Conference Tutorial presentation for SEACSM Rapid Research Race; SEACSM annual meeting in Greenville, SC, February 16-18, 2017.

35. **L. Bruce Gladden**. Town Hall Discussion for Trainees. Invited Tutorial participation with Scott Powers and Peter Wagner at SEACSM annual meeting in Greenville, SC, February 16-18, 2017.

34. **L. Bruce Gladden**. Lactate in Health and Disease, invited lecture as part of Sixth Annual Texas A & M Health & Kinesiology Distinguished Lecture Series, in College Station, TX, April 7-8, 2015.

33. **L. Bruce Gladden**. Blood Lactate: Practical Applications to Basic Mechanisms. Departments of Physiology and Human Movement Sciences at Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, October 24, 2013.

32. **L. Bruce Gladden**. Blood Lactate: From the Practical to the Mechanistic. University of Utah School of Medicine, Department of Orthopaedics Grand Rounds, September 17, 2013.

31. **L. Bruce Gladden**. Lactate and Cancer. Sarcoma Research in Progress Group at University of Utah School of Medicine, Department of Orthopaedics, September 16, 2013.

30. **L. Bruce Gladden**. The Dynamics of Skeletal Muscle Bioenergetics. Invited speaker as part of symposium on” Exercise Induced Activation of Bioenergetic Pathways in Skeletal Muscle.” Annual meeting of the American College of Sports Medicine, San Francisco, CA, May 29-June 2, 2012.

29. **L. Bruce Gladden**. Cancer Therapy: A New Role for Lactate? Department of Health and Human Performance Distinguished Scholar Lecture at Virginia Commonwealth University, Richmond, VA, April 7, 2011.

28. **L. Bruce Gladden**. Surprises on the trail of O2 and lactate. Outstanding Exercise Science Alumni Award Lecture, University of Tennessee, Knoxville, April 16, 2010.

27. **L. Bruce Gladden**. Lactate as a primary metabolite in physiology. Warburg Seminar, University Medical Center Groningen, The Netherlands, January 22, 2010.

26. **L. Bruce Gladden**. O2 delivery and O2 uptake on-kinetics in isolated whole muscle *in situ*. Seminar for Japanese Respiration Society, Niigata, Japan, September 17, 2009.

25. **L. Bruce Gladden**. Why does lactate increase during exercise? Seminar for Department of Sports Medicine for Health Promotion, Tokyo Medical University, Tokyo, Japan, September 14, 2009.

24. **L. Bruce Gladden**. Lactate Metabolism: Recent Perspectives. Seminar for Department of Health, Leisure, and Exercise Science, Appalachian State University, Boone, North Carolina, April 2, 2007.

23. **L. Bruce Gladden**. Lactate Metabolism in Skeletal Muscle. Invited Symposium participant for Ed Howley Retirement, Department of Exercise, Sport, and Leisure Studies, University of Tennessee, Knoxville, Tennessee, March 30, 2007.

22. **L. Bruce Gladden**. Presentation and consultation on lactate metabolism, Metabasis Therapeutics, La Jolla, CA, April 12-13, 2007.

21. **L. Bruce Gladden**. A ‘lactatic’ perspective on metabolism. American College of Sports Medicine Conference on Integrative Physiology of Exercise, Indianapolis, IN, September 27-30, 2006. Also organized symposium on “Current Trends in Lactate Metabolism.

20. **L. Bruce Gladden**. Blood lactate: An indicator of training and/or overtraining? Third Annual Diabetes Technology Meeting, San Francisco, CA, November 6-8, 2003.

19. **L. Bruce Gladden**. Net lactate uptake: roles of metabolic rate and epinephrine. Symposium presentation at 50th Annual Meeting of the American College of Sports Medicine, San Francisco, CA, May 28-31, 2003.

18. **L. Bruce Gladden**. Seminar at University of Milano, Milano, Italy, April 15, 2003. Lactate Threshold: Underlying Mechanisms.

17. **L. Bruce Gladden**. Confessions of a lactic acidologist. Lecture at 28th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Charlotte, NC, January 27-29, 2000 as a consequence of being selected the Year 2000 Henry J. Montoye Scholar.

