RUSSELL THOMAS HEPPLE

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CITIZENSHIP Canada & United Kingdom

(A) ACADEMIC TRAINING

Post Doctoral Research Fellow, 1996-99
Department of Medicine, University of California, San Diego, USA
Mentors: Odile Mathieu Costello, Ph.D. and Peter D. Wagner, M.D.

Ph.D., 1996
Department of Physiology, University of Toronto, ON, Canada.
Mentor: Michael J. Plyley, Ph.D.

M.Sc., 1992
Department of Physiology, University of Toronto, ON, Canada.
Mentor: Michael J. Plyley, Ph.D.

B.Sc., 1988
Department of Physiology, University of Saskatchewan, SK, Canada.

(B) ACADEMIC APPOINTMENTS

2017- Professor of Muscle Biology
Department of Physical Therapy, University of Florida

2015- 16 Professor
Department of Kinesiology and Physical Education, McGill University
Department of Critical Care Medicine, McGill University Health Centre
Department of Medicine, McGill University
Centre for Translational Biology, Research Institute of the McGill University Health Centre

2012-16 Director, McGill Research Center for Physical Activity and Health

2011- Associate Professor
Department of Kinesiology and Physical Education, McGill University

2011- Associate Professor
Department of Critical Care Medicine, McGill University Health Centre
Department of Medicine, McGill University, CAN

2005-2010 Associate Professor
Faculty of Kinesiology, University of Calgary, CAN

Associate Professor
Faculty of Medicine, Department of Physiology & Pharmacology,
University of Calgary, CAN

1999-2005 Assistant Professor
Faculty of Kinesiology, University of Calgary, CAN

Assistant Professor
Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary, CAN

1992-95 Sessional Instructor
School of Physical and Health Education, University of Toronto, CAN.

(C) PUBLICATIONS:

Names of authors underlined indicate trainees under R.T. Hepple's supervision.

Published Manuscripts:

1. **R.T. Hepple** A new measurement of tissue capillarity: the capillary-to-fibre perimeter exchange index. *Canadian Journal of Applied Physiology* 22(1): 11-22, 1997. PMID: 9018404
2. **R.T. Hepple**, S.L.M. MacKinnon, S.G. Thomas, J.M. Goodman, and M.J. Plyley. Quantitating the capillary supply and the response to resistance training in older men. *Pflügers Archive European Journal of Physiology* 433: 238-244, 1997. PMID: 9064638
3. **R.T. Hepple**, S.L.M. MacKinnon, S.G. Thomas, J.M. Goodman, and M.J. Plyley. Resistance and aerobic training in older men: effects on VO_{2peak} and the capillary supply to skeletal muscle. *Journal of Applied Physiology* 82(4): 1305-1310, 1997. PMID: 9104869
4. **R.T. Hepple**, P.J. Agey, L. Hazelwood, J.M. Szewczak, R.E. MacMillen, and O. Mathieu-Costello. Increased capillarity in leg muscle of finches living at altitude. *Journal of Applied Physiology* 85(5): 1871-1876, 1998. PMID: 9804593
5. **R.T. Hepple**, T.L. Babits, M.J. Plyley and J.M. Goodman. Dissociation of maximum vascular conductance and VO_{2max} among highly-trained athletes. *Journal of Applied Physiology* 87(4): 1368-1372, 1999. PMID: 10517765
6. **R.T. Hepple**, P.P. Liu, M.J. Plyley, and J.M. Goodman. Oxygen uptake kinetics during exercise in chronic heart failure: influence of peripheral vascular reserve. *Clinical Science* 97: 569-577, 1999. PMID: 10545307
7. Hogan, M.C., Kohin, S., Stary, C.M., and **R.T. Hepple**. Rapid force recovery in skeletal muscle following ischemia is dependent on O_2 availability. *Journal of Applied Physiology* 87(6): 2725-2729, 1999. PMID: 10601171
8. **R.T. Hepple.** Skeletal muscle: microcirculatory adaptation to metabolic demand. *Medicine and Science in Sports and Exercise* 32(1): 117-123, 2000. PMID: 10647538
9. Richardson, R.S., C.A. Harms, B. Grassi, and **R.T. Hepple**. Skeletal muscle: master or slave of the cardiovascular system? *Medicine and Science in Sports and Exercise* 32(1): 89-93, 2000. PMID: 10647534

