

Peter J. Adhihetty, Ph.D.

Curriculum Vitae

ADDRESS

University of Florida
Department of Applied Physiology and Kinesiology
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ACADEMIC APPOINTMENTS

Jan.09-pres **Assistant Professor**, University of Florida, Department of Applied Physiology and Kinesiology, Gainesville, Florida

FELLOWSHIPS

**Jul. 07-
Dec.08** **Post-Doctoral Research Fellow**, Department of Neurology, Weill Cornell Medical College, New York, NY, USA
Mentor: Dr. Flint Beal
Primary research focus: Mitochondrial dysfunction in Huntington's disease.

**Feb. 06-
Jul. 07** **Post-Doctoral Research Fellow**, Department of Biology, York University, Toronto, ON, Canada
Mentor: Dr. David A. Hood
Research: Apoptosis in aged and diseased skeletal muscle.

EDUCATION

Feb. 2006 **Doctor of Philosophy, with Distinction (Top 5%)**
Supervisor: Dr. David A. Hood
Dissertation: **The role of mitochondrially-mediated apoptosis in skeletal muscle following altered contractile activity.**
Department of Biology, York University, Toronto, ON, Canada

Sept. 1999 **Master of Science**
Supervisor: Dr. Enzo Cafarelli
Thesis: **An acute alteration in vastus lateralis muscle length causes a change in motor unit discharge rate that is not mediated by muscle spindle activation.**
Department of Kinesiology and Health Science, York University, Toronto, ON, Canada

Apr. 1997 **Honours Bachelors of Science, Biology/Psychology**
Faculty of Pure and Applied Science, York University, Toronto, ON, Canada.

SCHOLARSHIPS/AWARDS

Jun. 2007	Danish Council for Scientific Research (\$300,000 for 3y-declined)
Apr. 2006	Canadian Governor General's Academic Gold Medal Nominee
Feb. 2006	Faculty of Graduate Studies Dissertation Prize Nominee
Nov. 2005	Graduate Student Award-Winner-CSEP (\$500)
Sept. 2004	R.H. Haynes Memorial Fellowship for Academic Excellence (\$5000)
July 2000-2004	Heart and Stroke Foundation of Canada-Doctoral Fellowship (\$19,600/y)
Jan. 2002	Graduate Student Award-Runner-Up-OEP (\$300)
June 2000	Dean's Excellence Award, Academic Achievement (\$3000)
Sept. 1997	York University Graduate Entrance Scholarship (\$3000)

PUBLICATIONS

22. Chabi B., Menzies K., **Adhihetty P.J.**, and D.A. Hood. Effect of chronic contractile activity and exercise on SIRT1. (*Am J Physiol*-Submitted).
21. Joseph A.M., Ljubicic V., **Adhihetty P.J.**, and D.A. Hood. Biogenesis of the mitochondrial Tom40 channel in skeletal muscle from aged animals and its adaptability to chronic contractile activity (*Am J Physiol*-Submitted).
20. Ljubicic V., Joseph A.M., **Adhihetty P.J.**, Huang J.H., Saleem A., Ugucioni G., and D.A. Hood. Molecular basis for an attenuated mitochondrial adaptive plasticity in aged skeletal muscle. (*Aging*-In Press).
19. Chaturvedi R.K., **Adhihetty P.J.**, Shukla S., Hennessy T., Calingasan N., Yang L., Starkov A., Kiaei M., Cannella M., Sassone J., Ciammola A., Squitieri F., and M.F. Beal. Impaired PGC-1 α function in muscle in Huntington's disease. *Hum Mol Genet* 18: 3048-3065 2009.
18. **Adhihetty P.J.**, Ugucioni G., Pilegaard H., Leick L., Hidalgo J., Florit S., Comes G and D.A.Hood. The role of PGC-1 α on mitochondrial function and apoptotic susceptibility in muscle. *Am J Physiol (Cell Physiol)* 297: C217-225, 2009.
17. Saleem A, **Adhihetty P.J.**, and D.A.Hood. Role of p53 in mitochondrial biogenesis and apoptosis in skeletal muscle. *Physiol Genomics* 37: 58-66, 2009.
16. **Adhihetty P.J.**, and M.F. Beal. Creatine and its potential therapeutic value for targeting cellular energy impairment in neurodegenerative diseases. *Neuromolecular Medicine* 10: 275-290, 2008.
15. **Adhihetty P.J.**, O'Leary M.F., and D.A. Hood. Mitochondria in skeletal muscle: Adaptable rheostats of apoptotic susceptibility. *Exerc Sport Sci Rev* 36, 116-121, 2008.
14. **Adhihetty P.J.**, Taivassalo T., Haller R., Walkinshaw D.R. and D.A. Hood. The effect of endurance training on the expression of mitochondrial biogenesis- and apoptosis-related

