

## **P. Darrell Neuffer, Ph.D.**

Associate Professor  
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### **Education**

1980-1984 B.S. West Virginia Wesleyan College  
1984-1986 M.S. Exercise Physiology, Ball State University - Human Performance Laboratory,  
Ball State University, Muncie, IN (advisor: David L. Costill, Ph.D.)  
1989-1993 Ph.D. Biochemistry, East Carolina University - East Carolina University School of  
Medicine, Greenville, NC (advisor: G. Lynis Dohm, Ph.D.)

### **Postdoctoral Training**

1993-1996 Molecular Cardiology, Department of Internal Medicine, University of Texas  
Southwestern Medical Center, Dallas, TX (advisor: R. Sanders Williams, M.D.)

### **Professional Experience**

1986-1989 Research Physiologist (Civilian GS-11), U.S. Army Research Institute of  
Environmental Medicine, Natick, MA  
1996-2002 Assistant Fellow, John B. Pierce Laboratory, New Haven, CT  
1998-2004 Assistant Professor, Cellular & Molecular Physiology, Yale University School of  
Medicine, New Haven, CT  
2002-2006 Associate Fellow, John B. Pierce Laboratory  
2004-2006 Associate Professor, Cellular & Molecular Physiology, Yale University  
2006-present Associate Professor, Exercise and Sport Sciences, East Carolina University  
2006-present Associate Professor, Department of Physiology, East Carolina University

### **Honors and Awards**

2007 President's Lecture Award, American College of Sports Medicine  
2005 Alumni Achievement Award, West Virginia Wesleyan College  
2002 John and Janice Fisher Visiting Scholar  
Human Performance Laboratory, Ball State University  
1993-1996 Postdoctoral Training Grant Fellowship, NIH  
1984 Cum Laude Graduate, West Virginia Wesleyan College

### **Research Interests**

Mitochondrial Bioenergetics, Cellular & Molecular Control of Skeletal Muscle Metabolism,  
Exercise Physiology

**Grants - Principal Investigator**

<u>Agency</u> :	<u>Grant</u> :
NIH RO1	DK073488-01 <i>Mitochondrial Bioenergetics and Etiology of Insulin Resistance</i> . Total award - \$1,187,622, 7/11/07 – 4-30/11.
NIH R01	AR 45372-01 <i>Molecular regulation of LPL in skeletal muscle</i> . Total award - \$1,175,968, 1999 – 2005.
Yale	Yale Diabetes Endocrinology Research Center Pilot Project Grant. <i>Diet and hormonal-induced transcriptional regulation of glucose and lipid metabolism genes in skeletal muscle</i> . Total award - \$40,000, 1998-2000.

**Pending Grants - Principal Investigator**

NIH RO1	DK074825-01 <i>Linking Mitochondrial Bioenergetics to Muscle Insulin Sensitivity</i> .
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**Grants – Coinvestigator**

NIH RO1	HL20634-20 (P.I. Gary W. Mack) <i>Blood volume and venous return in thermal strain</i> . Total award - \$1,691,657, 1998-2004.
NIH RO1	AG17163-01 (P.I. Loretta DiPietro). <i>Exercise and Glucose Regulation in Older Women</i> . Total award - \$1,662,560, 1999-2004.

**Professional Activities***Grant Reviews*

2008	NIH/CSR Ad Hoc Reviewer – Integrative Physiology of Obesity & Diabetes (IPOD) Study Section, 2/08 Meeting
2007	NIH/CSR Ad Hoc Reviewer - Cellular Aspects of Diabetes & Obesity (CADO) Study Section, 6/07 and 10/07 Meetings
2003-2007	NIH/CSR Reviewer – NRSA Pathophysiology Fellowships (F10) Study Section
12/2004	NASA Grant Reviewer – Muscle Biology peer review panel
09/2004	Programme grant application – The Wellcome Trust, London, UK.
05/2004	American Diabetes Association
09/2001	Programme grant application – The Wellcome Trust, London, UK.

