



Overview: WFU OAIC Biostatistics and Information Systems Core (BIC)

The Team

- ❖ Faculty: Michael Miller, PhD
 - Eddie Ip, PhD
 - Iris Leng, PhD
 - Daniel Beavers, PhD
- ❖ Statistician: Rebecca Neiberg, MS
- ❖ Systems Programmer: Wes Roberson
- ❖ SAS Programmers
 - ❖ Julie Hu
 - ❖ June Pierce
 - ❖ Christopher Webb, MS
- ❖ Project Manager: Cindy Stowe, MPM

The Specific Aims of BIC in the Current Cycle:

- ***Aim 1: To participate as co-investigators in multiple aspects of WFU OAIC pilot studies, developmental projects and externally funded projects related to OAIC's aims and themes.***
- ***Aim 2: Mentoring/Collaboration with OAIC-supported scholars and junior faculty members***
- ***Aim 3: Developing novel biostatistical applications or methods for analytical issues associated with aging research***
- ***Aim 4: Developing unique research information collection systems for implementation in studies of older participants and translate them into community- and clinic-based settings***

Standardized Data Entry/Variables for a Common Battery

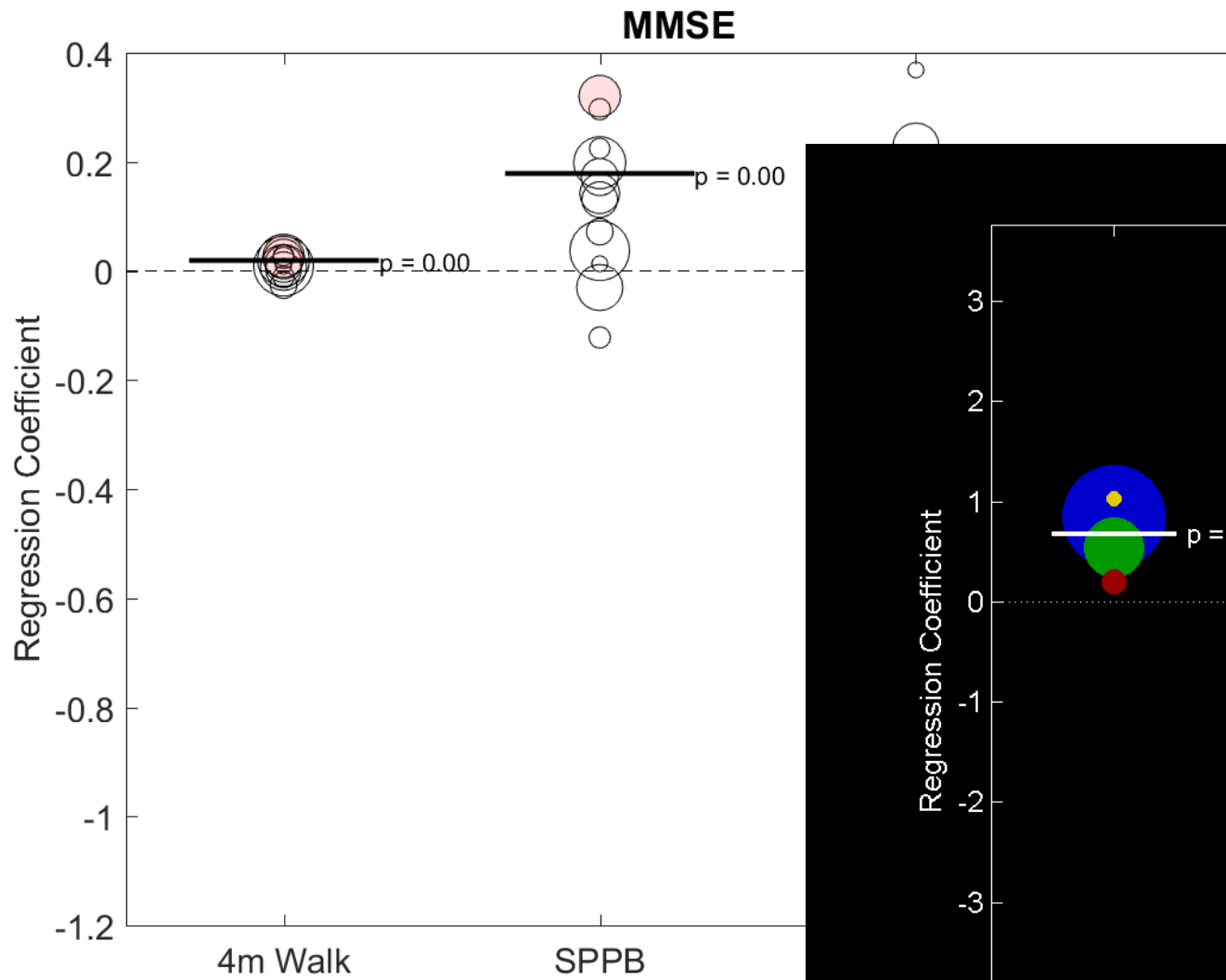
- Anthropometry (Height, Body Mass, Abdominal Circumference)
- Grip strength (Jamar hand grip dynamometer)
- Lower extremity muscle power (Keiser knee extension and leg press)
- The Short Physical Performance Battery (SPPB: three tests of physical function - standing balance, usual pace gait speed over 4 meters, time to rise from a chair and sit down five times)
- 400 meter walk test (400MWT: study specific protocols for either usual or fast pace gait speed)
- Pepper Assessment Tool for Disability (PAT-D: self-report instrument)
- Mobility Assessment Tool – short form (MAT-sf: 10 or 12-item computer based self-report assessment of mobility using animated video clips)
- Digit Symbol Substitution Test (DSST: validated cognitive assessment that is strongly correlated with walking speed)
- Montreal Cognitive Assessment© (MoCA: global cognitive assessment that aids in interpreting DSST performance)

