Pepper Center Integrative Biology Core

Pepper OAIC Open House

January 21, 2021
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
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


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 Tchkonia, PhD,² Nathan K. LeBrasseur, PhD,² James L. Kirkland, MD, PhD,² Stephen B. Kritchevsky, PhD,¹ and Barbara J. Nicklas, PhD,¹

¹Sticht Center for Healthy Aging and Alzheimer’s Prevention, Internal Medicine – Gerontology and Geriatric Medicine, Wake Forest School of Medicine (WFSM), Winston-Salem, North Carolina. ²Robert 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)”