10. **R.T. Hepple**, M.C. Hogan, C. Stary, D.E. Bebout, O.Mathieu-Costello and P.D. Wagner. Structural basis of muscle O_2 diffusing capacity: evidence from muscle function *in situ*. *Journal of Applied Physiology* 88: 560-566, 2000. PMID: 10658023
11. **R.T. Hepple** and O. Mathieu-Costello. Estimating the size of the capillary-to-fiber interface in skeletal muscle: A comparison of methods. *Journal of Applied Physiology* 91(5): 2150-2156, 2001. PMID: 11641356
12. **R.T. Hepple** .The role of O_2 supply in muscle fatigue. *Canadian Journal of Applied Physiology* 27(1): 56-69, 2002. (Published proceedings of 2000 Canadian Society for Exercise Physiology Annual Meeting). PMID: 11880691
13. Mathieu-Costello, O. and **R.T. Hepple**. Assessment of muscle structural capacity for oxygen flux from capillary to fiber mitochondria: Comparative perspectives and plasticity. *Exercise and Sport Sciences Reviews* 30(2): 80-84, 2002. (Invited Review) PMID: 11991542
14. **R.T. Hepple**, J.L. Hagen and D.J. Krause. Oxidative capacity interacts with oxygen delivery to determine VO_{2max} in rat skeletal muscles *in situ*. *Journal of Physiology* 541.3: 1003-1012, 2002. PMID: 12068058
15. **R.T. Hepple,** J.L. Hagen, D.J. Krause, and C.C. Jackson. Aerobic power declines with aging in rat skeletal muscles perfused at matched convective O_2 delivery. *Journal of Applied Physiology* 94: 744-751, 2003. PMID: 12391069
16. **R.T. Hepple,** C.M. Stary, S. Kohin, P.D. Wagner and M.C. Hogan. No effect of trans sodium crocetinate on maximal O_2 conductance in canine skeletal muscle under moderately hypoxic conditions. *Respiration Physiology & Neurobiology* 134: 239-246, 2003. PMID: 12660103
17. **R.T. Hepple**, D.J. Krause, J.L. Hagen, and C.C. Jackson. VO_{2max} is unaffected by altering the temporal pattern of stimulation frequency in rat hindlimb *in situ. Journal of Applied Physiology* 95: 705-711, 2003. PMID: 12704088
18. J.M. LaMothe, **R.T. Hepple**, and R.F. Zernicke. Bone adaptation with aging and long-term caloric restriction in Fischer 344 X Brown Norway F1-hybrid rats. *Journal of Applied Physiology* 95: 1739-1745, 2003. PMID: 12807893
19. **R.T. Hepple.** Sarcopenia--A Critical Perspective. *Science of Aging Knowledge Environment* 2003, 46: pe31, 2003 (http://sageke.sciencemag.org/cgi/content/full/sageke;2003/46/pe31). PMID: 14627844
20. **R.T. Hepple**, K.D. Ross, and A.B. Rempfer. Fiber atrophy and hypertrophy in skeletal muscles of late middle aged Fischer 344 X Brown Norway F1-hybrid rats. *Journals of Gerontology Biological Sciences* 59A(2): 108-117, 2004. PMID: 14999023
21. **R.T. Hepple** and J.E. Vogell. Anatomic capillarization is maintained in relative excess of fiber oxidative capacity in some skeletal muscles of late middle aged rats. *Journal of Applied Physiology* 96: 2257-2264, 2004. PMID: 14966023
22. J.L. Hagen, D.J. Krause, D.J. Baker, M. Fu, M.A. Tarnopolsky, and **R.T. Hepple**. Skeletal muscle aging in F344BN F1-hybrid rats: I. Mitochondrial dysfunction contributes to the age-associated reduction in VO_{2max}. *Journals of Gerontology Biological Sciences* 59A(11): 1099-1110, 2004. PMID: 15602055
23. **R.T. Hepple,** J.L. Hagen, D.J. Krause, and D.J. Baker. Skeletal muscle aging in F344BN F1-hybrid rats: II. Improved contractile economy in senescence helps compensate for reduced ATP generating capacity. *Journals of Gerontology Biological Sciences* 59A(11): 1111-1119, 2004. PMID: 15602056