WFU OAIC Integrated Aging Studies Databank and Registry (IASDR)

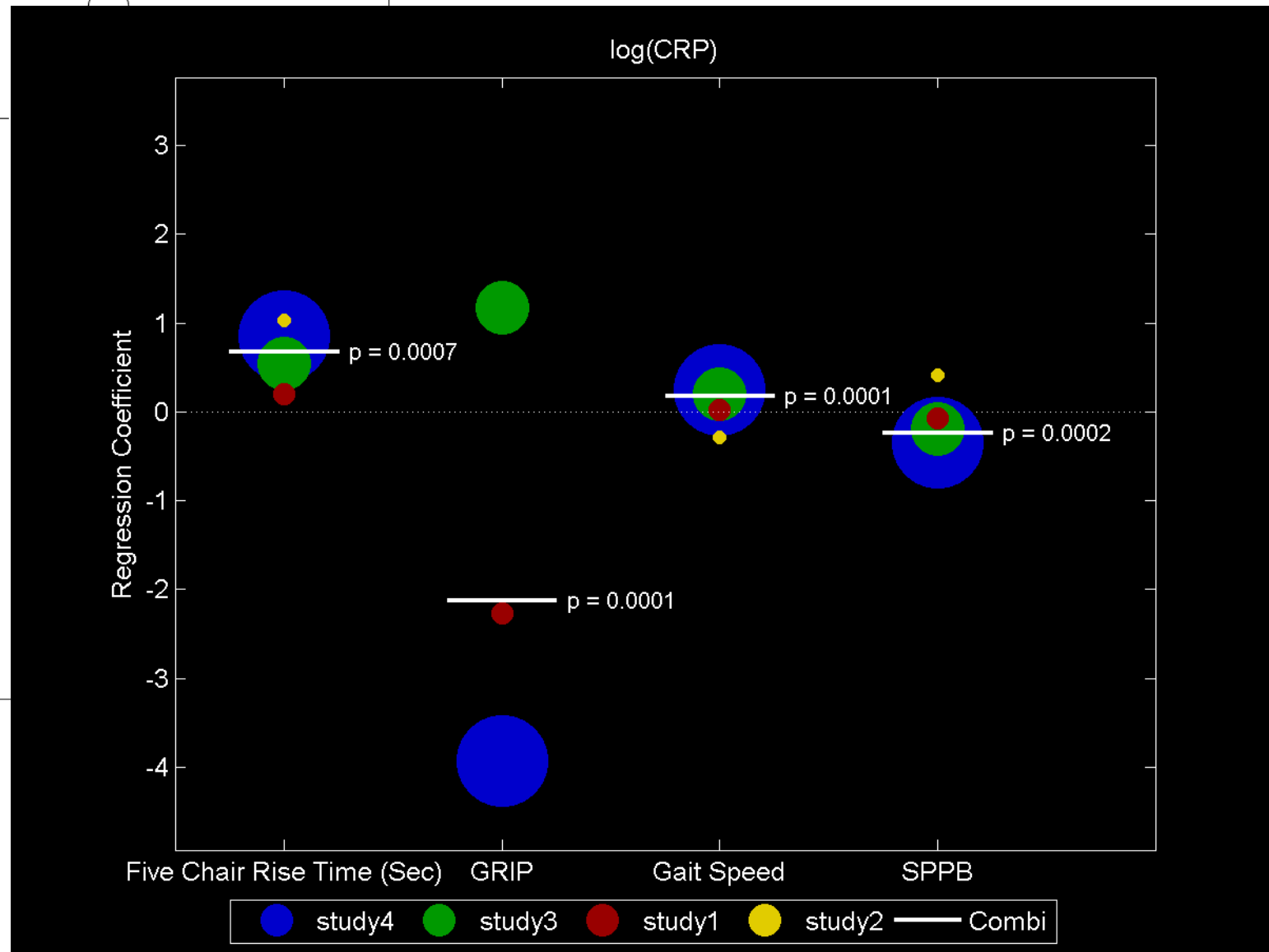
- Includes phenotypic data availability (including imaging), in addition to biospecimen information.
- Is dynamic by utilizing an intake form to update study information in real time.
- Is linked to common battery summary statistics (limited to the WFU OAIC secure web site).
- Represents a harmonization of the systems used for the ADRC and OAIC