*National Committees*

2006-present	Program Committee for American Physiological Society Specialty Conference entitled <i>Integrative Biology of Exercise-V</i> for Fall 2008
2005-present	Environmental & Exercise Physiology representative to the Nominating Committee, American Physiological Society
2005-present	Environmental & Exercise Physiology Programming Chair and Representative to the American Physiological Society Joint Programming Committee
2003-2006	Elected Councilor – Exercise & Environmental Physiology Section of the American Physiological Society
2002-2005	Appointed Member At Large - Joint Program Committee for Experimental Biology – American Physiological Society
2002-2004	Program Committee for American Physiological Society Specialty Conference entitled <i>Integrative Biology of Exercise-IV</i> for Fall 2004

**Scientific Journals**

- 1999-present Editorial Board – Journal of Applied Physiology  
 1992-present Reviewer – American Journal of Physiology, Journal of Physiology, FASEB Journal, FEBS Letter, Journal of Applied Physiology, Physiological Genomics, European Journal of Physiology, Diabetes, Experimental Physiology, Biochemistry & Biophysica Acta, Diabetes & Metabolism Reviews, MSSE.

**Professional Affiliations**

- 1998-present American Physiological Society  
 1999-present American Diabetes Association

**Teaching Experience**

- 2007 East Carolina University: EXSS 7335, Seminar.  
 1996-2006 Yale University: Cellular and Molecular Physiology 550a “Physiological Systems” – ~80 Graduate/Undergraduate Students – 10 Lectures  
 1997-2006 Yale University: Medical Physiology Case Conferences: ~10 medical/graduate students; 1.5 h/wk, 24 weeks  
 2003-2006 Yale University: CMP 520a, Current Perspectives in Physiology – Lecture and round table session every other year  
 1999 August Krogh Institute, Copenhagen, Denmark: “Molecular Muscle Biology” – 18 Graduate Students – 3 Lectures

**Laboratory Personnel**Postdoctoral Fellows

- 2006-present Ethan J. Anderson, Ph.D.  
 2002-2004 Hanae Akeda-Yamazaki, Ph.D. – Assistant Professor,  
 2000-2003 Robin Loft-Wilson, Ph.D. (coadvisor w/S. Segal) – Assistant Professor, College of William & Mary  
 2000-2002 James Stoppani, Ph.D. – Current position: Senior Scientific Editor, Weider Publications, Woodland Hills, CA  
 1998-2000 Henriette Pilegaard, Ph.D. – Current position: Associate Professor, August Krogh Institute, Copenhagen, Denmark

Graduate Students

- 2003-2006 Ethan Anderson (Doctoral), Cellular and Molecular Physiology, Yale University  
 2006-present Chien-Te (Peter) Lin (Doctoral) - Bioenergetics, East Carolina University  
 2006-present Dan Kane (Doctoral, Coadvisor w/R. Cortright) – Bioenergetics, East Carolina University  
 2007-present Oh Sung Kwon (Masters) –Exercise Physiology, East Carolina University

Undergraduate Students

- 2003-2005 Lydia Finley – Biology, Yale University; Currently Ph.D. Student, Harvard University  
 2003-2004 Laura Brenner – Biology, Yale University; Medical School  
 2003-Summer Jon McClain – Biology, Yale University  
 2001-2002 Sunita Puri – Biology, Yale University, Recipient of Undergraduate Summer Research Fellowship Award, American Physiological Society; Rhodes Scholar.  
 2001-Summer Joyce Sun – Biology, Yale University  
 1997-1998 Alexa Romberg – Biology, Yale University

Visiting Scientists

- 2000 David Cameron-Smith, Ph.D.  
 Current position: Associate Professor, School of Health Sciences, Deakin University, Victoria, Australia

**Thesis Committees**

- 2002 Rebecca Tunstall (Doctoral), Deakin University, Victoria, Australia  
 2006 Kristen Boyle (Doctoral), Bioenergetics, East Carolina University  
 Benjamin Bickman (Doctoral), Bioenergetics, East Carolina University  
 Elizabeth Fonteneau (Doctoral), Physiology, East Carolina University

**Institutional Activities**

- 1996-2006 John B. Pierce Laboratory - Safety Committee, Chair; Animal Care Committee; Core Equipment Committee, Chair; Search Committees