24. **R.T. Hepple**, D.J. Baker, J.J. Kaczor and D.J. Krause. Long-term caloric restriction abrogates the age-related decline in skeletal muscle aerobic function. *The FASEB Journal* 19(10): 1320-1322, 2005. PMID: 15955841
25. D.J. Baker and **R.T. Hepple**. Utility of a Pump-perfused Rat Hindlimb Preparation for Research in the Exercise Sciences. Proceedings from the 2003 Canadian Society for Exercise Physiology Meeting. *Canadian Journal of Applied Physiology* 30(5): 576-590, 2005. PMID: 16293905
26. D.J. Krause, J.L. Hagen, C.A. Kindig and **R.T. Hepple**. NOS inhibition reduces the O_2 cost of contractions in pump-perfused rat hindlimb muscles: Effects are independent of convective O_2 delivery. *Experimental Physiology* 90.6: 889-900, 2005. PMID: 16123049
27. **R.T. Hepple**. Dividing to keep muscle together: The role of satellite cells in aging skeletal muscle. *Science of Aging Knowledge Environment* 2006 (3): pe3, 2006. (http://sageke.sciencemag.org/cgi/content/full/2006/3/pe3). PMID: 16421381
28. **R.T. Hepple**, D.J. Baker, M. McConkey, T. Murynka and R. Norris. Caloric restriction protects mitochondrial function with aging in skeletal and cardiac muscles. *Rejuvenation Research* 9(2): 219-222, 2006. PMID: 16706647
29. D.J. Baker, D.J. Krause, R.A. Howlett and **R.T. Hepple**. Nitric oxide synthase inhibition reduces the O_2 cost of force development and spares high energy phosphates following contractions in pump-perfused rat hindlimb muscles. *Experimental Physiology* 91.3: 581-589, 2006. PMID: 16469818
30. D.J. Baker, A.C. Betik, D.J. Krause, and **R.T. Hepple**. No decline in skeletal muscle oxidative capacity with aging in long-term caloric restricted rats: effects are independent of mtDNA integrity. *Journals of Gerontology Biological Sci*ences 61A: 675-684, 2006. PMID: 16870628
31. D.J. Baker and **R.T. Hepple**. Elevated caspase and AIF signaling correlates temporally with progression of sarcopenia in male F344BN rats. *Experimental Gerontology* 41: 1149-1156, 2006. PMID: 17029665
32. J.S. Vantanajal, J.C. Ashmead, T.J. Anderson, **R.T. Hepple** and M.J. Poulin. Differential sensitivities of cerebral and brachial blood flow to hypercapnia in humans. *Journal of Applied Physiology* 102: 87-93, 2007. PMID: 17023571
33. A.C. Betik and **R.T. Hepple**. Determinants of VO_{2max} Decline with Aging: An Integrated Perspective. *Applied Physiology, Nutrition and Metabolism* 33(1): 130-140, 2008. PMID: 18347663
34. A.C. Betik, D.J. Baker, D.J. Krause, M.J. McConkey, and **R.T. Hepple**. Exercise training in late middle aged male F344BN rats improves skeletal muscle aerobic function. *Experimental Physiology* 93.7: 863-871, 2008. PMID: 18356556
35. Z.W. Westerbrook, **R.T. Hepple**, and R.F. Zernicke. Effects of Aging and Caloric Restriction on Bone Structure and Mechanical Properties. *Journals of Gerontology Biological Sci*ences 63(11): 1131-1136, 2008. PMID: 19038827
36. **R.T. Hepple,** M. Qin, H. Nakamoto, and S. Goto. Caloric restriction optimizes the proteasome pathway with aging in rat plantaris muscle: implications for sarcopenia. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 295(4): R1231-1237, 2008. PMID: 18703409
37. **R.T. Hepple.** Why Eating Less Keeps Mitochondria Working in Aged Skeletal Muscle. *Exercise and Sport Sciences Reviews* (Invited Review) 37(1): 23-28, 2009. PMID: 19098521

