



Pepper Center Integrative Biology Core

Pepper OAIC Open House

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Integrative Biology Core (IBC)

Core Leaders:

Oswaldo 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^{INK4a}+ Cell Burden in Thigh Adipose is Associated With Poor Physical Function in Older Women

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

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- 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)”