age=70-91yrs, 61% female). We assessed PA using ActiGraph GT3X+ over 7 days. Mean activity, standard deviation (SD) of mean activity across days, and relative activity [(mean at each bin)/(total mean)] were calculated across 24-hours in 4-hour bins, adjusting for estimated rise-time. Lower SD of PA from 0-4 hours after rising was associated with greater PFS physical scores (r=-0.27, p=0.05). No measures of PA correlated with PFS mental scores. In older adults with lower physical fatigability, associations with greater variability in activity may indicate larger energy reserves.

SESSION 1245 (SYMPOSIUM)

PRESIDENTIAL SYMPOSIUM: EXPANDING THE GEROSCIENCE NETWORK
Chair: Matt Kaeberlein, University of Washington, Seattle, Washington, United States

In keeping with the 2019 GSA Annual Meeting theme of “Strength in Age—Harnessing the Power of Networks”, the Biological Sciences Presidential Symposium focuses on cutting edge approaches to understand the biology of aging using network and systems approaches.

OMICS IN AGING RESEARCH: FROM BIOMARKERS TO SYSTEMS BIOLOGY
Daniel Promislow, 1. University of Washington, Seattle, Washington, United States

Advances in whole genome sequencing have dramatically increased our potential to understand what shapes variation in rates of aging and age-related disease in natural populations, but we are still far from realizing this potential. Researchers have identified thousands of genetic markers associated with complex human traits. However, these markers typically explain a very small fraction of the observed variance, leaving an enormous explanatory gap between genotype and phenotype. I will present data from diverse species to illustrate the power of so-called endophenotypes—the epigenome, transcriptome, proteome, and metabolome—to bridge the genotype-phenotype gap. Using multivariate and network models that integrate genetic information with other endophenotype variation, we are closer than ever to understanding the mechanisms that account for natural variation in aging and age-related disease, and the evolutionary forces that have shaped that variation.

HETEROGENEITY OF AGING IN HUMAN POPULATIONS
Jing-Dong Jackie Han, 1. CAS-MPG Partner Institute for Computational Biology, Shanghai, China, China

Recently by analyzing the 3D facial images, we generated the first comprehensive mapping of the aging human facial phenome. We constructed a robust age predictor and found that on average people of the same chronological age differ by +/-6 years in facial age, with the deviations increasing after age 40. Using this predictor we identified slow- and fast-agers that are significantly supported by health indicators. We further profiled blood cell mRNA and lncRNA expression by RNA-seq of this cohort and computationally predict their regulatory networks and their contributions to the variation in aging rate among different individuals, and those that are modifiable by their lifestyles. By extending the study to a large Northern Chinese cohort of 10,000 people we can now use deep learning AI approaches to precisely estimate aging status based on 3D facial images and their associations with individuals’ health and medical history.

EPIGENETIC AND METABOLIC REGULATION OF AGING
Anne Brunet, 1. Stanford University, Stanford, California, United States

Aging is accompanied by a decline in the regenerative potential of most tissues. The mammalian brain contains regenerative neurogenic niches composed of neural stem cells (NSCs), neural progenitors, and other cells, including microglia, and endothelial cells. Neurogenic niches become less functional with increasing age. This deterioration could underlie cognitive and sensory restriction with age, although the exact age at which it occurs is still debated in humans. How the neurogenic niche changes during aging, and whether new cell types arise in older individuals, is not known. Our lab has embarked on a global characterization of the neurogenic niche during aging. This work provides a global understanding of the old neurogenic niche and suggests possible cause for NSC decline during aging. Results from these studies could open new avenues to counter age-related decline in the neurogenic niche and brain aging.

SESSION 1250 (SYMPOSIUM)

PSYCHOLOGICAL AND HEALTH CONSEQUENCES OF HELPING OTHERS: INNOVATIVE METHODS TO UNDERSTAND STRAINS AND GAINS
Chair: William E. Haley, University of South Florida, Tampa, Florida, United States
Discussant: Karl Pillemer, Cornell University, Ithaca, New York, United States