16. **L. Bruce Gladden**. Central Alabama Sports Medicine, Fall meeting; October 8, 1998. Limits to Exercise Performance.

15. **L. Bruce Gladden**. Seminar at Vanderbilt University Department of Molecular Physiology and Biophysics, July 27, 1998. Lactate uptake by contracting skeletal muscle.

14. **L. Bruce Gladden**. Why does [lactate] increase during exercise? New insights into an old issue. Presented at June 26, 1997 Seminario di Fisiologia Dell’Esercizio, in Milano, Italy at Instituto di Tecnologie Biomediche Avanzate, Consiglio Nazionale Delle Ricerche and Dipartimento Scienze e Tecnologie Biomediche, Universita di Milano.

13. **L. Bruce Gladden**. Lactate Transport Across the Sarcolemma. Symposium at University of Florida, Gainesville, entitled Advances in Respiratory and Locomotor Muscle Biology III: Effects of Exercise, September 7-8, 1995.

12. **L. Bruce Gladden**. Anaerobic Threshold: Mechanisms. Basic Science Lecture at February, 1995 annual meeting of Southeast Chapter of American College of Sports Medicine, Lexington, Kentucky.

11. **L. Bruce Gladden**. Lactate Transport in Blood. Seminar for Department of Nutrition, Food and Movement Science, Florida State University, Tallahassee, Florida, December 2, 1994.

10. **L. Bruce Gladden**. Lactate Uptake By Contracting Skeletal Muscle. Presented to Department of Physiology, School of Medicine, University of South Carolina, Columbia, South Carolina, March 21, 1994.

9. **L. Bruce Gladden**. Blood Lactate Response to Exercise: The Lactate Threshold. Presented to Department of Exercise Science, University of South Carolina, Columbia, South Carolina, March 21, 1994.

8. **L. Bruce Gladden**. Lactate Transport in Red Blood Cells. Presented at Symposium at University of Florida, Gainesville, entitled Advances in Respiratory and Locomotor Muscle Biology II: Effects of Exercise, November 18-19, 1993.

7. **L. Bruce Gladden**. The Metabolism of Lactic Acid. Presented at The Fourth Annual Colloquia on Applied Science in Sports Medicine, presented by Fondren Orthopedic Group, April 23-24, 1993, Houston, Texas.

6. **L. Bruce Gladden**. Net Lactate Uptake by Skeletal Muscle: Metabolic Rate, Blood Flow, Concentration, and Transport. Presented at Symposium at University of Florida, Gainesville, entitled Advances in Locomotor and Respiratory Muscle Biology: Effects of Acute and Chronic Exercise, November 21-22, 1991.

5. **L. Bruce Gladden**. Anaerobic Threshold: A Review. The Glaxo Lecture. Presented at Special Symposium on Oxygen Transport During Exercise: Issues and Future Directions. Louisiana State University, Baton Rouge, Louisiana. November 19-20, 1987.

4. **L. Bruce Gladden**. Lactate Metabolism and Metabolic Rate. Presented at Special Symposium on Oxygen Transport During Exercise: Issues and Future Directions. Louisiana State University, Baton Rouge, Louisiana. November 19-20, 1987.

3. **L. Bruce Gladden**. Current 'Anaerobic Threshold' Controversies. Presented at August, 1984 American Physiological Society meeting. Lexington, Kentucky. Also organized Refresher Course on "Anaerobic Threshold".

2. **L. Bruce Gladden**. Laboratory Methods in Measurement of Gas Exchange during Exercise. Presented at Winter, 1983 meeting of Southeast Chapter of American College of Sports Medicine. Gainesville, Florida.

1. **L. Bruce Gladden**. Preparing for Gas Exchange Measurements. Presented at Winter, 1981 meeting of Southeast Chapter of American College of Sports Medicine. Charleston, South Carolina.

**Other Presentations/Lectures/Posters**

52. **Gladden, L. Bruce**. Oxygen, Lactate, and Oxygen Uptake On-Kinetics, part of a symposium co-chaired by Michael C. Hogan and **L. Bruce Gladden**, entitled, “Oxygen and Striated Muscle Function”. Annual meeting of the American College of Sports Medicine, Denver, CO, May 30 - June 2, 2023.