- proteins in skeletal muscle of patients with mtDNA defects. *Am J Physiol (Endocrinol Metab)* 293 (3): E672-680, 2007.
13. **Adhihetty P.J.**, O'Leary M.F., Chabi B., Wicks K.L. and D.A. Hood. Effect of denervation on mitochondrially-mediated apoptosis in skeletal muscle. *J Appl Physiol* 102 (3): 1143-51, 2007.
 12. **Adhihetty P.J.**, Ljubicic V. and D.A. Hood. Effect of chronic contractile activity on SS and IMF mitochondrial susceptibility.in skeletal muscle. *Am J Physiol (Endocrinol Metab)* 292 (3): E748-755, 2007.
 11. Chabi B., **Adhihetty P.J.**, Ljubicic V. and D.A. Hood. How is mitochondrial biogenesis affected in mitochondrial disease? *Med Sci Sports Exerc* 37: 2102-2110, 2005.
 10. Ljubicic V., **Adhihetty P.J.** and D.A. Hood. Application of animal models: chronic electrical stimulation-induced contractile activity. *Can J Appl Physiol* 30(5): 625-643, 2005.
 9. **Adhihetty P.J.**, Ljubicic V., Menzies K., and D.A. Hood. Differential susceptibility of subsarcolemmal and intermyofibrillar mitochondria to apoptotic stimuli. *Am J Physiol (Cell Physiol)* 289: C994-1001, 2005.
 8. Ljubicic V., **Adhihetty P.J.** and D.A. Hood. Role of UCP3 in state 4 respiration during contractile activity-induced mitochondrial biogenesis. *J Appl Physiol* 97 (3): 976-983, 2004.
 7. **Adhihetty P.J.** and D.A. Hood. Mechanisms of apoptosis in skeletal muscle. *Basic Appl Myol* 13 (4):171-179, 2003.
 6. Binas B., Han X-X., Erol E., Luiken J.F.P., Glatz J.F.C., Dyck D.J., Mortazavi R., **Adhihetty P.J.**, Hood D.A., and A. Bonen. A null mutation in H-FABP only partially inhibits skeletal muscle fatty acid metabolism. *Am J Physiol (Endocrinol Metab)* 285: E481-E489, 2003.
 5. Irrcher I., **Adhihetty P.J.**, Joseph A-M., Ljubicic V., and D.A. Hood. Regulation of mitochondrial biogenesis in muscle by endurance exercise. *Sports Med* 33 (11): 783-793, 2003.
 4. Irrcher I., **Adhihetty P.J.**, Sheehan T., Joseph A.M., and D.A. Hood. PPARgamma coactivator-1 alpha expression during thyroid hormone- and contractile activity-induced mitochondrial adaptations. *Am J Physiol (Cell Physiol)* 284 (6): C1669-1677, 2003.
 3. **Adhihetty P.J.**, Irrcher I., Joseph A.M., Ljubicic V., and D.A. Hood. Plasticity of skeletal muscle mitochondria in response to contractile activity *Exp Physiol* 88(1): 99-107, 2003.
 2. Hood D.A., **Adhihetty P.J.**, Colavecchia M., Gordon J.G., Irrcher I., Joseph A.M., Lowe S.T., and Rungi, A.A. Mitochondrial biogenesis and the role of the protein import pathway. *Med Sci Sports Exerc* 35 (1):86-94, 2003.

1. Primeau A.J., **Adhihetty P.J.**, and D.A. Hood. Apoptosis in skeletal and heart muscle. *Can J Appl Physiol* 27(4):349-395, 2002.

