OMB No. 0925-0001 and 0925-0002 (Rev. 11/16 Approved Through 10/31/2018)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Linda Shannon Pescatello

eRA COMMONS USER NAME (credential, e.g., agency login): LINDAPESCATELLO

POSITION TITLE: Board of Trustees Distinguished Professor of Kinesiology, University of Connecticut

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

| INSTITUTION AND LOCATION | DEGREE(if applicable) | Completion DateMM/YYYY | FIELD OF STUDY |
| --- | --- | --- | --- |
| University of Connecticut | BS | 05/1977 | Biological Sciences |
| University of Connecticut | MA | 05/1981 | Exercise Science |
| University of Connecticut | PhD | 05/1986 | Exercise Science |

**A. Personal Statement**

I am a tenured Distinguished Professor within the Department of Kinesiology at the University of Connecticut (UConn). I also have joint appointments at UConn in the Departments of Allied Health Sciences, Nutritional Sciences, and Physiology and Neurobiology; and at the UCONN School of Medicine in the Department of Community Medicine and Health Care. I have over 35 years of experience in designing and executing large, demanding acute (i.e., short-term or immediate) and chronic (i.e, long-term or training) endurance and resistance exercise interventions.

Due to my important contributions to sport medicine and exercise science, I was appointed: 1) chair of the writing team of the 2004 American College of Sports Medicine (ACSM) position stand on exercise and hypertension and its evidence based revision that is anticipated to be published in 2018; 2) senior editor of *ACSM’s Guidelines for Exercise Testing and Prescription Ninth Edition* **(d)**, the international standard for anyone performing exercise testing and training programs; 3) an expert panel and writing team member of a recent update to ACSM's exercise preparticipation health screening recommendations; and 4) advisory committee member of the Department of Health and Human Services 2018 Physical Activity Guidelines for Americans. In 2011 I received the ACSM’s prestigious Citation Award. As PI or Co-Investigator on numerous UConn, American Heart Association, National Dairy Council, NIH, and Unites States Department of Agriculture-funded grants, I have laid the foundation for the proposed research by acquiring extensive experience designing, conducting, and managing large, complex multicenter acute and chronic aerobic and resistance exercise interventions investigating the response of health-related phenotypes among ethnically diverse populations.

My most relevant four peer reviewed publications that highlight my experience and qualifications I am a tenured Distinguished Professor in the Department of Kinesiology at the University of Connecticut (UConn). I also have joint appointments at UConn in the Departments of Allied Health Sciences, Nutritional Sciences, and Physiology and Neurobiology; and at the UConn School of Medicine in the Department of Community Medicine and Health Care. I have nearly 30 years of experience in designing and executing large, demanding multicenter, acute (i.e., short-term or immediate) and chronic (i.e, long-term or training) exercise interventions. Of relevance to this application**,** much of this work has focused on the genetic basis for the response of health-related phenotypes to exercise, particularly blood pressure and muscle size and strength.

I was Principal Investigator (PI) on a large acute aerobic exercise candidate gene association study that investigated the genetic basis for the blood pressure response to acute aerobic exercise or *postexercise hypotension* (PEH) among 50 Caucasian, middle-aged, overweight men with pre- to Stage 1 hypertension (American Heart Association Grant-In-Aid #0150507) **(a)**. Utilizing advances in genomic technology that emerged since undertaking this discovery phase PEH candidate gene association study, we recently completed a replication study in which we performed deep-targeted exon sequencing on a prioritized panel of 41 genes that included genes from our earlier work among obese African American and Caucasian men and women with hypertension; a study population that resembles the demographics of the sample we propose to enroll in this application **(b)**. The novel findings from this study provide the foundation for this proposal.