**Invited Presentations (past 9 years only)**

- 11/14/07 "Mitochondria, Exercise, and Free Radicals in Health and Disease". Exercise, Muscle & Metabolism 2007, The University of Melbourne, Melbourne, Australia  
 6/1/07 "The Molecular Basis of Exercise Training: From the Inside Looking Out". President's Lecture, American College of Sports Medicine, New Orleans, LA, 06/07.  
 3/22/07 "Mitochondrial Bioenergetics and Metabolic Disease". Stealth Peptides, Inc. Union League Club, New York, NY.  
 1/25/07 "Linking Mitochondrial Bioenergetics to the Etiology of Metabolic Disease" 10<sup>th</sup> Biennial Conference on Free Radical Biology, Department of Applied Physiology and Kinesiology, and the Center for Exercise Science, University of Florida, Gainesville, FL  
 11/13/06 "Linking Mitochondrial Bioenergetics to the Etiology of Metabolic Disease" Department of Health and Kinesiology, Texas A&M University, College Station, TX  
 10/6/06 "Is Mitochondrial Bioenergetics Linked to the Etiology of Insulin Resistance?" Diabetes Research and Training Center, Vanderbilt University, Nashville, TN  
 9/28/06 "Acute molecular responses to exercise: the basis for training adaptations" in Symposium entitled "Exercise-Induced Mitochondrial Biogenesis" J.O. Holloszy & D.H. Hood Chairs. ACSM conference on *Integrative Physiology of Exercise*. Indianapolis, IN  
 4/3/06 "Regulation of mitochondrial superoxide production in skeletal muscle" in Symposium entitled "Linking Mitochondrial Function in Skeletal Muscle to Disease." PD Neufer and DA Hood Chairs, Experimental Biology, San Francisco, CA 04/05.  
 9/29/05 "Mitochondrial Bioenergetics and CHO Metabolism: Pressing on the Gas and Stepping on the Brakes". Midwest American College of Sports Medicine Annual Conference, 40<sup>th</sup> Anniversary of the Human Performance Laboratory, Ball State University, Muncie, IN  
 5/12/05 "Linking mitochondrial bioenergetics to metabolic disease" Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX  
 3/21/05 "Exercise-induced changes in gene expression: clues to metabolic control in skeletal muscle" Department of Physiology, New York Medical College, Valhalla, NY  
 11/13/04 "Regulation of mitochondrial function in skeletal muscle." Departmental Retreat, Cell & Molecular Physiology, Yale University, New Haven, CT  
 06/10/04 "Exercise-induced changes in gene expression: clues to metabolic control in skeletal muscle". Department of Exercise & Sport Sciences. East Carolina University, Greenville, NC  
 10/07/03 "Kinetic Considerations of Muscle Adaptation" presentation as participant in International Olympic Committee Workshop entitled: "Genes, Performance, and Health", Chairpersons J.O. Holloszy and B. Saltin, Athens, Greece.  
 05/30/03 "Muscle Glycogen and Gene Expression" symposium presentation at the American College of Sports Medicine, San Francisco, CA  
 05/01/03 "Understanding the Acute Molecular Response to Exercise", Department of Integrative Biology, University of Missouri, Columbia, MO

