geriatrics and clinical gerontology. Particular emphasis will be placed on studies with international reach.

FUNDING OPPORTUNITIES AND MECHANISMS AT NIA
M.A. Bernard, NIA NIH, Bethesda, Maryland
Dr. Robin Barr, Director of the Division of Extramural Activities at NIA, will review funding mechanisms that are appropriate for early career researchers. Emphasis will be placed on steps to obtaining a first R01, and opportunities that may be appropriate for international researchers.

SESSION 3220 (SYMPOSIUM)

HOW YOUNG AND FULL ADULT LIFESPAN COHORTS CONTRIBUTE TO OUR UNDERSTANDING OF LATE-LIFE FUNCTION
Chair: M.C. Morey, VAMC and Duke Medical Centers, Durham, North Carolina
Discussant: H.J. Cohen, Duke University
Physical function in the context of older populations has been well studied. Much of what is known about late-life function has been derived from studies that are often comprised exclusively of older adults. There is a paucity of studies that have common measures directly assessing physical performance across a full life span. Such studies present a unique opportunity to examine trajectories of successful or premature aging and identify characteristics associated with each. Furthermore, recent research has elucidated the influence of early childhood characteristics associated with accelerated aging.

This symposium brings together unique cohorts that inform our understanding of late life health and function as a consequence of early and mid-life experiences. The first paper will examine functional outcomes based on trajectories of sedentary behaviors across cohorts representing decades of life from ages 30 and above. The second paper will examine, in a birth cohort followed to mid-life, characteristics stemming from early childhood adversity that are associated with mid-life accelerated biological aging. The third paper will discuss the development and impact to two novel indices, derived from markers of inflammation and metabolism, representing “robustness” and “burden” and how they relate to physical performance. The fourth paper will examine and model latent group grip strength trajectories from early to mid-adulthood, and their predictors, using data from the Fels Longitudinal Study. We conclude with findings from the Helsinki Businessmen Study that will discuss how differences in midlife physical fitness affect the association between midlife cardiovascular risk factors and physical functioning in old age.

EXPLORING THE LINK BETWEEN SEDENTARY BEHAVIOR AND DIMINISHED FUNCTIONAL HEALTH OUTCOMES IN ADULTHOOD
K.S. Hall, Medicine-Geriatrics, Veterans Affairs/Duke University Medical Centers, Durham, North Carolina
Sedentary behavior (SB) in the absence of physical activity is expected to exert a deleterious effect on functional health outcomes. We examined age-related trends, by decade, in SB and explored whether SB was inversely associated with functional health across adulthood. Analyses included nearly 800 adults (aged 30–90+ years at baseline) in the MURDOCK health study. SB was measured objectively with an accelerometer. Functional health was measured using a series of physical performance tests and biochemical markers. SB was relatively high across the range of age cohorts, showing a steady increase with increasing age, particularly in the 6th & 7th decades of life. Significant sex differences were observed for SB, with women, in general, recording more sedentary time. Time spent in sedentary activities was strongly associated with diminished physical function and pronounced metabolic and inflammatory dysfunction. Findings suggest that reducing SB may help preserve functional independence and physiologic regulation with aging.

IMPACT OF EARLY PERSONAL HISTORY CHARACTERISTICS ON THE PACE OF AGING
D.W. Belsky, Medicine, Duke University School of Medicine, Durham, North Carolina
Aging is a lifelong process. Theory predicts that early-life adversity will accelerate biological processes of aging, leading to early-onset disease and frailty. Supporting evidence comes from studies of older adults that retrospectively assess histories of adversity and correlate them with current health status. We tested if early-adversity accelerated biological aging could be detected already during midlife, in time for preventive intervention to extend healthspan. We studied a 1972–3 birth cohort (N=954) followed prospectively through their 38th year of life, the Dunedin Study. We measured early adversity from records accumulated prospectively during Study members’ childhoods. We measured biological aging from biomarker data using three published algorithms, Biological Age, Age-related Homeostatic Dysregulation, and Pace of Aging. Findings show that exposure to early adversity accelerates the rate of biological aging already by the middle of the life course. Implementing geroprotective therapies during midlife may prolong healthspan for individuals with histories of early adversity.

CREATING BIOMARKER BURDEN AND ROBUSTNESS INDICES FOR PHYSICAL PERFORMANCE IN OLDER ADULTS
The human aging process is associated with decline in physical performance resulting from dysregulated inflammatory and metabolic systems; each has an effect on circulating serum markers of inflammation and metabolism. Biomarker burden and robustness indices were developed from twenty inflammatory and metabolic markers using a combination of three cross-sectional studies conducted in older adults. Each biomarker was individually correlated with gait speed, and all biomarkers underwent selection by step-wise regression on multiple bootstrap samples with respect to burden and robustness of physical performance. Twelve and eight biomarkers, respectively, were included in the indices that correlated with steady, step-wise change in outcome. The biomarker indices predict physical performance better than individual markers and are the first of such indices to link multiple inflammatory/metabolic markers with physical

Discussion: H.J. Cohen, Medicine, Duke University School of Medicine, Durham, North Carolina

Chair: M.C. Morey, VAMC and Duke Medical Centers, Durham, North Carolina

Discussant: H. J. Cohen, Duke University