I was Co-Investigator on a large, multicenter resistance exercise genomics study, *Functional Single Nucleotide Polymorphisms Associated with Human Muscle Size and Strength* (or FAMuSS, Hoffman PI, R01 NS40606-02), in which over 1,200 healthy adults from 19 to 39 years provided DNA and then performed a progressive dynamic, resistance training program to define the molecular basis for the polymorphic variation in muscle function in humans **(c)**. I also have experience in conducting large community-based, low to moderate intensity physical activity interventions to increase treatment adherence related to weight loss and substance abuse among healthy, college age students and ethnically diverse clinical populations with HIV and substance abuse disorders (R21HL092382-01A2, R01-DA022739, and R01DA027615-01).

Due to my important contributions to sport medicine and exercise science, I was appointed: **(1)** chair of the writing team of the 2004 American College of Sports Medicine (ACSM) position stand on exercise and hypertension and its evidence based revision that is anticipated to be published in 2018; **(2)** senior editor of *ACSM’s Guidelines for Exercise Testing and Prescription Ninth Edition* **(d)**, the international standard for anyone performing exercise testing and training programs; **(3)** an expert panel and writing team member of a recent update to ACSM's exercise preparticipation health screening recommendations; and **(4)** advisory committee member of the Department of Health and Human Services 2018 Physical Activity Guidelines for Americans. In 2011 I received the ACSM’s prestigious Citation Award. As PI or Co-Investigator on numerous UConn, American Heart Association, National Dairy Council, NIH, and Unites States Department of Agriculture-funded grants, I have laid the foundation for the proposed research by acquiring extensive experience designing, conducting, and managing large, complex multicenter acute and chronic aerobic and resistance exercise interventions investigating the genetic basis for the response of health-related phenotypes among ethnically diverse populations.

My most relevant four peer reviewed publications that highlight my experience and qualifications for this project include:

**a.** Eicher JD, CM Maresh, GJ Tsongalis, PD Thompson and **LS Pescatello**. The additive blood pressure lowering effects of intensity on postexercise hypotension. *AHJ* 160: 513-520, 2010. PMID: 20826261.

**b. Pescatello LS**, ED Schifano, GI Ash, GA Panza, L Lamberti, M-H Chen, V Deshpande, A Zaleski, P Farinatti, BA Taylor and PD Thompson. Deep-targeted exon sequencing reveals renal polymorphismsassociate with postexercise hypotension among African Americans. *Physiol Reports* *Physiol Reports* 4 (19), 2016, e12992, doi: 10.14814/phy2.12992. PMID: 27940662.

**c.** Hubal MJ, H Gordish-Dressman, PD Thompson, TB Price, EP Hoffman, TJ Angelopoulos, PM Gordon, NM Moyna, **LS Pescatello**, PS Visich, RF Zoeller, RL Seip and PM Clarkson. Variability in muscle size and strength gain following unilateral resistance training. *Med Sci Sports Exerc* 37: 964-972, 2005. PMID: 15947721.

**d. LS Pescatello** (ed), Arena R, Riebe DW and Thompson PD (assoc. eds.) *ACSM’s Guidelines for Exercise Testing and Prescription* (9th ed.). Baltimore, ML: Lippincott Williams & Wilkins 2013 ISBN 978-1-60913-605-5.

**B. Positions and Honors**

1981-1986 Manager, Cardiac Rehabilitation, New Britain General Hospital

1986-1996 Director, Department of Health Promotion, New Britain General Hospital

1996-1998 Assistant Professor, University of Hartford, Division of Health Professions

1996-2013 Research Scientist, New Britain General Hospital, Department of Health Promotion

1998-2002 Assistant Professor and Director, Center for Health Promotion, Department of Allied Health Sciences, College of Agriculture and Natural Resources, University of Connecticut

1998-2006 Joint Appointments, Kinesiology, Nutritional Sciences, and Physiology and Neurobiology, University of Connecticut

2002-2006 Associate Professor and Director, Center for Health Promotion, Department of Allied Health Sciences, College of Agriculture and Natural Resources, University of Connecticut