51. **Gladden, L. Bruce.** Bioenergetics of the Two-Hour Marathon. Annual meeting of the Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 23-25, 2023.

50. Willis, Wayne, **Bruce Gladden**, Brian Glancy. Thermodynamic barriers to mitochondrial lactate oxidation: Insights from computational modeling. 2019 NHLBI Mitochondrial Biology Symposium: On Mitochondrial Networks and Energetics at the National Institutes of Health, Bethesda, Maryland, September 26-27, 2019.

49. **Gladden, L. Bruce**, John L. Dobson, Edith W. Smith, Zachary B. Rightmire, Andreas N. Kavazis. Lactate transport in plasma and red blood cells. The 10th International Congress of Comparative Physiology and Biochemistry in Ottawa, Ontario, Canada, August 5-9, 2019.

48. Rightmire, Zachary B., Gustavo R. da Mota, Jeffrey S. Martin, James R. McDonald, Andreas N. Kavazis, David D. Pascoe, **L. Bruce Gladden**. Ischemic Preconditioning Does Not Affect Performance in Young Healthy Females during Maximal Arm Cycle Ergometry. Integrative Physiology of Exercise meeting in San Diego, CA, September 5-8, 2018.

47. Haun, Cody T., Christopher G. Vann, Christopher B. Mobley, Paul A. Roberson, Shelby C. Osburn, Petey W. Mumford, Matthew A. Romero, Kaelin C. Young, Jordan S. Moon, **L. Bruce Gladden**, Robert D. Arnold, Michael Israetel, Annie N. Kirby, Michael D. Roberts. Effects of Graded Whey Protein Supplementation on Hypertrophic Indices during Extreme Volumes of Resistance Training. Integrative Physiology of Exercise meeting in San Diego, CA, September 5-8, 2018.

46. **Gladden, L. Bruce**. Wendell Stainsby, Oxygen, and Lactate, Part of a symposium chaired by **L. Bruce Gladden**, entitled, “Wendell Stainsby's Scientific Legacy: The Roles of Oxygen and Lactate in Exercise Metabolism.” Annual meeting of the American College of Sports Medicine, Minneapolis, MN, May 29 – June 2, 2018.

45. **Gladden, L. Bruce**. Lactate Metabolism Today, Part of a symposium chaired by **L. Bruce Gladden**, entitled, “Lactate Metabolism: History and Update.” Annual meeting of the Southeast Chapter of the American College of Sports Medicine, Chattanooga, TN, February 15 – 17, 2018.

44. **Gladden, L. Bruce**. O2 On-kinetics in Perfused Skeletal Muscle, Part of a symposium co-chaired by **L. Bruce Gladden** and Andreas N. Kavazis, entitled, “Interrogation of Mitochondrial Function from the Organelle to the Whole Body.” Annual meeting of the American College of Sports Medicine, Denver, CO, May 30 – June 3, 2017.

43. **Gladden, L. Bruce**. Impact Factors: Strengths and Weaknesses, Part of a symposium chaired by David D. Pascoe, entitled, “Impact Factors, h-Indices, and a Wet Finger in the Wind.” Annual meeting of Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 18-29, 2016.

42. **Gladden, L. Bruce**. Introduction to symposium entitled, “Interrogation of Mitochondrial Function from the Cell to the Whole Body,” co-chaired by Andreas Kavazis and **L. Bruce Gladden**. Annual meeting of Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 18-29, 2016.

41. **Gladden, L. Bruce**. O2 On-kinetics in Perfused Skeletal Muscle, Part of a symposium entitled, “Interrogation of Mitochondrial Function from the Cell to the Whole Body.” Annual meeting of Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 18-29, 2016.

40. **Gladden, L. Bruce**. Conventional History of ATP, Part of a symposium chaired by **L. Bruce Gladden** and Heidi Kluess, entitled, “ATP and Blood Flow: A New Role for the Energy Transfer Molecule?” Annual meeting of Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 18-29, 2016.

39. **Gladden, L. Bruce**. The Role of Oxygen in the Lactate Threshold, Part of a symposium chaired by **L. Bruce Gladden**, entitled “A Tribute to Hugh G. Welch: SEACSM’s First Scholar.” Annual meeting of Southeast Chapter of the American College of Sports Medicine, Jacksonville, FL, February 12-14, 2015.

