

**Utah Older American Independence Center
Overview**

The Utah Older American Independence Center (OAIC) focus on vascular aging and mobility is designed to advance our understanding of the mechanisms and consequences of vascular aging, including its effect on muscle function, mobility limitations and falls. Advancing age is a major risk factor for cardiovascular disease and appears to exert its pathological influence on the vascular system. Human aging is characterized by endothelial dysfunction and the development of arterial stiffness. With advancing age, changes occur in both the central and peripheral circulation that decrease compliance in the arterial system, increase systemic blood pressure, impair oxygen delivery, and ultimately alter the vascular response to physical activity. Indeed, a hallmark of the aging process appears to be a fall in maximal exercise capacity and limited blood flow to active skeletal muscles that have been implicated as important factors contributing to the decline in physical function and increased fatigue and mobility disorders associated with aging.

The aging demographics of our population coupled with the prevalence of cardiovascular and mobility disorders among older people will demand that the next cohorts of bio-medical research trainees from multiple disciplines receive competency-based training in the gerontological aspects within their discipline and their area of research focus to prepare them for their future research careers.

The OAIC’s resource cores will support research centered on vascular aging that spans a translational spectrum from its basic and genetic mechanisms, to metabolic and vascular blood flow manifestations, to clinical disorders including an interrelationship with impaired muscle strength, mobility disorders and falls.

Genetics/ Basic Mechanisms	Metabolic/ Vascular Blood Flow	Clinical Manifestations	Mobility
<ul style="list-style-type: none"> • Genetics – including longevity • Oxidative stress • Inflammation • Glycosylation • Endothelial dysfunction 	<ul style="list-style-type: none"> • Arterial stiffness • Insulin resistance • Impaired skeletal muscle blood flow • Sarcopenia • Decreased muscle strength 	<ul style="list-style-type: none"> • Systolic hypertension • Heart failure – systolic and preserved systolic dysfunction • Atrial fibrillation 	<ul style="list-style-type: none"> • Falls • Immobility • Decreased gait speed • Muscle function and strength

Specific Aims:

1. Support translational clinical research that addresses the mechanisms and consequences of vascular aging, including its effect on muscle function, mobility limitations and falls.
2. Support novel pilot studies, developmental projects and externally funded grants that address interventions to mitigate vascular aging’s effects on immobility.

3. Promote the career development of physician and non-physician investigators with mentored research training experiences.

The OAIC will support an infrastructure consisting of the following cores:

Leadership Administrative Core
Mark Supiano, MD – Director

Research Career Development Core
TBD – Director(s)

Biostatistical Core
Tom Greene, PhD – Director

Genetics and Population Core
Ken Smith, PhD and Steve Hunt, PhD – Directors

Mobility and Vascular Function Assessment Core
Paul LaStayo, PhD and Russ Richardson, PhD – Directors

Pilot and Exploratory Studies Core
TBD – Director(s)