- 04/30/03 “Regulation of PDK4 and UCP3 Gene Expression in Response to Exercise: Implications for Energy Metabolism”. Depart. of Physiology, University of Missouri, Columbia, MO
- 08/21/02 “Muscle Contraction Induced Gene Expression” Baltic Summer School, Copenhagen, Denmark
- 07/25/02 “By the Sweat of Your Brow or Is it in the Genes?” European Congress on Sports Sciences. Athens, Greece.
- 06/21/02 “Regulation of Transcription During Recovery from Exercise. 2nd Annual Symposium on Skeletal Muscle. University of Massachusetts, Amherst, MA
- 05/30/02 “Exercise as a Tool for Specific Gene Activation”, in symposia entitled: “From Genes to Athletic Performance: Augmentation of the Training Response”, Chair B. Saltin, IOC World Congress on Sports Sciences. St. Louis, MO
- 05/13/02 “Transcriptional Regulation of Metabolic Genes in Response to Exercise”, Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX
- 03/28/02 “Exercising Our Genes: A Key to the Cure in the 21<sup>st</sup> Century?” Ball State University, Muncie, IN
- 10/11/01 “Transcriptional Regulation of Metabolic Genes in Response to Exercise” – Department of Kinesiology & Applied Physiology, University of Colorado, Boulder, CO.
- 04/04/01 Symposium Chair – “Genomics and Molecular Basis of Exercise and Environmental Physiology: Molecular Control of Thermogenesis” Experimental Biology, Orlando, FL
- 10/29/99 “Molecular Biology: Application to Exercise Physiology” Tutorial Lecture - New England Chapter of the American College of Sports Medicine, Providence, RI
- 1/30/99 “Metabolic regulation of gene expression in skeletal muscle” The Dirk Pette Symposium - The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark
- 11/12/98 “Regulation of gene expression in skeletal muscle” Department of Biology, Williams College, Williamstown, MA.
- 7/19/97 “Contractile activity and skeletal muscle gene expression.” Biochemistry of Exercise 10<sup>th</sup> International Conference, Sydney, Australia.
- 5/19/97 “Regulation of Lipoprotein Lipase Expression in Skeletal Muscle.” Department of Endocrinology, School of Medicine, Yale University, New Haven, CT.

### Abstracts (past 8 years only)

- EJ Anderson, KE Boyle, JA Houmard, PD Neuffer. Obesity is Associated with Reduced Glutathione Content, Increased Mitochondrial H<sub>2</sub>O<sub>2</sub> Emitting Potential and a More Oxidized Redox Environment in Human Skeletal Muscle. American Diabetes Association, San Francisco, CA 06/08
- EJ Anderson, E. Rodriguez, R Lust, PD Neuffer. Evidence of Abnormal Mitochondrial Function in Permeabilized Fibers from Diabetic Human Myocardium. American Diabetes Association, San Francisco, CA 06/08
- ME Conniff, FD James, T-T Huang, PS Rabinovitch, PD Neuffer, DH Wasserman. A genetic increase in mitochondrial antioxidant capacity improves insulin action in the conscious mouse. American Diabetes Association, San Francisco, CA 06/08
- EJ Anderson, KE Boyle, JA Houmard, PD Neuffer. Excess dietary fat depletes glutathione, increases mitochondrial oxidant emitting potential and shifts redox balance to a more oxidized state in human skeletal muscle. Experimental Biology, San Diego, CA 04/08
- DA Kane, EJ Anderson, TL Woodlief, JW Price, BT Bickman, RN Cortright, PD Neuffer. Metformin Attenuates a Complex I Mediated Increase in Mitochondrial Oxidant Emitting Potential in Skeletal Muscle of Obese Zucker Rats. Experimental Biology, San Diego, CA 04/08
- RY Prasad, W Yang, TL Woodlief, RN Cortright, PD Neuffer, B Cathey, CJ Wingard. Metformin restores aortic ring responses of obese-diabetic Zucker rats. Experimental Biology, San Diego, CA 04/08