WFU OAIC Integrated Aging Studies Databank and Registry (IASDR)

- Incorporates standardized procedures provides a means to collect the highest quality data (including a common set of data quality checks)
- Facilitates ability of OAIC investigators to efficiently capture data from multiple projects to address OAIC-wide research hypotheses
- Readily allows compilation of statistics across multiple studies
 - Brinkley TE J Gerontolo A Biol Sci Med Sci (2009)
 - Stehle JR Jr, J Gerontolo A Biol Sci Med Sci (2012)
 - Kim S Innov Aging (2017)
 - Handing EP Innov Aging (2020)
- Serves as a wealth of preliminary data for use in grant applications
- Contributes to all Aims of BIC



Brinkley TE J Gerontolo A Biol Sci Med Sci (2009)



A successful story starting with common battery analysis



- **Publication:**

Brinkley TE, Leng X, Miller ME, Kitzman DW, Pahor M, Berry MJ, Marsh AP, Kritchevsky SB, Nicklas BJ. Chronic inflammation is associated with low physical function in older adults across multiple comorbidities. J Gerontol A Biol Sci Med Sci 2009 Apr;64(4):455-61. [PMCID: PMC2657165](https://pubmed.ncbi.nlm.nih.gov/19211111/).

- **K01:**

K01 AG-033652-01A2 (Brinkley) 07/01/2010 – 06/30/2015

Cardiac Imaging of Thoracic Fat and Aortic Stiffness in Older High Risk Patients

- **R01:**

R01AG064014 (Brinkley) NIH/NIA

Dietary Effects on Imaging and Fluid-based Biomarkers of the Adipose-Brain Axis in Alzheimer's Disease

WFU OAIC Data Center

OAIC National Web Site

<https://www.peppercenter.org/>

WFU OAIC Secure Data Manage Website

<https://pepperwfu.phs.wakehealth.edu/>

Contacts

- Have an idea for a pilot? Need information on data management capabilities for the common battery? Contact Cindy Stowe (cstowe@wakehealth.edu)
- Requests are discussed by the Biostat Core leadership and priorities set through discussion with the WFU OAIC leadership.