2006-2013 Professor, Department of Kinesiology, Neag School of Education, University of Connecticut

2006- Joint Appointments, Allied Health Sciences, Nutritional Sciences, and Physiology and Neurobiology, University of Connecticut

2013-2014 Board of Trustees Distinguished Professor, Department of Kinesiology, Neag School of Education, University of Connecticut

2013- Joint Appointment, Department of Community Medicine and Health Care, University of Connecticut School of Medicine

2014- Board of Trustees Distinguished Professor, Department of Kinesiology, College of Agriculture, Health and Natural Resources, University of Connecticut

**Honors**

1991 Fellow, American College of Sports Medicine

1998 Honor Award, New England American College of Sports Medicine

1999 Outstanding Sports/Leisure Professional Award, School of Education Alumni Society, University of Connecticut

1999, 2002 Teaching Excellence Award, School of Allied Health, University of Connecticut

2001, 2003 Dean’s Research Award, School of Allied Health, University of Connecticut

2011 Citation Award, American College of Sports Medicine

2011 Fellow, American Heart Association

2012 ACSM’s Distinguished Leader

2013 Appointed Distinguished Professor, Board of Trustees, University of Connecticut

2015 Elected Member, Connecticut Academy of Science and Engineering

2016 Appointed Advisory Committee Member, 2018 Physical Activity Guidelines for Americans

**C. Contributions to Science**

1. **Acute Exercise and Blood Pressure**. Since 1988, a major focus of my research that has made significant contributions to the field is examining exercise dose-response issues related to postexercise hypotension, defined as the immediate blood pressure reductions resulting from acute exercise that persist for 24 hours. In recent years, we and others have shown postexercise hypotension is highly related to the blood pressure response to exercise training; supporting our hypothesis of the significant contribution postexercise hypotension makes to the blood pressure response to exercise training among those with hypertension. In 1991 we were the first laboratory to study postexercise hypotension under ambulatory conditions, while controlling for the circadian variation in blood pressure via the inclusion of a control sham session of seated rest. This novel study design has now been adopted world-wide as the gold standard to study this important, clinically relevant, acute exercise responsse. My most relevant four peer reviewed publications related to this research are:

**a.** Thompson PD, SF Crouse, B Goodpasture, D Kelley, N Moyna and **LS Pescatello**. The acute versus chronic response to exercise. *Med Sci Sports Exerc* 33: S438-445, 2001. PMID: 11427768.

**d.** **Pescatello LS**, L Bairos, JL VanHeest, CM Maresh, NR Rodriguez, NM Moyna, C DiPasquale, V Collins, CL Meckes, L Krueger and PD Thompson. Postexercise hypotension differs between white and black women. *AHJ* 145: 364-370, 2003. PMID: 12595857.

**c**. **Pescatello LS**, MA Guidry, BE Blanchard, A Kerr, AW Taylor, CM Maresh, N Rodriguez and PD Thompson. Exercise intensity alters postexercise hypotension. *J Hypertens* 22:1881-1888, 2004. PMID: 15361758.

**d**. Ash GI, BA Taylor, PD Thomspon, HV MacDonald, L Lamberti, MH Chen, P Farinatti, WJ Kraemer, GA Panza, AL Zaleski, V Despande, KD Ballard, M Mujtaba, CM White and **LS Pescatello**. The antihypertensive effects of aerobic exercise versus isometric handgrip resistance exercise. *J Hypertens* Nov 16, 2016 [Epub ahead of print]. PMID: 27861249.