38. L. E. Wong, T. Garland Jr., S. Rowan, **R.T. Hepple**. Anatomic capillarization is elevated in medial gastrocnemius muscle of mighty mini mice. *Journal of Applied Physiology* 106(5): 1660-1667, 2009. PMID: 19286572
39. A.C. Betik, M.M. Thomas, K.J. Wright, C.D. Riel and **R.T. Hepple**. Exercise training from late middle age to senescence does not attenuate the declines in skeletal muscle aerobic function. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 297(3): R744-755, 2009. PMID: 19571205
40. **R.T. Hepple**, R.A. Howlett, C.A. Kindig, C.M. Stary and M.C. Hogan. The O_2 cost of the time-tension integral in isolated single myocytes during fatigue. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 298(4): R983-988, 2010. PMID: 20130224
41. M.M. Thomas, C. Vigna, A.C. Betik, A.R. Tupling, and **R.T. Hepple**. Initiating treadmill training in late middle age offers modest adaptations in Ca^{2+} handling but enhances oxidative damage in senescent rat skeletal muscle. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 298(5): R1269-1278, 2010. PMID: 20200131
42. **R.T. Hepple**. Mitochondrial Protein Import in Aged Skeletal Muscle: Can Tom Still Do It? Invited Editorial Focus, *American Journal of Physiology Cell Physiology* 298(6): C1298-1300, 2010. PMID: 20219952
43. E.E. Carter, M.M. Thomas, T. Murynka, S.L. Rowan, K.J. Wright, E. Huba, and **R.T. Hepple**. Slow Twitch Soleus Muscle is not Protected from Sarcopenia in Senescent Rats. *Experimental Gerontology* 45(9): 662-670, 2010. PMID: 20398745
44. M.M. Thomas, W. Khan, A.C. Betik, K.J. Wright, and **R.T. Hepple**. Initiating Exercise Training in Late Middle Age Minimally Protects Muscle Contractile Function and Increases Myocyte Oxidative Damage in Senescent Rats. *Experimental Gerontology* 45(11): 856-867, 2010. PMID: 20643203
45. M. Picard, D. Ritchie, K.J. Wright, M.M. Thomas, S.L. Rowan, T. Taivassalo, and **R.T. Hepple.** Mitochondrial Functional Impairment with Aging is Exaggerated in Isolated Mitochondria compared to Permeabilized Myofibers. *Aging Cell* 9(6): 1032-1046, 2010. PMID: 20849523
46. C. Tweedie, C. Romestaing, Y. Burelle, A. Safdar, M.A. Tarnopolsky, S.L. Britton, L. Koch, and **R.T. Hepple**. Lower Oxidative DNA Damage Despite Greater ROS Production in Muscles from Rats Selectively Bred for High Running Capacity. *American Journal of Physiology Regulatory Integrative and Comparative Physiology* 300(3): R544-553, 2011 (featured article by Editor). PMID: 21148474
47. M. Picard, T. Taivassalo, D. Ritchie, K.J. Wright, M.M. Thomas, C. Romestaing, and **R.T. Hepple.** Mitochondrial Structure and Function are Disrupted by Standard Isolation Methods. *PLoS One* 6(3): e18317, 2011. PMID: 21512578
48. S.L. Rowan, F.M. Purves-Smith, N.M. Solbak, and **R.T. Hepple**. Accumulation of Severely Atrophic Myofibers Marks the Acceleration of Sarcopenia in Slow and Fast Twitch Muscles. *Experimental Gerontology* 46(8): 660-669, 2011. PMID: 21513786
49. J. Murias, J. Kowalchuk, D. Ritchie, **R.T. Hepple**, T. Doherty and D. Paterson. Similar Adaptations in Capillarization and Citrate Synthase Activity in Response to Endurance Training in Older and Young Men. *Journal of Gerontology Biological Sciences* 66(9): 957-964, 2011. PMID: 21715648
50. M. Picard, T. Taivassalo, G. Gouspillou, and **R.T. Hepple**. Mitochondria: Isolation, Structure, and Function. *Journal of Physiology* 589.18: 4413-4421, 2011. PMID: 21708903