- EJ Anderson, HA Yamasaki, and PD Neufer. UCP3 attenuates mitochondrial H<sub>2</sub>O<sub>2</sub> production in skeletal muscle during recovery from exercise. Integrative Physiology of Exercise, Indianapolis, IN 09/06
- EJ Anderson and PD Neufer. High fat diet markedly elevates mitochondrial oxidant producing potential in skeletal muscle. (Environmental & Exercise Physiology Section Graduate Student Abstract Award) Experimental Biology, San Francisco, CA 04/06.
- EJ Anderson and PD Neufer. Mitochondrial superoxide production varies in different skeletal muscle fiber types. International Union of Physiological Sciences, San Diego, CA 04/05
- L Finley, H Yamazaki, EJ Anderson, and PD Neufer. Transient increase in PDH phosphorylation during recovery from exercise in rat skeletal muscle. International Union of Physiological Sciences, San Diego, CA 04/05
- H Pilegaard, J Birk, PD Neufer, B Saltin, M Sacchetti, M Mourtzakis, G Hardie, G van Hall and JFP Wojtaszewski. Influence of intralipid infusion on PDH regulation in human skeletal muscle at rest and during exercise. Integrative Biology of Exercise, Austin, TX, 10/04
- C. Lundby, M. Gassmann, P.D. Neufer, and H. Pilegaard. Normoxic exercise increases HIF-1 $\alpha$  mRNA transiently, and this response is decreased by endurance training. ECSS, Athens, Greece 08/04.
- S. B. Jørgensen, J. F. P. Wojtaszewski, B. Viollet, F. Andreelli, P. Scherling, S. Vaulont, P. D. Neufer, E. A. Richter and H. Pilegaard. Knockout of the  $\alpha$ 2-ampk isoform regulates exercise-induced increase in muscle IL-6 mRNA but not HKII, GLUT4 or PDK4 mRNA. AMPK meeting, Melbourne, Australia, 08/04
- S. B. Jørgensen, J. F. P. Wojtaszewski, B. Viollet, F. Andreelli, P. Scherling, S. Vaulont, P. D. Neufer, E. A. Richter and H. Pilegaard. Effect of  $\alpha$ 2-AMPK Isoform Knockout and Exercise on IL6, CPT1 and PGC1 mRNA in skeletal muscle. ADA, San Antonio, TX 06/04
- Akeda-Yamazaki H and Neufer PD. Carbohydrate Rapidly Reverses High Fat Diet-Induced Transcriptional Activation of the PDK4 Gene in Skeletal Muscle of Rats. Experimental Biology, Washington, DC 04/04
- Akeda-Yamazaki H, Hildebrandt AL, and Neufer PD. Carbohydrate Reverses Transcriptional Activation of the PDK4 Gene in Muscle During Recovery From Exercise. Experimental Biology, San Diego, CA 04/03
- Pilegaard H, van Hall G, Sacchetti M, Saltin B, and Neufer PD. Effect of Free Fatty Acids on Transcriptional Regulation of Metabolic Genes During Rest and Exercise in Human Skeletal Muscle. Experimental Biology, San Diego, CA 04/03
- Pilegaard H, Saltin B, and Neufer PD. Effect of endurance training on transcriptional regulation of metabolic genes in human skeletal muscle. Experimental Biology, New Orleans, LA 04/02
- Stoppani J, Hildebrandt AL, Sun J, and Neufer PD. Exercise training alters the transcriptional activity of metabolic genes in rat gastrocnemius muscle. Experimental Biology, New Orleans, LA 04/02
- Swoap SJ, Stephens NA, Garber GB, Sun J, Stoppani J, and Neufer PD. Effect of torpor on UCP expression in mouse tissues. Experimental Biology, New Orleans, LA 04/02
- Looft-Wilson RC, Neufer PD, and Segal SS. Expression of connexin mRNA isoforms in hamster microvessels. Experimental Biology, New Orleans, LA 04/02
- Keller C, Steensberg A, Pilegaard H, Osada T, Saltin B, Pedersen BK, Neufer PD. Transcriptional activation of the IL-6 gene in human contracting skeletal muscle – influence of muscle glycogen availability. International Society of Experimental Immunology, Baltimore, MD 05/01
- Pilegaard, H, Helge JW, Saltin B, and Neufer PD. Effect of Diet on the Transcriptional Regulation of Metabolic Genes in Human Skeletal Muscle During Recovery From Exercise. Experimental Biology, Orlando, FL 04/01
- Pilegaard, H, Helge JW, Saltin B, and Neufer PD. Effect of Preexercise Glycogen Content on Transcriptional Regulation of Metabolic Genes in Human Skeletal Muscle During Recovery from Exercise. Experimental Biology, Orlando, FL 04/01

- Stoppani, J, Hildebrandt, AH, and Neufer PD. Activation of AMP-Activated Protein Kinase Increases Transcription of Metabolic Genes in Rat Gastrocnemius Muscle. Experimental Biology, Orlando, FL 04/01
- Hildebrandt AL and Neufer PD. Exercise attenuates the fasting-induced transcriptional activation of metabolic genes in skeletal muscle. Experimental Biology, San Diego, CA 04/00.
- Pilegaard H, Ordway GA, Saltin B, and Neufer PD. Transcriptional regulation of metabolic genes during recovery from exercise in humans. Experimental Biology (Featured Presentation), San Diego, CA 04/00.