2. **Exercise Genomics**. Since 1999, a focus of my research has been identifying clinical and genetic determinants of the response of health-related phenotypes to acute and chronic aerobic and resistance exercise interventions. The first collaborative study of our investigative team related to this research was, *Does Apo E Affect the Lipid Response to Exercise?* (Thompson, PI), in which we genetically screened 579 people, and subsequently aerobically trained 123 adults over 2 years. As Co-Investigator and site-PI for FAMuSS (RO1NS040606-01A1), we recruited, genotyped, and resistance trained 200 young adults at UConn over 4 years. Another collaborative project of our research team was the discovery phase candidate gene association American Heart Association study (Pescatello PI, Grant-In-Aid, #0150507), *Establishing an Exercise Dose Response for Postexercise Hypotension*, in which we obtained blood for a fasting cardiometabolic profile and DNA extraction to examine the genetic basis for PEH among 50 Caucasian men 18-55 years. We recently completed a complex, labor-intensive PEH replication study, *Exercise Generated Reductions in Blood Pressure (GRIP)*, among 23 African American and Caucasian men and women who provided blood for a fasting cardiometabolic profile and DNA extraction for deep-targeted exon sequencing of a prioritized panel of 41 genes (Pescatello PI). This research has shown that clinical and genetic determinants of the response of health-fitness phenotypes, particularly blood pressure, to acute and chronic exercise holds promise for personalized exercise prescriptions that maximize the health benefits resulting from exercise. My most relevant four peer reviewed publications related to this research are:

**a.** Thompson PD, GJ Tsongalis, C Meckes, M Miles, R Zoeller, P Visich, P Gordon, T Angelopoulos, **LS Pescatello**, L Bausserman, R Seip and N Moyna. Apolipoprotein E Genotype and Changes in Serum Lipids and Maximal Oxygen Uptake with Exercise Training. *Metabolism* 53: 193-202, 2004. PMID: 14767871.

**b.** Blanchard BE, GJ Tsongalis, MA Guidry, LA Labelle, M Poulin, AL Taylor, CM Maresh, J Devaney, PD Thompson and **LS Pescatello**. RAAS polymorphisms alter the acute blood pressure response to dynamic exercise. *Eur J Appl Physiol* 97: 26-33, 2006. PMID: 16468060.

**c.** **Pescatello LS**, M Kostek**,** H Gordish-Dressman, PD Thompson, RL Seip, TB Price, TJ Angelopoulos, PM Clarkson, PM Gordon, NM Moyna, PS Visich, RF Zoeller, JM Devaney and EP Hoffman. ACE ID genotype and the muscle strength and size response to unilateral resistance training. *Med Sci Sports Exerc* 38: 1074-1081, 2006.PMID: 16775548.

**d.** Lee H, GI Ash, TJ Angelopoulos, PM Gordon, NM Moyna, PS Visich, RF Zoeller, H Gordish-Dressman, V Deshpande, MH Chen, PD Thompson, EP Hoffman, JM Devaney and **LS Pescatello**. Obesity-related genetic variants and their associations with physical activity. *Sports Med Open* 1: 34 Epub 2015 Oct 15 PMID: 26495240.

3. **Exercise Prescription for Health Benefit**. A significant theme of my research relates to exercise prescription to optimize health benefits, particularly among adults with hypertension. As the Associate Fitness Editor of *ACSM’s Guidelines for Exercise Testing and Prescription Eighth Edition* published in 2009, I established the *F*requency, *I*ntensity, *T*ime, and *T*ype or the *FITT* principle of exercise prescription which is now used as the framework for the exercise prescription recommendations made by the ACSM in the College's leading scientific publications for a variety of healthy populations with special considerations and populations with chronic disease and health conditions. My most relevant four peer reviewed publications related to this research are:

**a.** **Pescatello LS** (co-chair), B Franklin (co-chair), R Fagard, W Farquhar, GA Kelly and C Ray. American College of Sports Medicine. Position Stand: Exercise and hypertension. *Med Sci Sports Exerc* 36: 533-553, 2004. PMID: 15076798.