Older adults are often involved in prosocial behaviors including volunteering, informal assistance to family members, or extensive caregiving for family with chronic disease or disability. Many studies find that volunteering and providing informal support can enhance health and well-being, but family caregiving has generally been characterized as being highly stressful and harmful to health and well-being. Recent research has suggested that involvement in prosocial activities, including caregiving, can actually build resilience and buffer the impacts of stress, and that the commonalities across different types of prosocial behaviors in older adults deserve greater attention. This symposium brings together researchers who are using innovative methods to study prosocial behaviors, including measuring daily experiences and their linkages with affect, epidemiological methods, and use of health outcomes including serum biomarkers of inflammation and immunity, activity tracking, and mortality. Results across the presentations show that the effects of helping others can be considered as mixed blessings, with potentially harmful and helpful effects depending on contextual factors. Factors including a history of adverse childhood experiences, and dementia caregiving, can create particular challenges. The Discussant, Dr. Karl Pillemer, will discuss implications for future research on volunteering, informal assistance to family, and family caregiving. He will also address ways that...
HELPING OTHERS IS A MIXED BLESSING: IMPLICATIONS FOR DAILY WELL-BEING
Meng Huo,1 Yee Ng,2 and Karen Fingerman,3. 1. The University of Texas at Austin, Austin, Texas, United States, 2. University of Texas at Austin, Austin, Texas, United States.

The literature documents mixed findings regarding how helping others influences individuals’ mental and physical health. We assessed various types of support that older adults offered (e.g., emotional, practical, advice) and examined how helping others was associated with older adults’ daily mood and physical activity. This study utilized data from the Daily Experiences and Well-being Study, where 293 participants aged 65+ reported on their helping behaviors and mood at the end of each day across 5 days. Participants also wore Actical accelerometers to track physical activity. Multilevel models revealed that older adults reported greater negative mood and less physical activity on days when they provided emotional support. Yet, giving advice was associated with increased positive mood that day. Moreover, older adults spent less time being sedentary on days when they offered practical help. This study offers insights into psychological and health consequences of helping others by examining older adults’ everyday lives.

STRESS-BUFFERING EFFECTS OF VOLUNTEERING ON DAILY WELL-BEING: RESULTS FROM THE NATIONAL STUDY OF DAILY EXPERIENCES
Saehwang Han,1 Kyungmin Kim,2 and Jeffrey Burr,2. 1. University of Texas at Austin, Austin, Texas, United States, 2. University of Massachusetts Boston, Boston, Massachusetts, United States.

Based on theory and empirical evidence linking volunteering and health, we investigated the associations between daily engagements in formal volunteering, stressors, and negative affective well-being, focusing on the stress-buffering effect of volunteering. Using eight days of daily diary data from the second wave of the National Study of Daily Experiences (participants, N = 1,320; participant-day observations, N = 8,277), we estimated a series of multilevel models to assess the within-person associations between daily volunteering, stressors, and affect. Results indicated there were no direct associations between daily volunteering and negative affect. However, we found the association between daily stressors and negative affect (but not positive affect) was weaker on days when volunteering was performed compared to days volunteering was not performed. Taken together, our findings suggested that short-term health benefits associated with daily volunteering were largely based on the stress-buffering effects of helping others, rather than through a direct effect.

SESSION 1255 (SYMPOSIUM)

THE ASSISTED LIVING SETTING: CLINICAL CARE AND OUTCOMES
Chair: Barbara Resnick1. 1. University of Maryland School of Nursing, Baltimore, Maryland, United States.

Although the description of assisted living (AL) varies by state this term generally refers to residences that provide housing and supportive services, 24-hour supervision, and at

EFFECT OF ADVERSE CHILDHOOD EXPERIENCES ON DAILY SUPPORT TO FAMILY AND EMOTIONAL WELL-BEING IN ADULTHOOD
Jooyoung Kong,1 Yin Liu,2 and David Almeida3. 1. University of Wisconsin-Madison, Madison, United States, 2. Utah State University, Logan, Utah, United States, 3. Penn State University, University Park, Pennsylvania, United States.

Extensive evidence suggests that adverse childhood experiences (ACEs) can lead to negative health effects across a lifetime. This study examines the impact of ACEs on the frequency of providing daily support (i.e., unpaid assistance, emotional support, and disability-related assistance) to family members and the moderating effects of ACEs in the association between providing daily support to family and daily negative affect. Using the National Study of Daily Experiences II, we analyzed a total of 14,912 daily interviews from 2,022 respondents aged 56 on average. Key results showed a greater number of ACEs were associated with providing more frequent emotional support to family. We also found the significant interaction effect that adults with more ACEs showed greater negative affect on the days when they provided assistance to family members with disabilities. The findings underscore the long-term negative impact of ACEs on daily well-being in the context of family relationships.