BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Kenneth R. Wilund	Associate Professor
eRA COMMONS USER NAME KENNETH_WILUND	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Maryland, College Park, MD	B.S.	1990	Nutritional Science
University of Maryland, College Park, MD	M.P.M.	1993	Environmental Policy
University of Maryland, College Park, MD	Ph.D.	2000	Exercise Physiology
Univ. of Texas Southwestern Med. Center, Dallas, TX	(Post-doc)	2000-2004	Molecular Genetics

Personal Statement:

The primary focus of the research in my lab for the past several years has been to examine the individual and combined effects exercise training and nutritional factors on the health and quality of life of patients with kidney failure undergoing maintenance dialysis therapy. Most of our interventions have focused on the intradialytic period, as past research indicates that the hemodialysis procedure is associated with acute episodes of inflammation and oxidative stress that contribute to cardiovascular complications, muscle wasting, and other co-morbidities. Our largest study to date is an NIDDK-funded RCCT examining the efficacy of intradialytic whey protein supplementation and exercise training (cycling) on cardiovascular disease risk and physical function (R01DK084016; clinicaltrials.gov#NCT01234441). We also have an ongoing study examining the effects of B-hydroxymethylbutyrate (HMB) supplementation on muscle strength and function, as well as a pilot study examining the effects of eating during dialysis on intradialytic hypotension and dialysis efficiency. Lastly, we recently initiated a pilot study examining the efficacy of a comprehensive social cognitive theory-based intervention designed to improve physical activity and nutrition behavior in hemodialysis patients. These projects each support the overall research goal in my lab of examining the efficacy of novel approaches for improving the health and quality of life of patients with kidney failure.

Professional Experience:

1990-93 Graduate Research Asst., Department of Geography, University of Maryland, College Park, MD
1993-96 Legislative Analyst, Argonne National Laboratory, Washington, DC
1996-2000 Graduate Teaching and Research Asst, Department of Kinesiology, University of Maryland College Park, MD
2000-2004 Post-Doctoral Fellow (National Research Service Award) in Molecular Genetics, University of Texas Southwestern Medical Center, Dallas, TX
2004-2010 Assistant Professor, Department of Kinesiology and Community Health, Division of Nutritional Sciences, University of Illinois, Champaign, IL
2010 - Associate Professor, Department of Kinesiology and Community Health, Division of Nutritional Sciences, University of Illinois, Champaign, IL

Awards/Honors

1998-2000 Awarded membership in Phi Alpha Epsilon - a local honor society for the College of Health and Human Performance, University of Maryland - College Park, MD

1999-2000 Awarded NIH/NIA predoctoral fellowship, Department of Kinesiology, University of Maryland - College Park, MD

2000-2004 Awarded NIH post-doctoral fellowship in Cardiology, Department of Molecular Genetics, University of Texas Southwestern Medical Center, Dallas, TX

2005 Selected for the National Institute on Aging's Summer Institute on Aging Research program.

2011-2012 Appointed Research Fellow in the Center for Advanced Studies, University of Illinois

2014 College of Applied Health Sciences, UIUC, Undergraduate Research Mentoring Award

Professional Activities

1) Society Member: American College of Sports Medicine (1998-present), American Society of Nephrology (2010 – present), International Society of Nephrology (2010 – present).

2) American College of Sports Medicine Grant and Fellowship Review Committee (2012 – present).

3) Director of the Lifetime Fitness Program, University of Illinois at Urbana-Champaign (2011- present).