51. M.M. Thomas, C. Vigna, A.C. Betik, A.R. Tupling, and **R.T. Hepple**. Cardiac Calcium Pump Inactivation and Nitrosylation in Senescent Rat Myocardium is not Attenuated by Long-term Treadmill Training. *Experimental Gerontology* 46(10): 803-810, 2011. PMID: 21763413
52. M. Picard, D. Ritchie, M.M. Thomas, K.J. Wright, and **R.T. Hepple.** Alterations in Intrinsic Mitochondrial Function with Aging are Fiber Type-specific and do not Explain Differential Atrophy between Muscles. *Aging Cell* 10(6): 1047-1055, 2011. PMID: 21933339
53. M. Picard, **R.T. Hepple**, and Y. Burelle. Mitochondrial Functional Specialization in Glycolytic and Oxidative Muscle Fibers: Tailoring the Organelle for Optimal Function. *American Journal of Physiology Cell Physiology.* 302(4): C629-641, 2012. PMID: 22031602
54. S.L. Rowan, K.A. Rygiel, F.M. Purves-Smith, N.M. Solbak, D.M. Turnbull and **R.T. Hepple**. Denervation Causes Fiber Atrophy and Myosin Heavy Chain Co-expression in Senescent Skeletal Muscle. *PLoS One* 7(1): e29082, 2012. PMID: 22235261
55. M. Picard, K.J. Wright, D. Ritchie, M.M. Thomas, and **R.T. Hepple.** Mitochondrial Function in Permeabilized Cardiomyocytes is Largely Preserved in the Senescent Rat Myocardium. *PLoS One* 7(8): e43003, 2012. PMID: 22912774
56. **R.T. Hepple**. Viewpoint: Muscle Atrophy is not always Sarcopenia. *Journal of Applied Physiology* 113(4): 677-679, 2012. PMID: 22518833
57. **R.T. Hepple**. Letter to the Editor: Treating Sarcopenia is Facilitated by an Understanding of its Cellular Basis. *Journal of Applied Physiology* 113(4): 685, 2012. PMID: 22896681
58. F.M. Purves-Smith, N.M. Solbak, S.L. Rowan, and **R.T. Hepple**. Severe Atrophy of Slow Fibers in Aging Muscle is Concealed by MHC Co-expression. *Experimental Gerontology* 47(12): 913-918, 2012. PMID: 22884852.
59. V.L. Johnsen, D.D. Belke, C.C. Hughey, D.S. Hittel, **R.T. Hepple**, L.G. Koch, S.L. Britton, and J. Shearer. Enhanced cardiac protein glycosylation (O-GlcNAc) of selected mitochondrial proteins in rats artificially selected for low running capacity. *Physiological Genomics* 45(1): 17-25, 2013. PMID: 23132757
60. G. Gouspillou, M. Picard, R. Godin, Y. Burelle and **R.T. Hepple**. Role of PGC-1α in denervation-induced atrophy in aged muscle: facts and hypotheses. *Longevity and Lifespan* 2: 13, 2013. PMID24472348
61. G. Gouspillou and **R.T. Hepple**. Facts and controversies in our understanding of how caloric restriction impacts the mitochondrion. *Experimental Gerontology* (Invited Review) 48(10): 1075-84, 2013. PMID: 23523973
62. M. Mofarrahi, Y. Guo, J.A. Haspel, A.M.K. Choi, E.C. Davis, G. Gouspillou, **R.T. Hepple**, R. Godin, Y. Burelle, and S.N. Hussain. Autophagic flux and oxidative capacity of skeletal muscles during acute starvation. *Autophagy* 9(10): 1604-20, 2013. PMID: 23955121
63. K.J. Wright, M.M. Thomas, A.C. Betik, D. Belke, and **R.T. Hepple**. Exercise Training Initiated in Late Middle Age Attenuates Fibrosis and Advanced Glycation End-product Accumulation in Senescent Rat Hearts. *Experimental Gerontology* 50(2): 9-18, 2014. PMID: 24280067