**b.** **Pescatello LS**, HV MacDonald, GI Ash, L Lamberti, BT Johnson, R Arena and WB Farquhar. Assessing the

existing professional exercise recommendations for hypertension: A review and recommendations for future

research priorities. *Mayo Clinic Proc* 90: 801-812, 2015 doi 10.1016/j.mayoocp.2015.04.008. PMID: 26046413.

**c.** Riebe D, B Franklin, PD Thompson, CE Garber, GP Whitefield, M Magal and **LS Pescatello**. Updating the American College of Sports Medicine’s recommendations for exercise preparticipation health screening. *Med Sci Sports Exerc* 2015 Nov 47: 2473-2479. doi: 10.1249/MSS.0000000000000664. PMID: 26473759.

**d.** **LS Pescatello** (ed). *Molecular and Translational Medicine Series Volume Effects of Exercise on Hypertension: From Cells to Physiological Systems*. New York, NY: Humana Press 2015 ISBN 978-3-319-17075-6.

4. **Systematic Reviews and Meta-Analysis of Exercise and Chronic Disease Health Outcomes**. Another research focus is better understanding the exercise dose and patient characteristics that optimize the health benefits of exercise among adults with chronic disease and health conditions, by pooling and quantifying data from hundreds of acute and chronic exercise trials. In this research, we apply the most rigorous, present day meta-analytic standards to randomized controlled trials that examine the blood pressure response to acute and chronic exercise. While doing so we isolate critical components of the exercise intervention (i.e., the *F*requency, *I*ntensity, *T*ime, and *T*ype or the *FITT* principle), and other dimensions of relevance to public health and precision medicine, notably sample clinical characteristics (e.g., sex/gender, race/ethnicity, body mass index, age, medication use) and genetic factors as well as other important study features (e.g., methodological study quality). We seek to increase the clinical utility of exercise as a simple, inexpensive lifestyle therapy to prevent, treat, and manage a variety of chronic diseases and health conditions such as hypertension, cardiovascular disease, and cancer, and ultimately, reduce the significant public health burden of these major chronic diseases and health conditions. My most relevant four peer reviewed publications related to this research are:

**a.** Bruneau ML, BT Johnson, TB Huedo-Medina, KA Larson, GI Ash and **LS Pescatello**. The blood pressure response to aerobic exercise: A meta-analyses of candidate gene association studies. *J Sci Med Sport* 2015 Jun 5. pii: S1440-2440(15)00123-1. doi: 10.1016/j.jsams.2015.05.009. [Epub ahead of print]. PMID: 26122461.

**b.** Corso LM, HV MacDonald, BT Johnson, P Farinatti, J Livingston, AL Zaleski, A Blanchard and **LS Pescatello**. Is concurrent training efficacious antihypertensive therapy? A meta-analysis: A meta-analysis. *Med Sci Sports Exerc* 48(12): 2398-2406, 2016. PMID: 27471784.

**c.** MacDonald HV, BT Johnson, TB Huedo-Medina, J Livingston, K Forsyth, WJ Kraemer, PT Farinatti and **LS Pescatello**. Dynamic resistance training as stand-alone antihypertensive lifestyle therapy: A meta-analysis. *JAHA* 2016 Sep 28;5(10). pii: e003231. doi: 0.1161/JAHA.116.003231. PMID: 27680663.

**d.** Brown JC, TB Huedo-Medina, **LS Pescatello**, SM Pescatello, Ferrer RA and BT Johnson. Efficacy of exercise interventions in modulating cancer-related fatigue among adult cancer survivors: a meta-analysis. *Cancer Epidemiol Biomarkers Prev* 20: 123-133, 201. [Epub ahead of print] Nov 4, 2011 PMID: 21051654.

Please See a Complete List of Published Work in My Bibliography: <http://www.ncbi.nlm.nih.gov/pubmed/?term=Pescatello>

**Ongoing Research Support**

University of Connecticut Pescatello (PI) 12/01/2013-12/30/2017

Cardiometabolic Signatures Associated with Obesity and Hypertension and their Response to Exercise: A Pilot Study

To quantify the extent to which a prioritized signature of genes, microRNAs, metabolites, and protein products related to obesity and hypertension explain the variability in the blood pressure response to exercise among overweight to obese adults with high blood pressure.