ABSTRACTS AND PRESENTATIONS

41. Hood D.A., Chabi B., Connor M.K., Irrcher I., Joseph A-M., Ljubicic V., **Adhihetty P.J.**, Huang J., Saleem A., Ugucioni G., and K.J. Menzies. Mechanisms of mitochondrial biogenesis in muscle: effect of exercise and age. Proceedings of the Asian Society for Mitochondrial Research and Medicine, Nov.7-9, 2008, Tianjin, China.
40. Kazak L., **Adhihetty P.J.**, Tarnopolsky M.A. and D.A. Hood. Compensatory responses of skeletal muscle protein expression in patients with Mitochondrial myopathy, Encephalopathy, Lactic Acidosis, and Stroke-like episodes (MELAS). *Ontario Exercise Physiology Conference*, Jan.25-27, 2008.
39. Ugucioni G., **Adhihetty P.J.**, Pilegaard H. and D.A. Hood. Evaluation of the essential role of PGC-1 α during contractile activity-induced mitochondrial biogenesis. *Ontario Exercise Physiology Conference*, Jan.25-27, 2008.
38. Joseph A-M, Huang J.H., **Adhihetty P.J.**, Ljubicic V., and David A. Hood. Mitochondrial protein import and assembly dynamics in response to chronic contractile activity in skeletal muscle of young and aged animals. *FASEB J* 22: 1163.17, 2008.
37. Ljubicic V., **Adhihetty P.J.**, Joseph A-M, Huang J.H., Saleem A, Ugucioni G, Menzies K.J. and David A. Hood. Plasticity of aged skeletal muscle: chronic contractile activity-induced adaptations in muscle and mitochondrial function. *FASEB J* 22: 754.9, 2008.
36. Chaturvedi R.K., **Adhihetty P.J.**, Calingasan N.Y., Kieai M., Yang B., Thomas B., Hennessey T., Shukla S., and M.F.Beal. PGC-1 α mediated energy metabolism dysfunction and hepatic steatosis in Huntington's disease mice under chronic energy deprivation condition. *Society for Neuroscience*, 255.2/N8, Nov.3-7, 2008.
35. Ugucioni G., **Adhihetty P.J.**, L. Leick, S. Florit, G. Comes, J. Hidalgo, H. Pilegaard and D.A. Hood. Tissue-specific mitochondrial adaptations in PGC-1 α null mice. *Appl Physiol Nutr and Metab* 32: Supplement 1, S87, 2007.
34. **Adhihetty P.J.**, Pilegaard H., Leick L., Florit S., Comes G., Hidalgo J., and D.A. Hood. Mitochondrial function and protein expression profile in skeletal muscle from PGC-1 α -null mice. *FASEB J* 21: 767.6, 2007.
33. Joseph A-M, **Adhihetty P.J.**, and D.A. Hood. Tom40 import and TOM complex assembly kinetics in subsarcolemmal and intermyofibrillar mitochondria. *FASEB J* 21: 921.2, 2007.
32. Ljubicic V., **Adhihetty P.J.**, Menzies K.J., Binas B., Bonen A., and D.A. Hood. Functional characteristics of subsarcolemmal and intermyofibrillar mitochondria isolated from H-FABP deficient mice. *Integrative Physiology of Exercise Meeting*, Sept. 27-30, 2006.

