



# Pepper Center Integrative Biology Core

Pepper OAIC Open House

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# Integrative Biology Core (IBC)

## Core Leaders:

Osvaldo Delbono, MD, PhD, Internal Med/Gerontology

Barbara Nicklas, PhD, Internal Med/Gerontology

Core Faculty: Jamie Justice, PhD, Int Med/ Gerontology

## Main Objectives:

- To provide key services to integrate biological outcomes into pilot studies and externally-funded trials
- To educate and train OAIC-supported early-career faculty in the methodologies and techniques used to study cellular, tissue-level, and systemic biological factors

# IBC

## Core Services:

- Management of unique tissue biorepository
- Expertise and protocols for optimal collection and processing of human tissues (including muscle & adipose)
- Measures of systemic blood biomarkers, including microRNAs and epigenetic and genetic DNA variation
- *in vitro* skeletal muscle and adipose tissue structural and metabolic measures, gene expression, and post-translational modifications of proteins
- Cellular measures of biological function

# IBC Success Story



1) Cryopreserved thigh adipose tissue use from prior RCT led to: [\*J Gerontol A Biol Sci Med Sci\*](#). 2018

## Research Article

### **Cellular Senescence Biomarker p16<sup>INK4a</sup> Cell Burden in Thigh Adipose is Associated With Poor Physical Function in Older Women**

Jamie N. Justice, PhD,<sup>1</sup> Heather Gregory, MS,<sup>1</sup> Tamar Tchkonina, PhD,<sup>2</sup> Nathan K. LeBrasseur, PhD,<sup>2</sup> James L. Kirkland, MD, PhD,<sup>2</sup> Stephen B. Kritchevsky, PhD,<sup>1</sup> and Barbara J. Nicklas, PhD,<sup>1</sup>

<sup>1</sup>Sticht Center for Healthy Aging and Alzheimer's Prevention, Internal Medicine—Gerontology and Geriatric Medicine, Wake Forest School of Medicine (WFSM), Winston-Salem, North Carolina. <sup>2</sup>Robert and Arlene Kogod Center on Aging, Mayo Clinic, Rochester, Minnesota.

- K01AG059837; “Senescent Cell Burden in Human Aging and Obesity: Functional Consequences & Reduction by CR

2) IBC experience with subcutaneous fat biopsies led to:

- R01AG066474; “Investigating role of adipose tissue in mobility and aging (SOMMA-AT)”