University of Connecticut Pescatello (PI) 04/01/2014-06/30/2018

A Firefighter Physical Fitness Testing and Training Program for Cardiovascular Health and Job Performance

To pilot test a job-specific, physical fitness testing and training and health promotion program offered on-duty to improve the physical and mental health of firefighters.

1R21HL125157 Gorin (PI) 12/01/2014-11/30/2017

NIH/NHLBI

Test of a Theory-Based Weight Loss Program for Couples: Project TEAMS

To examine whether Steps to Growing Up Healthy (Steps), a patient-centered primary care obesity prevention program, is effective in stabilizing or, when appropriate, reducing body mass index %tiles in 2-4 year old children across the body mass index spectrum (>5 %tile). Role: Co-Investigator

University of Connecticut Johnson & Pescatello (Co-PIs) 03/01/2015-06/30/2018

Exercise and Blood Pressure: High Quality Meta-Analyses of Randomized Controlled Trials

To meta-analyze data from hundreds of exercise trials examining the blood pressure response to exercise according to high, quality contemporary methodological standards to better understand the exercise dose and patient populations for which exercise works best as antihypertensive lifestyle therapy.

United States Department of Agriculture Pescatello (PI) 10/01/15-09/30/2020

(SAES, HATCH) University of Connecticut

The Influence of Nutrition, Exercise, and Other Lifestyle Habits for Firefighter Cardiovascular Health during Heavy Physical Exertion

To determine the effectiveness of a job-specific, physical fitness testing and training and health promotion program offered on-duty to improve the physical and mental health of firefighters.

University of Connecticut Pescatello (PI) 03/01/2016-02/28/2018

Using the Immediate Blood Pressure Benefits of Exercise to Improve Exercise Adherence: A Pilot Study

To compare the efficacy of two different types of self-monitoring, traditional behavioral (TRADITIONAL) and traditional behavioral plus PEH (TRADITIONAL+PEH), to increase exercise adherence and improve BP control among adults with hypertension.

University of Connecticut Pescatello, Puhl, & Taylor (Co-PIs) 03/01/2016-02/28/2018

Weight Stigma in Women who are Obese: Assessing How an Acute Exposure to Stigma Negatively Impacts Cardiovascular Health

To compare the effects of an acute obesity stigma exposure to control on a variety of cardiovascular health indicators among obese women with normal blood pressure and hypertension.

Seabury Charitable Foundation Pescatello (PI) 01/01/2017-08/31/2018

University of Connecticut Center on Aging, Connecticut Institute on Clinical and Translational Science

Evaluating Tai Chi Studies Aimed at Improving Balance and Blood Pressure among Older Adults

To compare two different Tai Chi interventions, one targeting balance improvement and the other reductions in blood pressure, compared to control.

5U24AG052175 Davidson (PI) 01/01/2017-05/31/2020

Columbia University Science of Behavior Change Resource and Coordinating Center

In CHIP Healthy Habits Systematic Review Project

To identify the mechanisms that make behavior change efforts successful to lead to more effective approaches and interventions. Role: Co-Investigator

University of Connecticut Pescatello, Li, & Wang (Co-PIs) 06/01/2017-05/31/2019

Band-Aid Battery – Energy Scavenging from Human Sweat for Wearable Sensors

To develop a novel “band-aid battery” that can scavenge microwatt energy from human skin to measure the hemodynamic response to exercise.

American Heart Association Taylor (PI) 07/01/2017-06/30/2019

Near Infrared Spectroscopy (NIRS) to Diagnose Statin-Associated Muscle Symptoms

To test the efficacy of skeletal muscle NIRS to diagnose statin-associated muscle symptoms