31. O'Leary M.F.N., **Adhihetty P.J.**, Chabi B., and D.A. Hood. Mitochondrial function and apoptotic proteins in denervated muscle. *Ontario Exercise Physiology Conference*, Jan.27-29, 2006.
30. O'Leary M.F.N., **Adhihetty P.J.**, Chabi B., and D.A. Hood. Effect of denervation on mitochondrial function and the expression of apoptotic related proteins. *FASEB J* 20: A338, 2006.
29. Chabi B., **Adhihetty P.J.**, O'Leary M.F.N., and D.A. Hood. Regulation of the NAD⁺-dependent histone deacetylase Sirt1 in conditions of muscle use and disuse. *FASEB J* 20: A389, 2006.
28. **Adhihetty P.J.**, Ljubicic V., O'Leary M.F.N., and D.A. Hood. The effect of chronic muscle use and disuse on mitochondrial apoptotic susceptibility. *Can J Appl Physiol* 30 (5) Supplement, 2005.
27. Chabi B., **Adhihetty P.J.**, Ljubicic V., Menzies K.J., and D.A. Hood. Expression of the NAD⁺-dependent histone deacetylase SIRT1 in exercised rats. *Proc 48th Annual Meeting of the Canadian Federation of Biological Sciences Conference*, June-21-24, p120, 2005.
26. Ljubicic V., Cambell S.E., Han X-X., **Adhihetty P.J.**, Binias B., Bonen A., and D.A. Hood. H-FABP ablation alters skeletal muscle mitochondrial function. *Proc 48th Annual Meeting of the Canadian Federation of Biological Sciences Conference*, June-21-24, p.85, 2005.
25. Chabi B., **Adhihetty P.J.**, and D.A. Hood. Expression of the NAD⁺-dependent histone deacetylase SIRT1 in exercised rats. *Ontario Exercise Physiology Conference*, Jan. 28-30, 2005.
24. **Adhihetty P.J.**, Taivassalo T., Haller R.G., and D.A. Hood. Effect of endurance training on mitochondrial proteins and SIRT1 in patients with mtDNA disorders. *FASEB J.* 19: A566, 2005.
23. Joseph A-M., **Adhihetty P.J.**, and D.A. Hood. Assembly profiles of subsarcolemmal and intermyofibrillar skeletal muscle mitochondria using blue native polyacrylamide gel electrophoresis (BN-PAGE). *FASEB J.* 19: A564, 2005.
22. Irrcher I., Sheehan T., Joseph A.M., **Adhihetty P.J.**, and D.A. Hood. Rapid and transient regulation of signal transduction by thyroid hormone in fast- and slow-twitch skeletal muscle. *The Physiologist* 47 (4), 21.9, 2004.
21. **Adhihetty P.J.**, Menzies K., Ljubicic V., and D.A. Hood. Reactive oxygen species production in subsarcolemmal and intermyofibrillar mitochondria. *The Physiologist* 47 (4), 8.9, 2004.
20. **Adhihetty P.J.**, Pulla J-A., Amarshi F., Wicks K.L., and D.A. Hood. Effect of chronic muscle denervation on mitochondrial biogenesis and apoptosis. *Med Sci Sport Exerc* 36: S270, 2004.

19. **Adhihetty P.J.**, Watson C.A., Newell L.E. and D.A. Hood. Mitochondrial apoptotic susceptibility and biogenesis in p53-null mice. *FASEB J* 18: LB493, 2004.
18. **Adhihetty P.J.**, Watson C.A., Newell L.E., and D.A. Hood. The role of p53 on mitochondrially-mediated apoptosis and biogenesis in muscle. *Ontario Exercise Physiology Conference*, Jan. 23-25, 2004.
17. **Adhihetty P.J.** and D.A. Hood. Subsarcolemmal and intermyofibrillar mitochondrial susceptibility to ROS-induced apoptosis in chronically stimulated and control muscle. *Proc. 12th Int'l Biochemistry of Exercise Conference, Maastricht*, p.105, June 13-16, 2003.
16. Irrcher I., Joseph A-M, Sheehan T., **Adhihetty P.J.**, and D.A. Hood. Thyroid hormone-induced activation of signal transduction pathways in skeletal muscle. *FASEB J*, 17: LB88, 2003.
15. Edmonds L., **Adhihetty P.J.**, and D.A. Hood. Effect of contractile activity on Bcl-2 expression in skeletal muscle. *Ontario Exercise Physiology Conference*, Jan.25, 2003.
14. **Adhihetty P.J.**, Taivassalo T., Haller R.G., and D.A. Hood. Effect of endurance training on nuclear-encoded mitochondrial proteins in patients with mtDNA defects. *Med Sci Sport Exerc*, 35: S125, 2003.
13. Ljubicic V., **Adhihetty P.J.**, and D.A. Hood. Mitochondrial membrane remodelling and respiration during contractile activity-induced mitochondrial biogenesis. *Med Sci Sport Exerc* 35: S196, 2003.
12. Irrcher I., **Adhihetty P.J.**, Sheehan T.S., Joseph A-M, and D.A. Hood. Signaling pathways and PGC-1 α protein expression in T₃- and contractile activity-induced mitochondrial biogenesis. *Med Sci Sport Exerc* 35: S123, 2003.
11. **Adhihetty P.J.** and D.A. Hood. AIF and cytochrome c release from intermyofibrillar and subsarcolemmal mitochondria in response to H₂O₂. *CSEP Conference*, Oct.17, 2002.
10. Irrcher I., **Adhihetty P.J.**, Sheehan T., Joseph A-M., and D.A. Hood. PGC-1 protein expression during mitochondrial biogenesis. *CSEP Conference*, Oct.17, 2002.
9. Ljubicic V., **Adhihetty P.J.**, and D.A. Hood. Effect of chronic contractile activity on uncoupling protein-3 expression and respiration in skeletal muscle mitochondria. *Canadian Federation of Biological Sciences Conference*, June 14, 2002.
8. **Adhihetty P.J.** and D.A. Hood. Expression of pro- and anti-apoptotic proteins during mitochondrial biogenesis induced by chronic contractile activity of rat skeletal muscle. *FASEB J*, 16: 2002.
7. Ljubicic V., **Adhihetty P.J.**, and D.A. Hood. Effect of chronic contractile activity on uncoupling protein-3 mRNA and protein expression in skeletal muscle. *Ontario Exercise Physiology Conference*, Jan.19, 2002.