64. G. Gouspillou, N. Sgarioto, S. Kapchinsky, F.M. Purves-Smith, B. Norris, C. Pion, S. Barbat-Artigas, F. Lemieux, T. Taivassalo, J.A. Morais, M. Aubertin-Leuhedre, and **R.T. Hepple**. Increased sensitivity to mitochondrial permeability transition and myonuclear translocation of endonuclease G in atrophied muscle of physically active older men. *The FASEB Journal* 28(4): 1621-33, 2014. PMID: 24371120
65. F.M. Purves-Smith, N. Sgarioto, and **R.T. Hepple**. Fiber typing in aging muscle. *Exercise and Sport Sciences Reviews* 42(2): 45-52, 2014 (Invited). PMID: 24508741
66. G. Gouspillou, N. Sgarioto, B. Norris, S. Barbat-Artigas, M. Aubertin-Leuhedre, J.A. Morais, Y. Burelle, T.Taivassalo, and **R.T. Hepple**. The relationship between muscle fiber type-specific PGC-1α content and mitochondrial content varies significantly between rodent models and humans. *PLoS One* 9(8): e103044, 2014. PMID: 25121500
67. **R.T. Hepple**. Mitochondrial Involvement and Impact in Aging Skeletal Muscle. *Frontiers in Aging Neuroscience* 6: 211, 2014 (Invited). PMID: 25309422
68. G. Gouspillou, C. Scheede-Bergdahl, S. Spendiff, F.M. Purves-Smith, B. Meehan, H. Mlynarski, E. Archer-Lahlou, N. Sgarioto, J. Rak, T. Taivassalo, **R.T. Hepple***, and R.T. Jagoe*. Severe Mitochondrial Dysfunction Persists Two Months Following Chemotherapy in Mouse Skeletal Muscle. *Dual senior author. *Scientific Reports* 5: 8717, 2015. PMID: 25732599
69. P. D. Neufer, M.M. Bamman, D.M. Muoio, C. Bouchard, D.M. Cooper, B.H. Goodpaster, F.W. Booth, W.M. Kohrt, R.E. Gerszten, M.P. Mattson, **R.T. Hepple**, W.E. Kraus, M.B. Reid, S.C. Bodine, J.M. Jakicic, J.L. Fleg, J.P. Williams, L. Joseph, M. Evans, P. Maruvad, M. Rodgers, M. Roary, A.T. Boyce, J.K. Drugan, J.I. Koenig, R.H. Ingraham, D. Krotoski, M. Garcia-Cazarin, J.A. McGowan, and M.R. Laughlin. Understanding the Cellular and Molecular Mechanisms of Physical Activity-induced Health Benefits. *Cell Metabolism* 22(1): 4-11, 2015. PMID: 26073496
70. **R.T. Hepple** and C.L. Rice. Innervation and Neuromuscular Control in Ageing Skeletal Muscle. *The Journal of Physiology* 594.8: 1965-78, 2016 (Invited Review). PMID: 26437581
71. G.A. Power, F.C. Minozzo, S. Spendiff, M-E. Filion, Y. Konokhova, M. Purves-Smith, M. Aubertin-Leuhedre, C. Pion, J.A. Morais, W. Herzog, **R.T. Hepple**, T.Taivassalo, and D.E. Rassier. Reduction in single muscle fiber rate of force development with aging is not attenuated in world class older masters athletes. *American Journal of Physiology Cell Physiology* 310[4]: C318-27, 2016. PMID: 26632598
72. Y. Konokhova, S. Spendiff, N. MacMillan, S. Kapchinsky, C. Pilon, M. Aubertin-Leuhedre, J. Morais, R.T. Jagoe, **R.T. Hepple**, and T. Taivassalo. Failed upregulation of TFAM protein and mtDNA copy number in oxidatively deficient single fibers of chronic obstructive pulmonary disease locomotor muscle. *Skeletal Muscle* 18[6]: 10, 2016. PMID: 26893822
73. G.A. Power, M.D. Allen, K.J. Gilmore, D.W. Stashuk, T. Doherty, **R.T. Hepple**, T. Taivassalo, and C.L. Rice. Motor unit number and transmission stability in octogenarian world class athletes: can age-related deficits be out-run? *Journal of Applied Physiology* 121(4): 1013-1020, 2016. PMID: 27013605
74. **R.T. Hepple**. Altered Mitochondrial Function in Aging Cardiac and Skeletal Muscle. *Free Radical Biology & Medicine* 98: 177-86, 2016 (Invited Review). PMID: 27033952
75. G. D. Cartee, **R.T. Hepple**, M.M. Bamman and J.R. Zierath. Perspective: Exercise Promotes Healthy Aging of Skeletal Muscle. *Cell Metab.* 23(6): 1034-47, 2016 (Invited Review)