38. **Gladden, L. Bruce**. Introduction to symposium on “Powerhouse: Mitochondrial Structure, Exercise Function, and Training Response.” Annual meeting of the American College of Sports Medicine, Orlando, FL, May 27-May 31, 2014. Co-organized and co-chaired by Michael C. Hogan and **L. Bruce Gladden**.

37. **Gladden, L. Bruce**. Tutorial Lecture – “Publishing in Medicine & Science in Sports & Exercise.” Annual meeting of the American College of Sports Medicine, Orlando, FL, May 27-31, 2014.

36. **Gladden, L. Bruce**. Co-Chair and Co-Organizer of symposium on “Adaptations of Mitochondrial Oxidative Phosphorylation to Changing O2 Environments.” Experimental Biology Meeting, San Diego, CA, April 26-30, 2014.

35. **Gladden, L. Bruce**. Introduction to symposium on “New Insights into Skeletal Muscle Fatigue: From Single Myofibers to Humans.” Annual meeting of the American College of Sports Medicine, Indianapolis, IN, May 28-June 1, 2013. Co-organized and co-chaired by Michael C. Hogan and **L. Bruce Gladden**.

34. **Gladden, L. Bruce**. Introduction and “Hyperlactatemia, Hypoglycemia, and Cancer.” Annual meeting of the American College of Sports Medicine, San Francisco, CA, May 29-June 2, 2012. Part of a symposium on “Lactate and Cancer” organized and chaired by Matthew L. Goodwin and **L. Bruce Gladden**.

33. **Gladden, L. Bruce**. Introduction to Featured Science Session on “Cellular Regulators of Metabolic Function During Exercise.” Annual meeting of the American College of Sports Medicine, San Francisco, CA, May 29-June 2, 2012 Featured Science Session organized and chaired by **L. Bruce Gladden**.

32. **Gladden, L. Bruce**. Measuring Oxygen Uptake: Then and Now. Annual meeting of Southeast Chapter of American College of Sports Medicine, Jacksonville, FL, February 9-11, 2012.

31. **Gladden, L. Bruce**. Introduction to symposium on “Energy Cost in Resting and Exercising Skeletal Muscle at the Cellular Level.” Annual meeting of the American College of Sports Medicine, Denver, CO, May 31-June 4, 2011. Symposium co-chaired by Michael C. Hogan and **L. Bruce Gladden**.

30. **Gladden, L. Bruce**. Introduction to symposium on “Lactate-Protected Hypoglycemia (“LPH”): A Potential Cancer Treatment?.” Annual meeting of Southeast Chapter of American College of Sports Medicine, Greenville, SC, February 3-5, 2011. Symposium organized by **L. Bruce Gladden**.

29. **Gladden, L. Bruce**. O2 On-Kinetics: An Eyepiece into Oxidative Metabolism. Annual meeting of Southeast Chapter of American College of Sports Medicine, Greenville, SC, February 3-5, 2011. Part of a symposium on “Assessing Oxygen Delivery and Mitochondrial Function” organized by Kevin McCully of University of Georgia.

28. McDonald, James R., Bruno Grassi, Nicola Lai, Michael C. Hogan, Yi Sun, and **L. Bruce Gladden**. Effect of hypoxia with matched convective O2 delivery on VO2 on-kinetics in canine skeletal muscle *in situ*. Presented at the Integrative Physiology of Exercise meeting, September 22-25, 2010; Miami Beach, FL.

27. **Gladden, L. Bruce**. Oxygen delivery and oxygen uptake on-kinetics in isolated canine muscle *in situ*. Annual meeting of Southeast Chapter of American College of Sports Medicine, Greenville, SC, February 11-13, 2010. Part of a symposium on “Oxygen Uptake On-Kinetics: History, Mechanisms, and Effect of Aging” organized by Matthew L. Goodwin and **L. Bruce Gladden**.

26. **Gladden, L. Bruce**. Introduction, and “O2 on-kinetics in isolated whole muscle.” Annual meeting of American College of Sports Medicine, Seattle, WA, May 27 – May 30, 2009. Part of a symposium on “Mitochondrial Turn-On Time at Exercise Onset” organized by **L. Bruce Gladden**.