6. **Adhihetty P.J.** and D.A. Hood. Chronic contractile activity of skeletal muscle results in a dynamic remodeling of mitochondrial proteins involved in programmed cell death. *Ontario Exercise Physiology Conference*, Jan.19, 2002.
5. **Adhihetty P.J.** and D.A. Hood. Effect of chronic contractile activity on pro- and anti-apoptotic proteins in rat skeletal muscle. *Can J Appl Physiol*, 26: 458, 2001.
4. **Adhihetty P.J.** and D.A. Hood. Effect of contractile activity on subsarcolemmal and intermyofibrillar mitochondrial respiration and NF-KB DNA binding. *Med Sci Sport Exerc*, 33: S183, 2001.
3. **Adhihetty P.J.** and D.A. Hood. Effect of acute contractile activity on gene expression in rat slow- and fast-twitch fibre types. *FASEB J*, 15: A420, 2001.
2. **Adhihetty P.J.** and E. Cafarelli. Altering vastus lateralis muscle length causes an acute adaptation in the average motor unit discharge rate which is not mediated by muscle spindle activation. *Can J Appl Physiol*, 24:1999.
1. **Adhihetty P.J.** and E. Cafarelli. The effect of different muscle lengths on the motor unit discharge rate in human vastus lateralis muscle. *Ontario Exercise Physiology Conference*, Jan.27, 1998.

TEACHING EXPERIENCE

- | | |
|---------------------------|--|
| June-Sept/08 | Mentor , Jonathan Navi, Undergraduate Summer Internship, Weill Cornell Medical College. |
| Apr./07 – Jul./07 | Mentor , Giulia Ugucioni, Master’s Degree Candidate, York University. |
| Nov./06 – Apr./07 | Mentor , Giulia Ugucioni, Undergraduate Research Project and Dr.James Wu Research Internships for Science and Engineering, York University. |
| Apr./06 – Jul. /07 | Mentor , Ayesha Saleem, Master’s Degree Candidate, York University. |
| Jan./06 - Apr. /06 | Demonstrator , SC/KINE 4010.03, Exercise Physiology, York University. |
| June - Sept./05 | Lab Coordinator , SC/BIOL 1010, Biological Sciences, York University. |
| Sept./04 - Apr./05 | Demonstrator , SC/BIOL 1010, Biological Sciences, York University. |
| Sept. - Dec./04 | Demonstrator , SC/BIOL 3060.03, Animal Physiology, York University. |
| May/03 - Apr./04 | Mentor , Caroline Watson, NSERC Undergraduate Summer Research Program and Undergraduate Research Project, York University. |
| May - Sept./03 | Mentor , Jessica Pulla, NSERC Undergraduate Summer Research Program, York University. |