**Publications**

1. **Neuffer PD**, Costill DL, Fink WJ, Kirwan JP, Fielding RA, Flynn MG. Effects of exercise and carbohydrate composition on gastric emptying. *Med Sci Sports Exerc* 18(6):658-62,1986.
2. **Neuffer PD**, Costill DL, Fielding RA, Flynn MG, Kirwan JP. Effect of reduced training on muscular strength and endurance in competitive swimmers. *Med Sci Sports Exerc* 19(5):486-90,1987.
3. **Neuffer PD**, Costill DL, Flynn MG, Kirwan JP, Mitchell JB, Houmard J. Improvements in exercise performance: effects of carbohydrate feedings and diet. *J Appl Physiol* 62(3):983-8,1987.
4. Flynn MG, Costill DL, Hawley JA, Fink WJ, **Neuffer PD**, Fielding RA, Sleeper MD. Influence of selected carbohydrate drinks on cycling performance and glycogen use. *Med Sci Sports Exerc* 19(1):37-40,1987.
5. **Neuffer PD**, Young AJ, Sawka MN, Muza SR. Influence of skeletal muscle glycogen on passive rewarming after hypothermia. *J Appl Physiol* 65(2):805-10,1988.
6. Kirwan JP, Costill DL, Flynn MG, Mitchell JB, Fink WJ, **Neuffer PD**, Houmard JA. Physiological responses to successive days of intense training in competitive swimmers. *Med Sci Sports Exerc* 20(3):255-9,1988.
7. **Neuffer PD**, Young AJ, Sawka MN. Gastric emptying during exercise: effects of heat stress and hypohydration. *Eur J Appl Physiol* 58(4):433-9,1989.
8. **Neuffer PD**, Young AJ, Sawka MN. Gastric emptying during walking and running: effects of varied exercise intensity. *Eur J Appl Physiol* 58(4):440-5,1989.
9. **Neuffer PD**. The effect of detraining and reduced training on the physiological adaptations to aerobic exercise training. *Sports Med* 8(5):302-20,1989.
10. Young AJ, Sawka MN, **Neuffer PD**, Muza SR, Askew EW, Pandolf KB. Thermoregulation during cold water immersion is unimpaired by low muscle glycogen levels. *J Appl Physiol* 66(4):1809-16,1989.
11. Kirwan JP, Costill DL, Flynn MG, **Neuffer PD**, Fink WJ, Morse WM. Effects of increased training volume on the oxidative capacity, glycogen content and tension development of rat skeletal muscle. *Int J Sports Med* 11(6):479-83,1990.
12. Sawka MN, **Neuffer PD**. Interaction of water bioavailability, thermoregulation and exercise performance. In: Fluid Replacement and Heat Stress: National Academy of Sciences Workshop. Washington, DC: National Academy Press, 1990: 85-98.
13. Friedman JE, **Neuffer PD**, Dohm GL. Regulation of glycogen resynthesis following exercise. Dietary considerations. *Sports Med* 11(4):232-43,1991.
14. Houmard JA, Egan PC, **Neuffer PD**, Friedman JE, Wheeler WS, Israel RG, Dohm GL. Elevated skeletal muscle glucose transporter levels in exercise-trained middle-aged men. *Am J Physiol* 261(4 Pt 1):E437-43,1991.
15. **Neuffer PD**, Sawka MN, Young AJ, Quigley MD, Latzka WA, Levine L. Hypohydration does not impair skeletal muscle glycogen resynthesis after exercise. *J Appl Physiol* 70(4):1490-4,1991.
16. Levine L, Rose MS, Francesconi P, **Neuffer PD**, Sawka MN. Fluid replacement during sustained activity in the heat: nutrient solution vs. water. *Aviat Space Environ Med* 62(6):559-64,1991.
17. Houmard JA, Egan PC, Johns RA, **Neuffer PD**, Chenier TC, Israel RG. Gastric emptying during 1 h of cycling and running at 75% VO<sub>2</sub>max. *Med Sci Sports Exerc* 23(3):320-5,1991.
18. **Neuffer PD**, Shinebarger MH, Dohm GL. Effect of training and detraining on skeletal muscle glucose transporter (GLUT4) content in rats. *Can J Physiol Pharmacol* 70(9):1286-90,1992.
19. Sawka MN, Young AJ, Latzka WA, **Neuffer PD**, Quigley MD, Pandolf KB. Human tolerance to heat strain during exercise: influence of hydration. *J Appl Physiol* 73(1):368-75,1992.
20. Young AJ, Sawka MN, Quigley MD, Cadarette BS, **Neuffer PD**, Dennis RC, Valeri CR. Role of thermal factors on aerobic capacity improvements with endurance training. *J Appl Physiol* 75(1):49-54,1993.