25. Østergaard, L., Kirsten Kjaer, Kurt Jensen, **L. Bruce Gladden**, and Preben K. Pedersen. Enlarged O2 deficit with CO2-inhalation during heavy exercise. Presented at the Integrative Biology of Exercise meeting, September 24-27, 2008; Hilton Head, SC.

24. **Gladden, L. Bruce**. Introduction and Overview. Annual meeting of American College of Sports Medicine, Indianapolis, IN, May 28 – May 31, 2008. Part of a symposium on “The Lactate Paradox at High Altitude” organized by **L. Bruce Gladden**.

23. **Gladden, L. Bruce**. Oxygen and the Increase in Lactate Concentration during Exercise. Annual meeting of American College of Sports Medicine, Indianapolis, IN, May 28 – May 31, 2008. Part of a symposium on “The Lactate Paradox at High Altitude” organized by **L. Bruce Gladden**.

22. **Gladden, L. Bruce**. Introduction and Overview. Annual meeting of American College of Sports Medicine, Indianapolis, IN, May 28 – May 31, 2008. Part of a symposium on “Skeletal Muscle Fatigue: New Insights” organized by Dr. Michael C. Hogan and **L. Bruce Gladden**.

21. **Gladden, L. Bruce**. Introduction, and “O2 and Lactate during Exercise.” Annual meeting of Southeast Chapter of American College of Sports Medicine, Birmingham, AL, February 14 – February 16, 2008. Part of a symposium on “High Altitude Lactate Paradox: Pros and Cons,” organized by **L. Bruce Gladden** and including two of my Ph.D. students, Andrés Hernandez and Matthew L. Goodwin.

20. **Gladden, L. Bruce**. Introduction and Overview. Annual meeting of American College of Sports Medicine, New Orleans, LA, May 30 – June 2, 2007. Part of a symposium on “O2max Revisited: From Whole Body to Single Cell” organized by Dr. Michael C. Hogan and **L. Bruce Gladden**.

19. **Gladden, L. Bruce**. Whole Body O2max: The Plateau Revisited. Annual meeting of American College of Sports Medicine, New Orleans, LA, May 30 – June 2, 2007. Part of a symposium on “O2max Revisited: From Whole Body to Single Cell” organized by Dr. Michael C. Hogan and **L. Bruce Gladden**.

18. **Gladden, L. Bruce**. A ‘lactatic’ perspective on metabolism. American College of Sports Medicine Conference on Integrative Physiology of Exercise, Indianapolis, IN, September 27-30, 2006. Also organized symposium on “Current Trends in Lactate Metabolism.”

17. Harris, James E., Andrés Hernandez, Matthew L. Goodwin, and **L. Bruce Gladden**. Confirmation of treadmill O2max in sprinters and long distance runners. Presented at American College of Sports Medicine Conference on Integrative Physiology of Exercise, Indianapolis, IN, September 27-30, 2006.

16. **Gladden, L. Bruce**. Muscle Oxygen Uptake On-Kinetics: Why is there a lag in oxygen uptake at the onset of exercise? Presented at 30th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Atlanta, GA, January 31-February 2, 2002.

15. Aschenbach, William G., **L. Bruce Gladden**, and Gregory L. Brower. Gender-specific morbidity and functional responses in a rat model of heart failure. Presented at the 22nd Annual Scientific Sessions of the American Section of the International Society for Heart Research, Louisville, KY, June 14-18, 2000.

14. Evans, Ronald K., Dean D. Schwartz, and **L. Bruce Gladden**. Single-cell measurements of lactate transport into isolated rat ventricular cardiac myocytes. Presented at 28th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Charlotte, NC, January 27-29, 2000.

13. Dobson, John L., Edith W. Smith, and **L. Bruce Gladden**. Relationship between plasma and whole blood lactate concentrations in various exercise protocols. Presented at 28th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Charlotte, NC, January 27-29, 2000.

12. Aschenbach, William G., and **L. Bruce Gladden**. Membrane transport of lactic acid in striated muscle. Tutorial presented at 28th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Charlotte, NC, January 27-29, 2000.

11. Ronald K. Evans, Jason J. Hamann, and **L. Bruce Gladden**. Lactate influx into red blood cells of trained and untrained greyhounds. Presented at 27th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Norfolk, VA, February 4-6, 1999.