PMID: 27304505

76. S. Aare, S. Spendiff, M. Vuda, D. Elkrief, A. Perez, Q.Wu, D. Mayaki, S.N. Hussain, S. Hettwer, and **R.T. Hepple**. Failed Reinnervation in Aging Skeletal Muscle. *Skeletal Muscle* 6(1): 29, 2016. PMID: 27588166.
77. F. St. Jean-Pelletier, C.H. Pion, J-P. Leduc-Gaudet, N. Sgarioto, I. Zovile, S. Barbat-Artigas, O. Reynaud, F. Alkaterji ,F.C. Lemieux, A. Grenon, P. Gudreau, **R.T. Hepple**, S. Chevalier, M. Belanger, J.A. Morais, M. Aubertin-Leuhedre, and G. Gouspillou. The impact of aging, physical activity, and pre-frailty on skeletal muscle phenotype, mitochondrial content and intramyocellular lipid in men. *Journal of Cachexia, Sarcopenia and Muscle* (In press). PMID: 27897402.
78. G. Gouspillou and **R.T. Hepple**. Mitochondria in skeletal muscle health, aging and diseases. Front Physiol. 7: 446, 2016. PMID: 27766080.
79. S. Spendiff, M. Vuda, S. Aare, T. Gove, G. Gouspillou, S. Kapchinsky, J. Morais, C. Pilon, M. Aubertin-Leuhedre, S. Hettwer, T. Taivassalo and **R.T. Hepple**. Denervation Drives Mitochondrial Dysfunction in Skeletal Muscle of Octogenarians. *The Journal of Physiology* 594.24: 7361-7379, 2016. PMID: 27619626
80. O. Falegan, H. Vogel, D. Hittel, L. Koch, S. Britton, **R.T. Hepple**, J. Shearer. High aerobic capacity mitigates changes in the plasma metabolic profile associated with aging. *J. Proteome Res.* In Press.

Book Chapters:

1. **R.T. Hepple**, Alterations in Mitochondria and their Impact in Aging Skeletal Muscle. pp. 135-158. *In:* Sarcopenia – Age-Related Muscle Wasting and Weakness: Mechanisms and Treatments, Gordon Lynch (Editor), Springer Publishing, 2011.

Published Proceedings:

1. **R.T. Hepple**, J.L. Hagen, D.J. Krause and D.J. Baker. The role of impaired O_2 transfer from blood to muscle mitochondria in VO_{2max} decline with aging. *In:* Scientific Proceedings from the 6th World Congress on Aging and Physical Activity, P. 19-24, Edited by G.R. Jones, A.W. Taylor and N.A. Ecclestone, ISBN 0-9688516-1-4, 2005.

Other:

1. **R.T. Hepple** (2007), "Muscle Mitochondrial Function and Biogenesis with Aging", *In:* Mitochondrial Biogenesis: Processes, Regulation, Functions and Disease, Edited by D.A. Hood, The Biomedical & Life Sciences Collection, Henry Stewart Talks Ltd, London (online at http://www.hstalks.com/?t=BL0151490-Hepple) (Invited)

Theses:

1. **Hepple, R.T.** VO_2 kinetics and peripheral blood flow in idiopathic heart failure and healthy sedentary subjects. M.Sc. Thesis, University of Toronto, 1992.
2. **Hepple, R.T.** Quantitating the capillary supply and the cardiorespiratory response to maximal exercise in older men: a training study. Ph.D. Dissertation, University of Toronto, 1996.

(D) AWARDS

2014-16 ·Nesbitt-McMaster Award for Excellence in Medicine and Surgery, Research Institute of the McGill University Health Centre. $5,000

2013-14 ·FRQS Chercheur Boursiers – Senior; Une approche intégrative vers la compréhension et le traitement de l'atrophie musculaire due au vieillissement; $40,000

2007-10 ·AHFMR Senior Scholar; An Integrative Approach Towards Understanding the Mechanisms of Sarcopenia; $995,000

2003 ·Special Recognition Canadian Institutes of Health Research Institute of Aging New Investigator Award (given to the top ranked applicant in the CIHR Open Competition in the field of research on aging); $10,000

2003-08 ·Canadian Institutes of Health Research Institute of Aging New Investigator; $250,000

2002-07 ·Heart and Stroke Foundation of Canada New Investigator; $250,000 (declined 2003-07 portion upon receiving CIHR award)

(E) GRANTS AND RESEARCH CONTRACTS:

CURRENTLY HELD AS PI

2013- ·Canadian Institutes of Health Research, Operating Grant: *Mechanisms of Motor Unit Protection by Exercise Training in Aging Muscle*; $601,915 (2013-18; MOP125986)

