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DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES AND EDUCATION
Board on Behavioral, Cognitive, and Sensory Sciences

Workshop on Understanding Pathways to Successful Aging: Behavioral and Social Factors Related to Alzheimer's Disease

SPEAKER BIOS

Session One: Methodological Approaches

Roger A. Dixon, Ph.D. is Canada Research Chair (Tier 1) in Cognition and Aging, Professor of Psychology, Director of the Victoria Longitudinal Study (VLS), and member of the Alberta Neuroscience and Mental Health Institute at the University of Alberta. The VLS, which features an international team of collaborators and trainees, has been funded continuously for over 25 years by NIH (National Institute on Aging) and other sources. It is a large-scale, multi-cohort, epidemiological study of neurocognitive, biological, genetic, environmental, educational, lifestyle (social, cognitive, physical), and health changes in aging. Current research emphases include examining (1) dynamic, interactive, and synergistic functions of risk, protective, and resilience markers representing multiple domains of aging, and (2) how these markers influence trajectories, transitions and outcomes in healthy, normal, impaired, and neurodegenerative changes. Dr. Dixon is an original member of the Canadian Consortium on Neurodegeneration in Aging, to which he contributes leadership activities in the Biomarkers Platform and Biomarkers Team.

Arthur Kramer, Ph.D. is Senior Vice Provost for Research and Graduate Education and a professor of psychology and engineering at Northeastern University. He previously served as the Director of the Beckman Institute for Advanced Science & Technology and the Swanlund Chair and Professor of Psychology and Neuroscience at the University of Illinois. Professor Kramer's research projects include topics in cognitive psychology, cognitive neuroscience, aging, and human factors. A major focus of his lab's recent research is the understanding and enhancement of cognitive and neural plasticity across the lifespan. He is a former Associate Editor of *Perception and Psychophysics* and is currently a member of six editorial boards. Professor Kramer is also a fellow of the American Psychological Association, American Psychological Society, a former member of the executive committee of the International Society of Attention and Performance, and a recipient of a NIH Ten Year MERIT Award. Professor Kramer's research has been featured in a long list of print, radio and electronic media including the *New York Times, Wall Street Journal, Washington Post, Chicago Tribune, CBS Evening News, Today Show, NPR* and *Saturday Night Live.*

Michelle Carlson, Ph.D. is an associate professor in the Department of Mental Health at the Johns Hopkins Bloomberg School of Public Health. She leads observational and randomized controlled trial research to evaluate environmental and biologic modifiers of neurocognitive aging and dementia risk, with over 120 articles and 8 chapters. Dr. Carlson has co-developed the Baltimore Experience Corps model in 1998 and has served as a Project leader on the Baltimore Experience Corps Trial (BECT) to evaluate the impact of volunteer service on older adults' cognitive, brain, and physical health. Within this trial, Dr. Carlson pioneered the use of brain imaging and accelerometers to evaluate the mechanisms through which social engagement impacts older adults' health and brain plasticity. Dr. Carlson continues to innovate in the integrated analysis of GPS-enabled accelerometers and geo-spatial tools (GIS) to determine how social engagement and activity in daily life may impact cognition, mood, and brain health in mid and early late- life. Her lab's goals are to use these tools to identify the most effective and sustainable ways that adults can buffer the brain and boost hippocampal function to delay risk for Alzheimer's disease, for which targeted treatments have yet to be identified. She is also interested in using these tools to deliver low-cost interventions to underserved populations- young and older- who are at elevated risk for health disparities.

Session Two: Personality

Angelina R. Sutin, Ph.D. is an assistant professor in the Department of Behavioral Sciences and Social Medicine at the Florida State University College of Medicine. Her research focuses on the development of personality traits across the lifespan and how personality contributes to mental and physical health over time. Her work includes how personality shapes the trajectory of cognition before the onset of dementia, personality as a risk factor for Alzheimer's disease and other cognitive impairments, and personality as a psychological resource that fosters resilience to neuropathology. She also examines the role of personality in behavioral and physiological protective/risk factors to identify mechanisms that explain the relation between personality and positive/negative health outcomes. The goal of her research is to leverage personality traits to promote optimal aging.

Grant Edmonds, Ph.D. is an associate scientist at the Oregon Research Institute. His research interests are focused on understanding the mechanisms linking personality to physical health across the lifespan. His work is predicated by two ideas: (1) personality is an established predictor of mortality and, (2) personality changes in developmentally important ways across the lifespan. Within this framework, he is committed to developing and testing models relating consequential change in personality to trajectories of health via multiple paths. These include behavioral pathways, social environmental influences, and ultimately biological systems. The larger goal is to construct a model of personality development and health change that explains the personality-mortality connection, and provides a guide for planning future interventions that may benefit public health. An important focal point of Dr. Edmonds' work involves enhancing the assessment of personality constructs by incorporating multiple modes of measurement. These include peer and self-ratings of dispositional tendencies, cognitive behavioral measures, and personality in the context of social dyads.