10. Kevin M. Kelley, William G. Aschenbach, Jason J. Hamann, Ronald K. Evans, Robin E. Pattillo, and **L. Bruce Gladden**. Peak metabolic rate in canine gastrocnemius muscle: intact arterial vs. contralateral shunt perfusion. Presented at 27th Annual Meeting of Southeast Chapter of American College of Sports Medicine, Norfolk, VA, February 4-6, 1999.

9. **Gladden, L. Bruce**. Muscle as a Consumer of Lactate. Presented at May, 1997 annual meeting of American College of Sports Medicine, Denver, Colorado.

8. Crawford, Robert E., Michael J. Webster and **L. Bruce Gladden**. Muscle fasiculation with high lactate concentration during contractions of in situ canine skeletal muscle. Presented by R. E. Crawford at January, 1991 annual meeting of Southeast Chapter of American College of Sports Medicine, Louisville, Kentucky.

7. **Gladden, L. Bruce**. A lactate carrier in skeletal muscle? A tutorial presented at January, 1990 annual meeting of Southeast Chapter of American College of Sports Medicine, Columbia, South Carolina.

6. **Gladden, L. Bruce**. Skeletal muscle as a site of lactate uptake. A tutorial presented at January, 1989 annual meeting of Southeast Chapter of American College of Sports Medicine, Atlanta, Georgia.

5. **Gladden, L. Bruce**, John A. Morrow and Ronald D. Fell. Effect of respiratory alkalosis on blood lactate concentration and performance. Presented at January, 1987 annual meeting of Southeast Chapter of American College of Sports Medicine. Charleston, South Carolina.

4. **Gladden, L. Bruce**. Lactic Acid and Muscle Fatigue. Presented at March, 1980 University of Louisville Exercise Physiology Symposium, sponsored by University of Louisville Graduate School and the American College of Sports Medicine. Louisville, Kentucky.

3. **Gladden, L. Bruce**. Limiting Factors of Maximal O2 Uptake. Presented at Winter, 1979 meeting of Southeast Chapter of American College of Sports Medicine. Charleston, South Carolina.

2. **Gladden, L. Bruce**. Exercise Efficiency: How Valid is Baseline Subtraction? Presented in Thursday night mini-session at Spring, 1978 meeting of American College of Sports Medicine. Washington, D.C.

1. **Gladden, L. Bruce**. The Anaerobic Threshold: Is It Really Anaerobic? Presented at Fall, 1977 meeting of Southeast Chapter of American College of Sports Medicine. Lexington, Kentucky.

**Podcasts**

1. “Lactate/Lactic Acid” on Run with Fitpage, 2022.

2. “Lactate with Bruce Gladden” on Science of Ultra, 2015.

https://www.scienceofultra.com/podcasts/10

**Grants and Contracts**

I was Principal Investigator on all items listed unless otherwise noted. Dollar amounts are direct costs.

**Funded Grants**

Auburn University PAIR Grant; A Mobile Mitochondria Laboratory (AU MitoMobile) to Lead the World in Measuring Bioenergetics in Natural Settings; 01/01/2019 – 01/01/2022. Co-I. $636,941

Editorial Grant-in-Aid; American College of Sports Medicine. 2013-present. $232,000.

Auburn University Intramural Grant Program Level 1 grant. “Lactate-Protected Hypoglycemia as a Potential Cancer Therapy,” 01/2011. $4,000.

College of Education Seed Grant “Lactate Preservation of Function during Hypoglycemia for Potential Cancer Treatment,” 01/2010. $2,500.

NATO International Scientific Exchange Programmes, Cooperative Science and Technology Sub-Programme, Collaborative Linkage Grant. “Skeletal muscle O2 kinetics: from basic physiology to exercise performance,” 09/2002 – 09/2004. Co-PI with Dr. Bruno Grassi, ITBA, National Research Council, Segrate, Milano, Italy, and Dr. Jerzy Zoladz, Department of Muscle Physiology, Institute of Human Physiology, AWF-Krakow (University Academy of Physical Education), Krakow, Poland. $18,450.