2012- ·Canadian Institutes of Health Research, Operating Grant: *Relationship between Denervation, Mitochondrial Dysfunction, and Muscle Atrophy in Sarcopenia*; $593,140 (2012-17; MOP119583)

PREVIOUSLY HELD -

2009-13 ·Canadian Institutes of Health Research, Operating Grant: *Canadian Longitudinal Study of Aging Phase III: Initial Tracking and Comprehensive Cohorts.* Co-Investigator; no monetary value to R.T. Hepple

2012-13 ·Quebec Network for Research on Aging, Pilot Project Grant: Évaluation des effets d'une supplémentation en protéine combinée à un programme en résistance sur les caractéristiques corporelles et physiologiques au niveau musculaire chez des hommes âgées pré-frêles et non frêles. Co-investigator (PI: M. Aubertin-Leuhedre); $15,000 (2012-13)

2012 ·Canadian Institutes of Health Research, Dissemination Event Grant to fund the symposium: *Skeletal Muscle Dysfunction in Critical Care Medicine*; Principal Investigator; $25,000

·Quebec Network for Research on Aging, Pilot Project Grant: Caractérisations physiologiques et comparaison de la qualité musculaire chez des aînés sédentaires et très actifs. Co-investigator (PI: M. Aubertin-Leuhedre); $14,400

2012-13 ·Canada Foundation for Innovation, Leaders Opportunity Fund, *Muscle Aging Diagnostics Laboratory*. Principal Investigator; $181,000

2005-11 ·Canadian Institutes of Health Research, Operating Grant: *Interventions to maintain skeletal muscle aerobic function with aging.* Principal Investigator; $490,000

2007-10 ·Canadian Institutes of Health Research, Operating Grant: *Strategies for combating sarcopenia: insights from exercise training and caloric restriction.* Principal Investigator; $315,000

2005-10 ·Natural Sciences and Engineering Research Council. Title: *Regulation of Performance in Contracting Skeletal Muscle.* Principal Investigator; $148,000

2006-09 ·Canadian Institutes of Health Research, Operating Grant: *Frailty, inflammatory mechanisms and adverse health outcomes*; Co-Investigator; $177,000

2005-06 ·Canadian Institutes of Health Research, Operating Grant: *Mechanisms of Sarcopenia*; Principal Investigator; $79,712

2005-06 ·Pfizer, Research Agreement. Title: *Effect of life long exercise on gene expression in aging skeletal muscle: Implications for sarcopenia*. Principal Investigator. $123,000

2004-05 ·Brenda Strafford Foundation Chair in Geriatric Research. Pilot Project Grant. Title: *Effect of life long exercise on gene expression in aging skeletal muscle: Implications for sarcopenia and resulting frailty.* Principal Investigator. $24,500

2003-06 ·Canadian Institutes of Health Research, Special Science of Aging Knowledge Environment (SAGE-KE) Grant. Title: *The Physiology of Aging Skeletal Muscle;* (Contributing Editor to SAGE-KE online journal). Principal Investigator. $15,000

2002-05 ·Canadian Institutes of Health Research, Operating Grant. Title: *Influence of Sarcopenia on Aerobic Performance in Aged Skeletal Muscles.* Principal Applicant. $257,244

2001-02 ·Canadian Institutes of Health Research, Operating Grant. Title: *Determinants of Aerobic Metabolic Performance in Healthy and Aged Skeletal Muscles*. Principal Applicant. $110,026

2000-01 ·Alberta Heritage Foundation for Medical Research, Major Equipment Grant; $35,000

·URGC Starter Grant. Principal Applicant. $9,829

1999-2000 ·Alberta Innovation and Science, Research Excellence Envelope. Principal Applicant. $50,800

·Faculty of Kinesiology Start-up Grant (through the Alberta Heritage Foundation for Medical Research). Principal Applicant. $50,000

PREVIOUSLY HELD – CO-APPLICANT/COLLABORATOR/CO-INVESTIGATOR

2009-15 ·Canadian Institutes of Health Research, Emerging Team Grant: *Development, Testing and Knowledge Translation of Innovative Approaches to Optimize Gait and Balance of Older Adults.* Co-Investigator; no monetary value to R.T. Hepple