Publications

1. "Case Study: Natural Bodybuilding Contest Preparation." Kistler BM, Fitschen PJ, Ranadive SM, Fernhall B, **Wilund** KR. Int J Sport Nutr Exerc Metab. 2014 Jun 5. (Epub ahead of print)
2. "Perceptual effects and efficacy of intermittent or continuous blood flow restriction resistance training." PJ Fitschen, BM Kistler, JH Jeong, HR Chung, P Wu, MJ Walsh, RW Motl, **KR Wilund**. Clin Physiolo Funct Imaging. 2013. Nov 7 (Epub ahead of print).
3. "Resveratrol Supplementation Reduces Aortic Atherosclerosis and Calcification and Attenuates Loss of Aerobic Capacity in a Mouse Model of Uremia. EJ Tomayko, A Cachia, HR Chung, **KR Wilund**. Journal of Medicinal Foods. 2014 Feb; 17(2):278-83.
4. Effect of Acute Moderate Exercise on Induced Inflammation and Arterial Function in Older Adults. Ranadive SM, Kappus RM, Cook MD, Yan H, Lane AD, Woods JA, **Wilund KR**, Iwamoto G, Vanar V, Tandon R, Fernhall B. Exp Physiol. 2014 Feb; 17(2):278-83.
5. "Postural Control in Hemodialysis Patients." Shin S, Chung HR, Fitschen PJ, Kistler BM, Park HW, **Wilund KR**, Sosnoff JJ. Gait Posture. 2014 Feb;39(2):723-7.
6. "Hemodynamic and arterial stiffness differences between African-Americans and Caucasians following maximal exercise. H Yan, SM Ranadive, AD Lane, RM Kappus, KS Heffernan, JA Woods, P Sun, P Wu, **KR Wilund**, I Harvey, B Fernhall. American Journal of Physiology – Heart and Circulatory Physiology. 2014 Jan; 306(1):H60-8.
7. "Elderly person with ICU-acquired weakness: The potential role for B-hydroxy-B-methylbutyrate (HMB) supplementation." Rahman A, **Wilund K**, Koo K, Martin C, Jeejeebhoy K, Agarwala R, Fitschen P, Mourtzakis M. Journal of Parenteral and Enteral Nutrition. J Parenter Enteral Nutr. 2013 Sept 26. Epub ahead of print.
8. "Effect of Acute Aerobic Exercise on Vaccine Efficacy in Older Adults". SM Ranadive, RM Kappus, M Cook, H Yan, AD Lane, JA Woods, **K Wilund**, G Iwamoto, V Vanar, R Tandon, B Fernhall. Medicine and Science in Sports and Exercise. Med Sci Sports Exerc. 2014 Mar; 46(3): 455-61.
9. "Effect of Muscle Strength on Gait in Hemodialysis Patients with and without Diabetes." Shin S, Chung HR, Kistler BM, Fitschen PJ, **Wilund KR**, Sosnoff JJ. Int J Rehabilitation Research. 2014 March;37(1):29-33.