NATO International Scientific Exchange Programmes. “Factors limiting muscle O2 uptake on-kinetics”, 06/1998 – 09/2001. Co-PI with Dr. Bruno Grassi, ITBA, National Research Council, Segrate, Milano, Italy. $6,000.

National Institutes of Health. "Regulation of Lactate Transport and Metabolism", 04/01/1995 – 03/31/1999. $767,858.

National Institutes of Health. "Factors Determining Lactate Uptake By Skeletal Muscle", 09/16/1989 – 08/31/1993. $306,541.

Public Health Service. "DHHS/Public Health Service/Small Instrumentation Grant", 09/01/1991 – 08/21/1992. $5,000.

National Science Foundation/Kentucky EPSCoR. "Acid-Base Status and Muscle Fatigue", 10/1986 – 10/1989. $100,457.

University Louisville Office of the Provost. Faculty Development Mini Grant. "Physiology: New Developments in the Study of Muscle and Exercise", 04/1985. $862.

Kentucky Heart Association. "O2 Uptake Kinetics with Variations in O2 Delivery", 07/1982 – 06/1983. $8,400.

University of Louisville Graduate Research Council. "EMG Power Spectral Density Changes Following Respiratory Alkalosis and Acidosis", 1982/83. Co-I. $2,000.

University of Louisville Graduate Research Council. "Effect of Trans-membrane H+ Gradient on Lactate Distribution Ratio", 1982/83. $2,000.

Kentucky Heart Association. "Catecholamines, Arm Work and the Anaerobic Threshold", 07/1981 – 06/1982. $11,270.

University of Louisville Graduate Research Council. "Lactate Uptake and Metabolic Rate in Canine Skeletal Muscle", 1980/81. $2,000.

University of Louisville Graduate Research Council. "Lactic Acid and Fatigue in Skeletal Muscle", 1979/80. $2,000.

University of Louisville Graduate Research Council. "Blood Lactate, Exercise Intensity and the Anaerobic Threshold", 1979. $2,000.

**Contracts Awarded**

Vapotherm, Inc. “Blood lactate recovery with non-invasive high flow ventilatory support”, 2022. $91,000. In collaboration with Dr. Michael D. Roberts.

Farmafood, Inc. "A Double Blind, Parallel Group, Comparative Clinical Investigation of Four Different Fiber Tablet Formulations As Aids To Weight Loss/Control", 1986. $26,325. In collaboration with Drs. J. W. Yates and Ronald D. Fell (PI).

Regional Military Entrance Processing Station. "Body Fat Evaluation of Military Personnel", 1986. $5,000. In collaboration with Drs. J. W. Yates and Ronald D. Fell.

Jefferson County Board of Corrections. "Physical Fitness Evaluation Service Contract", 1985. $10,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Jefferson County Civil Service. "Physical Fitness Evaluation Service Contract", 1985. $10,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Regional Military Entrance Processing Station. "Body Fat Evaluation of Military Personnel", 1985. $1,500. In collaboration with Drs. J. W. Yates and Ronald D. Fell.

COBE Laboratories, Inc. "Use of Whole Body Impedance to Estimate Body Fat", 1985. $2,220. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford.

Jefferson County Board of Corrections. "Physical Fitness Evaluation Service Contract", 1984. $10,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Louisville Civil Service. "Physical Fitness Evaluation Service Contract", 1984. $5,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Regional Military Entrance Processing Station. "Body Fat Evaluation of Military Recruits", 1984. $1,950. In collaboration with Drs. J. W. Yates and Ronald D. Fell.

Jefferson County Civil Service. "Physical Fitness Evaluation Service Contract", 1984. $10,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Louisville Civil Service. "Physical Fitness Evaluation Service Contract", 1983. $5,000. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Regional Military Entrance Processing Station. "Body Fat Evaluation of Military Recruits", 1983. $1,200. In collaboration with Drs. J. W. Yates and Ronald D. Fell.

Louisville Civil Service. "Physical Fitness Evaluation Service Contract", 1981. $12,500. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

Jefferson County Civil Service. "Physical Fitness Evaluation Service Contract", 1981. $7,500. In collaboration with Drs. J. W. Yates, Ronald D. Fell, and Bryant A. Stamford (Principal Contractor).