- Sept./00 - Apr./04** **Teaching Assistant**, AS/SOSC 2040.09, Nature and Human Nature, York University.
- May - Sept./02** **Mentor**, Farah Amarshi, NSERC Undergraduate Summer Research Program, York University
- Sept./01 - Apr./02** **Seminar Leader**, PH2204, Systems Physiology, Canadian Memorial Chiropractic College.
- Sept. - Dec./99** **Teaching Assistant**, SC/KINE 2049.04, Research Methods, York University.
- Jan. - Apr./99** **Demonstrator**, SC/KINE 4010.03, Exercise Physiology, York University.
- Jan. - Apr./98** **Demonstrator**, SC/KINE 4010.03, Exercise Physiology, York University.
- Sept. - Dec./98** **Demonstrator**, SC/KINE 3012.03, Human Physiology, York University.
- May - Sept./98** **Mentor**, Brandon Myers, NSERC Undergraduate Summer Research Program, York University
- Sept. - Dec./97** **Demonstrator**, SC/KINE 2031.03, Human Anatomy, York University.

GUEST LECTURES/INVITED SEMINARS

- Jan. 22, 2009** **11th Biennial Conference-Advances in Skeletal Muscle Biology in Health and Disease, University of Florida, *Invited Seminar*:** Skeletal muscle mitochondria: arbiters of cell death and survival.
- Aug. 11, 2006** **Centre for Immunology and Metabolism (CIM), University of Copenhagen, *Invited Seminar*:** The effect of chronic activity and inactivity on mitochondrially-mediated apoptosis in skeletal muscle.
- June 6, 2006** **Advanced Exercise Physiology I: Muscle** (SC/Kine 4440.03; York University). *Topic:* Mitochondrial Biogenesis (1.5 hour lecture; enrolment-35).
- May 16, 2006** **Advanced Exercise Physiology I: Muscle** (SC/Kine 4440.03; York University). *Topic:* Demonstration of various laboratory techniques (1.5 hour demonstration; enrolment-35).
- Mar. 9, 2004** **Science in Society** (Sacred Heart High School)
Topic: Interview of Scientist, Science at the University Level (2 hour lecture; enrolment-30)

- Nov. 25, 2003** **Physiological Basis of Fatigue** (SC/KINE 4445.03; York University).
Topic: Skeletal Muscle Apoptosis, Sarcopenia, Mitochondrial Myopathies
(1.5 hour lecture; enrolment-60)
- Mar. 26, 2001** **Exercise Physiology** (SC/KINE 4010.03; York University).
Topic: Neuromuscular Physiology (two-1hour lectures; enrolment-350)
- Apr. 2, 2001** **Exercise Physiology** (SC/KINE 4010.03; York University).
Topic: Cardiovascular Physiology (two-1hour lectures; enrolment-350)

COMMITTEES/SOCIETIES

- Sept. 2007-pres** Society for Neuroscience
Jan. 2003-pres American College of Sports Medicine
Jan. 2002-pres American Physiological Society
Oct. 2001-pres Canadian Society for Exercise Physiology
Jan. 2003 OEP Conference Award Committee
Jan. 2003 Chair of Muscle Metabolism Session, OEP Conference
Sept.99-2001 Recreation and Sports Graduate Student Rep., Biology
Sept. 97-99 Graduate Student Association Rep., Kinesiology

AD HOC REVIEWER

American Journal of Physiology
Journal of Applied Physiology
PlosOne
Experimental Physiology
Medicine and Science in Sports and Exercise

PROFESSIONAL DEVELOPMENT

- Nov. 17-
Dec.6, 2006** **Visiting Scientist-Copenhagen Muscle Research Center (CMRC),
University of Copenhagen, Research:** The effect of exercise on
mitochondrial biogenesis and mitochondrial function in PGC-1 α -null
mice.
- Aug. 11-28, 2006** **Visiting Scientist-Copenhagen Muscle Research Center (CMRC),
University of Copenhagen, Research:** Role of PGC-1 α on mitochondrial
function and mitochondrial protein expression in PGC-1 α -null mice.