21. Megeney LA, **Neufer PD**, Dohm GL, Tan MH, Blewett CA, Elder GC, Bonen A. Effects of muscle activity and fiber composition on glucose transport and GLUT-4. *Am J Physiol* 264(4 Pt 1):E583-93,1993.
22. Houmard JA, Hortobagyi T, **Neufer PD**, Johns RA, Fraser DD, Israel RG, Dohm GL. Training cessation does not alter GLUT-4 protein levels in human skeletal muscle. *J Appl Physiol* 74(2):776-81,1993.
23. **Neufer PD**, Carey JO, Dohm GL. Transcriptional regulation of the gene for glucose transporter GLUT4 in skeletal muscle. Effects of diabetes and fasting. *J Biol Chem* 268(19):13824-9,1993.
24. **Neufer PD**, Dohm GL. Exercise induces a transient increase in transcription of the GLUT4 gene in skeletal muscle. *Am J Physiol* 265(6 Pt 1):C1597-603,1993.
25. Carey JO, **Neufer PD**, Farrar RP, Veerkamp JH, Dohm GL. Transcriptional regulation of muscle fatty acid-binding protein. *Biochem J* 3:613-7,1994.
26. **Neufer PD**, DeVente JE, Tapscott EB, Dohm GL. Hindlimb perfusion induces GLUT1 and immediate early gene expression in skeletal muscle. *Am. J. Physiol.* 268:E866-E872, 1995.
27. Li K, **Neufer PD**, Williams RS. Nuclear responses to depletion of mitochondrial DNA in human cells. *Am J. Physiol.* 269: C1265-1270, 1995.
28. Garry DJ, Bassel-Duby RS, Richardson JA, Grayson J, **Neufer PD**, and Williams RS. Postnatal development and plasticity of specialized muscle fiber characteristics in the hindlimb. *Developmental Genetics.* 19:146-156, 1996.
30. **Neufer PD**, Benjamin IJ. Differential expression of  $\beta$ -crystallin and Hsp27 in skeletal muscle during continuous contractile activity: relationship to myogenic regulatory factors. *J. Biol. Chem.* 271:24089-24095, 1996.
31. **Neufer PD**, Ordway GA, Hand GA, Shelton JM, Richardson JA, Benjamin IJ, Williams RS. Continuous contractile activity induces fiber-type specific expression of Hsp70 in skeletal muscle. *Am. J. Physiol.* 271:C1828-C1837, 1996.
32. **Neufer PD**, Ordway GA, Williams RS. Transient regulation of c-fos,  $\alpha$ B-crystallin, and hsp70 in muscle during recovery from contractile activity. *Am. J. Physiol: Cell Physiology.* 274:C341-346, 1998.
33. **Neufer PD**. Contractile activity and skeletal muscle gene expression. In: *Biochemistry of Exercise X*. edited by M. Hargreaves and M. Thompson. Champaign, IL: Human Kinetics, 1998.
34. **Ordway PD, Neufer PD**, Chin ER, DeMartino GN. Chronic contractile activity upregulates the proteasome system in rabbit skeletal muscle. *J. Appl. Physiol.* 88:1134-1141, 2000.
35. Hildebrandt AL and **Neufer PD**. Exercise attenuates the fasting-induced transcriptional activation of metabolic genes in skeletal muscle. *Am. J. Physiol. Endocrinol. Metab.* 278: 278:E1078-1086, 2000.
36. Pilegaard H, Ordway GA, Saltin B, and **Neufer PD**. Transcriptional regulation of gene expression in human skeletal muscle during recovery from exercise. *Am J Physiol. Endocrinol Metab.* 279: E806-E814, 2000.
37. Keller C, Steensberg A, Pilegaard H, Osada T, Saltin B, Pedersen BK, and **Neufer PD**. Transcriptional activation of the IL-6 gene in human contracting skeletal muscle: influence of muscle glycogen content. *FASEB J.* 15:2748-2750, 2001.
38. Pilegaard H, Keller C, Steensberg A, Helge JW, Pedersen BK, Saltin B, and **Neufer PD**. Influence of pre-exercise muscle glycogen content on exercise-induced transcriptional regulation of metabolic genes. *J. Physiol.* 541:261-271, 2002.
39. Stoppani J, Hildebrandt AH, Sakamoto K, Cameron-Smith D, Goodyear LJ, and **Neufer PD**. 5'AMP-activated protein kinase activates transcription of metabolic genes in red and white skeletal muscle. *Am. J. Physiol. Endocrinol. Metab.* 283:E1239-E1248, 2002.
40. Pilegaard H, Saltin B, and **Neufer PD**. Exercise induces transient transcriptional activation of the PGC-1 gene in human skeletal muscle. *J. Physiol.* 546:851-858, 2003.