10. "Arterial Stiffness and Walk Time in Patients with End-Stage Renal Disease." Lane AD, Wu PT, Kistler B, Fitschen P, Tomayko E, Jeong JH, Chung HR, Yan H, Randadive SM, Phillips S, Fernhall B, **Wilund K**. Kidney Blood Press Res. 2013 April 30; 37(2-3):142-50.
11. "Effect of Sex on Wasted Left Ventricular Effort Following Maximal Exercise." Lane, AD, Ranadive SM, Yan H, Kappus RM, Cook MD, Sun P, Woods JA, **Wilund K**, Fernhall B. Int J Sports Med. 2013; 34(9):770-6.
12. "Resting and post exercise arterial-ventricular coupling in endurance-trained men and women." Fahs CA, Rossow LM, Yan H, Ranadive SM, Agiovlasitis S, **Wilund** KR, Baynard T, Fernhall B. J Hum Hypertens. 2013 Sep;27(9):552-6.
13. "Efficacy of B-hydroxy-B-methylbutyrate supplementation in elderly and clinical populations." Fitschen PJ, Wilson GJ, Wilson JM, **Wilund KR**. Nutrition. 2013 Jan;29(1):29-36
14. "Walking and Talking in Maintenance Hemodialysis Patients." Shin S, Chung HR, Kistler BM, Fitschen PJ, **Wilund KR**, Sosnoff JJ. Arch Phys Med Rehabil. 2013 Jan;94(1):127-31
15. "Aortic Reservoir function, estimated myocardial demand and coronary perfusion pressure following steady state and interval exercise." Lane AD, Heffernan KS, Rossow LM, Fahs CA, Ranadive SM, Yan H, Baynard T, **Wilund K**, Fernhall B. Clin Physiol Funct Imaging. 2012 Sep; 32(5): 353-60.
16. "Validity of predicting left ventricular end systolic pressure changes following an acute bout of exercise." Kappus RM, Ranadive SM, Yan H, Lane AD, Cook MD, Hall G, Harvey IS, **Wilund KR**, Woods JA, Fernhall B. J Sci Med Sport. 2013 Jan;16(1):71-5.
17. "Exercise, inflammation and aging." Woods JA, **Wilund KR**, Martin SA, Kistler BM. Aging Dis. 2012 Feb; 3(1):130-40.
18. "Soy protein diet and exercise training increase relative bone volume and enhance bone microarchitecture in a mouse model of uremia." Tomayko EJ, Chung HR, **Wilund KR**. J Bone Miner Metab. 2011 Nov; 29(6): 682-90.
19. "The effect of acute fish-oil supplementation on endothelial function and arterial stiffness following a high-fat meal." Fahs CA, Yan H, Ranadive S, Rossow LM, Agiovlasitis S, **Wilund KR**, Fernhall B. Appl Physiol Nutr Metab. 2010 Jun; 35(3):294-302.
20. "Intradialytic Exercise Training Reduces Oxidative Stress and Epicardial Fat: A Pilot Study." **Wilund KR**, Tomayko EJ, Wu PT, Chung HR, Vallurupalli S, Lakshminarayanan B, and Fernhall B. Nephrology, Dialysis and Transplantation. 2010 Aug; 25 (8): 2695-701.
21. "Post exercise Hypotension in an Endurance-Trained Population of Men and Women Following High-Intensity Interval and Steady-State Cycling." Rossow L, Yan H, Fahs CA, Ranadive SM, Agiovlasitis S, **Wilund KR**, Baynard T, Fernhall B. Am J Hypertens. 2010 April; 23(4): 358-67.
22. "Macrophages from alpha 7 nicotinic acetylcholine receptor knockout mice demonstrate increased cholesterol accumulation and decreased cellular paraoxonase expression: A possible link between the nervous system and atherosclerosis development." **Wilund KR**, Rosenblat M, Chung HR, Volkova N, Kaplan M, Woods JA, Aviram M. Biochem Biophys Res Commun. 2009 Dec 4; 390(1):148-54.
23. "Resistance exercise training reduces central blood pressure and improves microvascular function in African American and white men." Heffernan KS, Fahs CA, Iwamoto GA, Jae SY, **Wilund KR**, Woods JA and Fernhall B. Atherosclerosis. 2009 Nov; 207(1):220-6.
24. "Effects of Diet and Exercise on Metabolic Disturbances in High Fat Diet-Fed Balb/c Mice." Vieira V, Valentine R, **Wilund KR**, Woods JA. Cytokine. 2009 Jun;46(3):339-45.
25. "Effects of Exercise and Low-Fat Diet on Adipose Tissue Inflammation and Metabolic Complications in Obese Mice." Vieira V, Valentine R, **Wilund KR**, Antao N, Baynard T. Am J Physiol Endoc Metab. 2009 May;296(5):E1164-71.
26. "Influence of arterial wave reflection on carotid blood pressure and intima-media thickness in older endurance trained men and women with pre-hypertension." Heffernan KS, Jae SY, Tomayko EJ, Ishaque MR, Fernhall B, **Wilund KR**. Clinical Physiology and Functional Imaging. 2009 May;29(3):193-200..
27. "C-reactive protein and cardiac vagal activity following resistance training in young African American and white men." Heffernan, KS, Woods JA, Vieira VJ, Jae SY, **Wilund KR**, Iwamoto GA, Fernhall B. Am J Physiol Regul Integr Comp Physiol. 2009 Apr;296(4):R1098-105.
28. "Racial differences in central blood pressure and vascular function in young men." Heffernan KS, Jae SY, **Wilund KR**, Woods JA, Fernhall B. Am J Physiol Heart Circ Physiol. 2008 Dec;295(6):H2380-7.

