

usual time of day for peak activity, regularity of circadian patterns) and incident dementia risk. The second presentation will present findings pertaining to understanding the link between sleep disturbance and inflammation (a substantial contributor to cognitive aging). The third will examine whether detailed daytime activity patterns associate with imaging-based brain volumes, independent of sleep disturbance. The final presentation will explore whether initiation of sleep disorder treatments may have the potential to change trajectories of cognitive performance as individuals age. Overall, the symposium will highlight the importance of sleep and activity patterns to brain health and stimulate discussion about improving sleep and circadian disruption as a target for dementia prevention efforts.

ANALYSIS OF REST-ACTIVITY RHYTHMS AND RISK OF INCIDENT MILD COGNITIVE IMPAIRMENT AND DEMENTIA IN OLDER WOMEN

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In older adults, desynchronized circadian rhythms have been associated with medical illness, including Alzheimer Disease. Activity, which can be easily measured using actigraphy over consecutive 24-hour periods, is a valid marker of entrained sleep phase and correlates with entrained endogenous circadian phase. We compare results of both parametric and non-parametric analyses to test the association of rest-activity patterns with incident MCI and dementia in 2132 older women who had 2 or more 24-hrs periods of actigraphy data collected at baseline. Follow-up neuropsychological testing approximately 5 years later is used to classify women as normal, MCI, or dementia. Logistic regression models are adjusted for age, clinic site, race, education, body mass index, functional status, comorbidities, medication use, and health habits. Results suggest the importance of overall amplitude and rhythmicity, as well as timing of activity patterns over the 24-hour day as risk factors for incident MCI/dementia.

CROSS-SECTIONAL AND LONGITUDINAL RELATIONSHIPS BETWEEN REST-ACTIVITY RHYTHMS AND INFLAMMATION IN OLDER MEN

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GSA 2019 Annual Scientific Meeting

Sleep disturbances and physical inactivity have been associated with chronic inflammation, an important risk factor for cognitive decline in the aging population. However most previous studies focused on the cross-sectional relationships between sleep and physical activity and inflammation. In the Outcomes of Sleep Disorders in Older Men (MrOS Sleep) study, we studied both the cross-sectional and prospective associations between characteristics of 24-hour rest-activity rhythms measured by actigraphy and inflammation index measured by multiple circulating markers. In cross-sectional analysis, a lower amplitude is associated with elevated inflammation (Odds ratio Q4 vs Q1 (95% Confidence interval): 1.65 (1.22, 2.24)). In prospective analysis, an earlier acrophase (<12:30) is associated with a two-fold increase in the risk of developing elevated inflammation over four years of follow up (2.08 (1.02, 4.23)). No individual inflammatory markers are associated with rest-activity rhythms. Our findings suggest that rest-activity rhythm characteristics predicts elevated inflammation.

ASSOCIATION BETWEEN BRAIN VOLUMES AND PATTERNS OF COMMUNITY-DWELLING PHYSICAL ACTIVITY

Amal A. Wanigatunga,¹ Yang An,² Christos Davatzikos,³ Jacek K. Urbanek,⁴ Adam P. Spira,¹ Eleanor M. Simonsick,² Susan M. Resnick,² and Jennifer A. Schrack¹, 1. *Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, United States*, 2. *National Institute on Aging, Baltimore, Maryland, United States*, 3. *University of Pennsylvania, Philadelphia, Pennsylvania, United States*, 4. *Johns Hopkins University and Medical Institutions, Baltimore, Maryland, United States*

With aging, brain structural integrity may influence patterns of physical activity (PA) performed in community-dwelling settings. In 281 cognitively-intact adults aged ≥ 65 years, linear regression models were fitted to examine whether MRI brain volumes (cc), assessed using an automated multi-atlas approach, were cross-sectionally associated with accelerometer-derived: 1) daily PA minutes and 2) activity fragmentation defined as the ratio of # of contiguous PA minutes over total PA minutes $\times 100$. Higher white matter in the parietal and temporal lobes were associated with more daily active minutes (2.8 (SE=1.0) and 3.1 (0.9) min/day, respectively; $p < 0.005$ for both) after adjusting for demographics, behavioral factors, medical conditions, and intracranial volume. Higher white matter in the temporal region was associated with lower fragmentation (-0.15 (0.05) %, $p = 0.004$). Our results suggest sensorimotor-related brain morphometry is connected with both the amount and manner in which PA is performed throughout the day in well-functioning older adults.