Antonio Terracciano, Ph.D. is an associate professor in the Department of Geriatrics at Florida State University. Previously, he was a staff scientist at the National Institute on Aging, NIH. His research focuses on how psychological traits and genetic factors contribute to physical and mental health across the lifespan. Dr. Terracciano uses longitudinal and cross-cultural methodologies to examine changes in traits with age, from adolescence to older adulthood. Dr. Terracciano has also led or participated in large collaborative genome-wide association studies to identify common genetic variants associated with personality traits, depression, and cigarette smoking. His research aims to individuate factors that contribute to health and longevity, by reducing health risk behaviors and promoting resilience against diseases of aging, such as Alzheimer's disease.

Session Three: Social and Cognitive Engagement

Deborah Barnes, Ph.D. is an associate professor in the Department of Psychiatry at the University of California, San Francisco School of Medicine. Her research is designed to minimize the impact of the impending dementia epidemic using a three-pronged approach for developing and evaluating strategies to maintain cognitive function and prevent or delay dementia onset in late life: 1) identification of risk factors for cognitive impairment and dementia in older adults, 2) evaluation of prevention strategies for helping older adults to maintain cognitive function with age, and 3) development of dementia risk prediction models that can be used to estimate the impact of risk factor reduction and to target prevention strategies toward those who are at greatest risk.

Elizabeth Stine-Morrow, Ph.D. is a professor of Educational Psychology at the University of Illinois at Urbana-Champaign with appointments in Psychology and at the Beckman Institute. Professor Stine-Morrow's research is broadly concerned with the multifaceted nature of adult development and aging, and in particular, how cognition and intellectual capacities are optimized over the adult life span. She has examined how self-regulated adaptations (e.g., selective allocation of attentional resources, reliance on knowledge-based processes, activity engagement) engender positive development in adulthood. Much of this research has focused on the important role of literacy and the processes through which effective reading is maintained into late life. This research has been funded by the National Institute on Aging, the National Science Foundation, and the Institute for Educational Sciences.

Denise Park, Ph.D. is the Director of Research at the Center for Vital Longevity, Distinguished University Chair in Behavioral and Brain Sciences, and Regents' Research Scholar at UT Dallas. Her primary research focus is on (a) understanding the neural mechanisms that account for age-related cognitive decline, and (b) determining how enriching and cognitive demanding experiences can facilitate cognitive health, thus delaying brain aging and the onset of Alzheimer's disease. Dr. Park has also pioneered research in cultural neuroscience, focusing on understanding how cultural experiences sculpt neural function and behavior in both old and young adults. Dr. Park studies the entire adult lifespan and is particularly interested in detecting neural footprints of Alzheimer's disease that appear as

early as well as middle age in the brain, well before behavioral symptoms appear. Dr. Park directs the Dallas Lifespan Brain Study (DLBS), a large longitudinal study that is one of the most comprehensive studies of the lifespan in the world.

Session Four: Education

Jennifer Manly, Ph.D. is an associate professor of Neuropsychology in Neurology at the G.H. Sergievsky Center and the Taub Institute for Research in Aging and Alzheimer's disease at Columbia University. Her research on cognitive and genetic aspects of aging and Alzheimer's disease among African Americans and Hispanics has been funded by the National Institute on Aging and the Alzheimer's Association. Her work clarifies the independent influences of language, acculturation, educational experiences, racial socialization, and socioeconomic status on cognitive test performance, with the ultimate goal of understanding more about the relationship between culture and cognition. Recent work focuses on the specificity of cognitive tasks in detecting subtle cognitive decline among illiterate and low-literacy elders. This work has important implications for determining the complex influence of reading and writing skills on brain function.

Chandra Muller, Ph.D. is professor in the Department of Sociology at the University of Texas at Austin. Dr. Muller's current research is on how schools and education shape life course outcomes such as work and health. Her work focuses on inequality in schools and effects across the life cycle. In particular, she focuses on STEM (science, technology, engineering and math) preparation and careers. Of primary interest is the diversity in experiences and disparities according to gender, race and ethnicity, social class, as well as disability, immigration or language minority status. She has several large-scale studies that involve collecting, producing, and analyzing national longitudinal databases to study the roles of education in work, family, and health from adolescent through midlife.

William Kremen, Ph.D. is a professor in the Department of Psychiatry at the University of California, San Diego. Dr. Kremen's primary current research focus is on behavioral genetic/twin studies of cognition and aging. He has led the Vietnam Era Twin Study of Aging (VETSA) projects since 2003. Wave 3 of the longitudinal VETSA project began in 2015. There are two major goals of these projects: 1) early identification of risk for mild cognitive impairment (MCI) and Alzheimer's disease, including the search for novel biomarkers; and 2) elucidating the heterogeneity of aging trajectories. This work involves examination of genetic and environmental influences on the interplay among cognitive, brain, biomedical, and psychosocial factors. Genome-wide genotyping and epigenetics are also integrated into traditional twin designs. Twin studies also make it possible to conduct cotwin-control designs, which provide an ideal case-control study.