29. "Effects of endurance exercise training on markers of cholesterol absorption and synthesis." **KR Wilund**, LA Feeney, EJ Tomayko, EP Weiss, JH Hagberg.Physiol Res. 2009;58(4):545-52.
30. "Physical activity, coronary artery calcium, and bone mineral density in elderly men and women: a preliminary investigation." **KR Wilund**, EJ Tomayko, EM Evans, K Kim, MR Ishaque, B Fernhall. Metabolism. 2008 Apr;57(4):584-91.
31. "Endurance Exercise Training Reduces Gallstone Development in Mice." **KR Wilund,** LA Feeney, EJ Tomayko, HR Chung, K Kim. Journal of Applied Physiology. 2008 Mar;104(3):761-5.
32. "The association between regional body composition and metabolic outcomes in athletes with spinal cord injury." Mojtahedi MC, Valentine RJ, Arngrímsson SA, **Wilund KR**, Evans EM. Spinal Cord. 2008;46:192-197.
33. "Is the Anti-inflammatory Effect of Regular Exercise Responsible for Reduced Cardiovascular Disease?" **KR Wilund**. Clinical Science. 2007; 112(11): 543-55.
34. "Endurance exercise training raises high-density lipoprotein cholesterol and lowers small low-density lipoprotein and very low-density lipoprotein independent of body fat phenotypes in older men and women." A Halverstadt, DA Phares, **KR Wilund**, AP Goldberg, JM Hagberg. Metabolism: Clinical and Experimental 2007; 56: 444– 450.
35. "No Association Between Plasma Levels of Plant Sterols and Atherosclerosis in Mice and Men." **KR Wilund**, L Yu, F Xu, GL Vega, SM Grundy, JC Cohen and HH Hobbs. Arteriosclerosis Thrombosis and Vascular Biology. 2004 Dec; 24(12):2326-32
36. Autosomal recessive hypercholesterolemia in three sisters with phenotypic homozygous familial hypercholesterolemia: diagnostic and therapeutic procedures." HP Thomas, A Vogt, **KR Wilund**, C Schliesser, E Steinhagen-Thiessen, U Kassner. Ther Apher Dial. 2004 Aug;8(4):275-80.
37. "High Level Expression of ABCG5 and ABCG8 Attenuates Diet-Induced Hypercholesterolemia and Atherosclerosis in LDLr-/- Mice." **KR Wilund**, LQ Yu, F Xu, JC Cohen, and HH Hobbs. Journal of Lipid Research 2004 August;45(8):1429-36.
38. "B2 and B3 Adrenergic Receptor Gene Polymorphisms and Exercise Hemodynamics in Postmenopausal Women." SD McCole, AR Shuldiner, MD Brown, GE Moore, RE Ferrell, **KR Wilund**, A Huberty, LW Douglass, and JM Hagberg. Journal of Applied Physiology, 2003; 96: 526-530.
39. "High Density Lipoprotein-Cholesterol, its Subfractions, and Responses to Exercise Training are Dependent on Endothelial Lipase Genotype." A Halverstadt, DA Phares, RE Ferrell, **KR Wilund**, AP Goldberg, and JM Hagberg. Metabolism: Clinical and Experimental, 2003 Nov; 52(11): 1505-11.
40. "Genetic Defenses Against Hypercholesterolemia." HH Hobbs, GA Graff, **KR Wilund**, L Yu, and JC Cohen. Cold Spring Harbor Symposia on Quantitative Biology, 2002 Vol. LXVII (499-505).
41. "Physical Activity, Hormone Replacement Therapy, and Plasma Lipoprotein-lipid Levels in Postmenopausal Women." JM Hagberg, SD McCole, RE Ferrell, JM Zmuda, KS Rodgers, **KR Wilund**, and GE Moore. International Journal of Sports Medicine. 2003 Jan;24(1):22-9.
42. "Molecular Mechanisms of Autosomal Recessive Hypercholesterolemia." **KR Wilund**, M Ying, JV Garcia, HH Hobbs, and JC Cohen. Human Molecular Genetics. 2002 Nov 15; 11(24):3019-3030.
43. "Angiotensinogen M235T Gene Polymorphisms and Exercise Hemodynamics in Postmenopausal Women." SD McCole, MD Brown, GE Moore, RE Ferrell, **KR Wilund**, and JM Hagberg. Physiological Genomics. 2002 Aug 14; 10(2):63-9.
44. "The Effects of Endurance Exercise Training on Plasma LpAI and LpAI:AII Levels in Sedentary Older Adults." **KR Wilund**, PL Colvin, DA Phares, AP Goldberg, and JM Hagberg. Metabolism: Clinical and Experimental. 2002 Aug; 51(8):1053-60.
45. "Changes in HDL-C Subfractions With Exercise Training May be Dependent on CETP Genotype." **KR Wilund**, RE Ferrell, DA Phares, AP Goldberg, and JM Hagberg. Metabolism: Clinical and Experimental. 2002 Jun;51(6):774-778.
46. "Autosomal Recessive Hypercholesterolemia in Sardinia, Italy, and Mutations in ARH: a Clinical and Molecular Genetic Analysis." M Arca, G Zuliani, **K Wilund**, F Campagna, R Fellin, M Ricci, N Glorioso, S Bertolini, S Calandra, P Pintus, C Carru, F Cossu, J Cohen, and HH Hobbs. Lancet. 2002 Mar 9; 359(9309):841-7.
47. "ACE Insertion/Deletion Polymorphism and Submaximal Exercise Hemodynamics in Postmenopausal Women." JM Hagberg, SD McCole, RE Ferrell, **KR Wilund**, and GE Moore. Journal of Applied Physiology. 2002 Mar;92(3):1083-8.