COGNITIVE TRAJECTORIES BEFORE AND AFTER SLEEP TREATMENT INITIATION IN U.S. OLDER ADULTS WITH SLEEP DISTURBANCE

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Sleep disturbances are associated with cognitive decline but it is not clear if initiation of sleep treatments mitigates decline. We used the 2006-2014 Health and Retirement Study. At each wave, participants were administered cognitive assessments and scores were summed (values=0-35; higher=better cognition). All participants also reported if, in the past two weeks, they had taken medications or used other treatments to improve sleep. Our sample (N=4,650) included individuals who at baseline were cognitively normal and untreated for sleep, and at any wave reported some sleep disturbance. We characterized cognitive performance over study period with comparisons before and after sleep treatment initiation. Between 2006-2014, participants exhibited declines in cognitive performance (B=-2.40; 95% CI=-2.73, -2.06; p<0.001) after controlling for confounders. Following sleep treatment, cognitive decline became less pronounced (interaction B=0.94; 95% CI=0.21, 1.67; p=0.013). Results suggest that in older adults with sleep disturbance, initiation of sleep treatment may slow cognitive decline.

SESSION 2130 (SYMPOSIUM)

INTEREST GROUP SESSION—PATIENT/PERSON ENGAGEMENT IN RESEARCH INTEREST GROUP (PPER-IG): STRENGTH IN AGE: ENGAGING OLDER ADULTS AS HEALTH RESEARCHERS THROUGH COMMUNITY-BASED PARTNERSHIPS

Chair: Silvia Sörensen, *University of Rochester Warner School for Education and Human Development, Rochester NY, United States*

Co-Chair: Rebecca S. Allen, *The University of Alabama, Tuscaloosa, Alabama, United States*

Discussant: Reza Yousefi Nooraie, *URMC, University of Rochester School of Medicine and Dentistry, New York, United States*

The lack of clear translation of health research to improving older under-served patients' lives presents a serious problem. Studies of aging rarely include the older adults themselves in the process of conceptualizing questions, implementing the research, and applying and evaluating the results. Lack of input particularly from marginalized and minority older adults may compromise the relevance and accuracy of health research findings. In this symposium, we present the design and evaluation of two projects funded by the Patient-Centered Outcomes Research Institute (PCORI), in which older adults are trained to understand research language, culture, and methods, and are subsequently incorporated into research projects in a variety of roles. Silvia Sörensen will describe the "Engaging Older Adult Learners as Health Researchers" (ENGOAL) in Rochester, NY. This program provides six months of weekly classes and 4-6 months of research apprenticeships for older adults. Dorine Otieno and Kate Kondolf will describe evaluation results from both quantitative and qualitative analyses. Rebecca Allen

will describe the design and implementation of "Sharing Opinions and Advice about Research (SOAR) in the Deep South," a partnership of The University of Alabama with community stakeholders from Sumter and Holt County to recruit and train community members to assist in the formulation of research questions based on the needs of their communities. Allen and Dragan will present the evaluation results from this project with regard to implementation and graduate education. Reza Yousefi-Nooraie will synthesize the insights from these projects and add the perspective of a social network analyst.

ENGAGING OLDER ADULT LEARNERS AS HEALTH RESEARCHERS: PROGRAM OVERVIEW

Silvia Sörensen,¹ Sandhya R. Seshadri,² and Joyce Duckles³,
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Studies of aging rarely include the older adults themselves in the process of conceptualizing questions, implementing the research, and evaluating the results. To provide opportunities for community members to become engaged in research, researchers and community stakeholders developed "Engaging Older Adult Learners as Health Researchers (ENGOAL)." This program educates older adults from underserved and under-resourced communities about geriatric health and research methods, enabling them to become Research Partners. Two cohorts of African-American seniors (N=21) aged 53-79 have participated or are currently participating in six months of weekly classes followed by 4-6 months of research apprenticeships. Content and structure of classes (covering qualitative and quantitative research approaches and language, salient health themes, and developing a research proposal) will be described. Challenges and successes in providing research apprenticeships (interviewing for a study on vision, reviewing recruitment materials, evaluating a mentorship program, and testing a diabetes management program) will be discussed.

PROJECT SOAR PARTNERSHIPS: EXPLORING ADVANCE CARE PLANNING AMONG RURAL AFRICAN AMERICANS

Rebecca S. Allen,¹ Pamela Payne-Foster,¹ JoAnn S. Oliver,² Christopher H. Spencer,¹ and Deanne M. Dragan¹,
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Sharing Opinions and Advice about Research (Project SOAR), funded by PCORI, trained individuals living in under-resourced and underserved communities how to evaluate and provide advice to scientists about recruitment procedures, survey items, and intervention components for implementation in their communities. In partnership with the HELLO Project (Van Scoy, Green, & Volpe, 2019), Project SOAR community partners recruited 50 rural African American adults to consider their values, plans, and treatment preferences near the end of life while playing the HELLO game. Community and research partners along with a HELLO Project representative facilitated questionnaire