**Service**

**Selected University Service**

Institutional Review Board for Use of Human Subjects, 2023-2026

Provost Search Committee, 2023

Creative Research & Scholarship Award Committee, 2014-Present

Radiological Safety Committee Chair, 2011-2013

Radiological Safety Committee, 2010-2013

Dean Boosinger Review Committee, 2010-2011

Research Task Force, 2008-2010

Board of Trustees Student Affairs Committee, 2007-2010

Research Task Force, 2008-2010

University Senate Nominating Committee, 2001-2002, 2006-2007, 2008-2009, 2010-2011, 2014-2015, 2015-2016

University Senate *Ad Hoc* Committee on Process, Criteria, and Timing of a Presidential

Search, 2004-2005

SACS Steering Committee for the Self-Study; Chair, Educational Program

Sub-Committee, 2001-2003

Auburn University Multicultural Diversity Commission, 2000-2003, Co-Chair, 2002-2003

President’s Advisory Board for the Professional Enhancement Program, 2000-2001

Administrator Evaluations Committee, Chair, 1999-2002

Steering Committee of the University Senate, 1998-2001

Radiological Safety Committee, 1997-2000

Alumni Professor Selection Committee, 1997-2000

Academic Standards Committee, 1997-2000

Biogrants Committee, 1997-2002

Graduate Student Affairs Committee, 1993-97, Chair, 1995-96

Rules Committee of the University Senate, 1994-97, 1999-2002

Institutional Review Board for Use of Human Subjects, 1990-93, Chair, 1992-93

University Senate, 1991-2002

Biomedical Research Support Grant Advisory Committee, 1990-91, 1993

**Selected College of Education Service**

Scholarship and Innovations Committee, 2007-2012

Research and Grants Director Search Committee, 2007-2008

Kinesiology Department Head Search Committee, 2007

Committee to review Adult Education Program, 2006-2007

**Selected School of Kinesiology Service**

Co-Chair, Health Disparities and Biomechanics Search Committee, 2016

Chair, Fitness, Conditioning and Performance Search Committee, 2011-2012

Chair, Academic Program Review, 2015-2016

Chair, Academic Program Review, 2009-2010

Chair, Exercise Physiology Search Committee, 2007-2008

Acting HLHP Department Head, Spring Semester, 2002

Chair and member of numerous other Search Committees in School of Kinesiology

**Professional Memberships**

Fellow of the American Physiological Society, 2018

Regular Member of American Physiological Society since 1980

Fellow of American College of Sports Medicine (ACSM), Member since 1976

Member of Southeast Chapter of the American College of Sports Medicine (SEACSM) since its inception in 1973

**Selected Professional Service**

Associate Editor, *Exercise, Sport & Movement*, 2022-present

Consulting Editor, *Medicine & Science in Sports & Exercise*, 2023-present

President-Elect, President, Immediate Past-President, American College of Sports Medicine (2020-2023)

Member, ACSM Foundation Board, 2023-present

Member, ACSM Science Integration & Leadership Committee (SILC), 2010-present

Chair, Environmental & Exercise Physiology Council, American Physiological Society, 2016-2019

Organizer, World Congress on The Basic Mechanisms of Exercise Fatigue for annual national meeting of the American College of Sports Medicine in San Diego, CA in May, 2015

Editor-in-Chief, *Medicine & Science in Sports & Exercise*, 2014-2022

FASEB Publications and Communications Committee, 2013-present

American College of Sports Medicine Program Committee, 2008-2023

Associate Editor-in-Chief for Basic Sciences, *Medicine & Science in Sports & Exercise*, 2006-2013

Occasional reviewer of grants for National Institutes of Health

Occasional reviewer of grants for National Science Foundation

Occasional reviewer of grants for Department of Veterans Affairs

Occasional reviewer of grants for Medical Research Council of Canada

Occasional reviewer of grants for United Kingdom Research Council

Regular reviewer for *Journal of Applied Physiology*

Regular reviewer for *Journal of Physiology*

Regular reviewer for *Experimental Physiology*

Regular reviewer for *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*

Regular reviewer for *Annals of Biomedical Engineering*

Officeholder and Member of various committees for the American College of Sports Medicine and the Southeast Chapter of the American College of Sports Medicine