48. "Moderate Physical Activity is Associated with Higher Bone Mineral Density in Postmenopausal Women." JM Hagberg, JM Zmuda, SD McCole, KS Rodgers, RE Ferrell, **KR Wilund**, and GE Moore. Journal of the American Geriatric Society. 2001 Nov; 49(11): 1411-1417.
49. "Acute Resistance Exercise Does Not Affect 24-Hour Ambulatory Blood Pressure." MH Roltsch, T Mendez, **KR Wilund**, and JM Hagberg. Medicine and Science in Sports and Exercise. 2001 Jun;33(6):881-6.
50. "Autosomal Recessive Hypercholesterolemia Caused by Mutations in a Putative LDL Receptor Adaptor Protein." CK Garcia, **K Wilund**, M Arca, G Zuliani, R Fellin, M Maioli, S Calandra, S Bertolini, F Cossu, N Grishin, R Barnes, JC Cohen, and HH Hobbs. Science. 2001 May 18; 292: 1394-1398.
51. "Apo E gene and gene-environment effects on plasma lipoprotein-lipid levels." JM Hagberg, **KR Wilund**, and RE Ferrell. Physiological Genomics. 2000 Dec 18; 4(2):101-108.
52. "Determinants of Body Composition in Postmenopausal Women." JM Hagberg, JM Zmuda, SD McCole, KS Rodgers, **KR Wilund**, and GE Moore. Journal of Gerontology: Medical Sciences. 2000, Vol. 55A, No. 10, M607-M612.
53. "Exercise Training-Induced Blood Pressure and Plasma Lipid Improvements in Hypertensives May Be Genotype Dependent." JM Hagberg, RE Ferrell, DR Dengel, and **KR Wilund**. Hypertension. 1999; 34:18-23.
54. "VO2max is Associated with ACE Genotype in Postmenopausal Women." JM Hagberg, RE Ferrell, **and KR Wilund**. Journal of Applied Physiology. 1998; 85(5): 1842-46.

Research Projects Ongoing or Completed During the Last 3 Years:

1) 2013. National Multiple Sclerosis Society. "Kaatsu Training in Multiple Sclerosis." Role: Principle Investigator. Direct Costs = $100,000.

2) 2013. Renal Research Institute. "Effects of Beta-Hydroxy-Beta-MethylButyrate Supplementation on Physical Function in Hemodialysis Patients". Role: Principle Investigator. Direct Costs = $47,500.

3) 2012-2013. UIUC College of ACES Vision 20/20 Grant Program. "Acute Effects of Intradialytic Feeding and Exercise on Hemodialysis Efficiency and Hemodynamic Response". Role: Principal Investigator. Direct Costs = $20,000.

4) 2011. UIUC Center on Health, Aging and Disability. "Efficacy of Functional Electrical Stimulation-Enhanced Ergometry in Disabled Populations." Role: Principal Investigator. Direct costs = $25,000.

5) 2011 – 2012 - PomWonderful, Inc. "Effects of Pomegranate Extract Supplementation on Arterial Structure and Function in Hemodialysis Patients." Role – Principal Investigator. Direct costs = $85,000.

6) 2010 – 2015. NIH/NIDDK. September 1, 2010 – August 31, 2015. "Efficacy of Intradialytic Protein Supplementation and Exercise Training in Hemodialysis Patients. 1-R01-DK084016. Role: Principal-Investigator. Total Direct costs = $2,094,442.