41. Pilegaard H, Saltin B, and **Neufer PD**. Effect of short-term fasting and re-feeding on transcriptional regulation of metabolic genes in human skeletal muscle. *Diabetes* 52:657-662, 2003.
42. Hildebrandt AL, Pilegaard H, and **Neufer PD**. Effect of exercise intensity and duration on the transcriptional activation of metabolic genes in rat skeletal muscle. *Am. J. Physiol. Endocrinol. Metab.* 285:E1021-E1027, 2003.
43. Pilegaard, H, and **Neufer PD**. Transcriptional regulation of PDK4 in skeletal muscle during and after exercise. *Proceedings of the Nutrition Society* 63:221-226, 2004.
44. Looft-Wilson R, Moffo A, **Neufer PD**, Segal SS. Independence of connexin mRNA and conduction from sympathetic innervation in hamster microvessels. *Microcirculation*. 11:397-408, 2004.
45. Jensen L, Pilegaard H, Saltin B, **Neufer PD**, and Hellsten Y. Effect of acute exercise and exercise training on VEGF splice variants in human skeletal muscle. *Am. J. Physiol.: Reg. Integ & Comp.* 287:R397-402, 2004.
46. Jørgensen S, Wojtaszewski JFP, Viollet B, Andreelli F, Hellsten Y, Schjerling P, Vaulont S, **Neufer PD**, Richter EA and Pilegaard H. Effects of  $\alpha$ -AMPK knockout on exercise-induced gene activation in mouse skeletal muscle. *FASEB J.* 19:1146-1148, 2005.
47. Pilegaard H, Osada T, Heldge JW, Saltin B, and **Neufer PD**. Substrate availability and transcriptional regulation of metabolic genes in human skeletal muscle during recovery from exercise. *Metabolism*. 54, 1048-1055, 2005.
48. Lundby C, Nordsborg N, Kusuhara K, Moller Kristensen K, **Neufer PD**, Pilegaard H. Gene expression in human skeletal muscle: alternative normalization method and effect of repeated biopsies. *Eur. J Appl. Physiol.* 95:351-360, 2005
49. DiPietro L, Dziura J, Yeckel CW, and **Neufer PD**. Exercise and Improved Insulin Sensitivity in Older Women: Evidence of the Enduring Benefits of Higher Intensity Training *J. Appl. Physiol.* 100:142-149, 2006.
50. Anderson EJ, and **Neufer PD**. Type II skeletal myofibers possess unique properties that potentiate mitochondrial H<sub>2</sub>O<sub>2</sub> generation *Am. J. Physiol.: Cell Physiology* 290:C844-C851, 2006.
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