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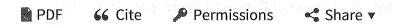
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The 87%: Guest Editorial @

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One in eight people 65 and older (13 percent) has Alzheimer's disease.

Alzheimer's Association, 2012 Alzheimer's Disease Facts and Figures, Alzheimer's & Dementia, Vol. 8, p.14, 2012.

After digesting this sobering fact, one might reasonably wonder—what about the other 87% of the 65+ age group? Although most older Americans are living without cognitive impairment, they still face the looming specter of dementia in much later life and very likely have experienced subtle declines in cognitive function. For these reasons, agerelated cognitive decline demands our attention and a continued, concerted research effort. If dementia can be prevented, it will come from a better understanding of the aging

brain and its capacity to adapt in the face of altered or diminished function. This understanding will aid in the development of appropriate targets for therapeutics and remedial actions that maintain healthy cognitive function.

Age-related decline in cognitive function—including changes in attention, memory, learning, executive function, and language—is real and varies widely from one individual to the next, substantially influencing the quality of life, the character of personal relationships, and the capacity for making informed decisions about health care, retirement, and other issues faced daily by millions of older adults. The National Institute on Aging (NIA; see www.nia.nih.gov) maintains a longstanding commitment to supporting research through its intra- and extramural programs aimed at the understanding the aging brain, cognitive outcomes, and their impact on quality of life. In 2006, the leadership of the NIA was approached by the McKnight Brain Research Foundation (MBRF; see www.tmbrf.org) to explore avenues for creatively advancing the field of cognitive aging research and accelerating the discovery of therapeutics and strategies for the prevention of impairment. Through this public/private partnership, established by the Foundation for NIH (see www.fnih.org), the NIA and the MBRF have been able to create new energy and synergy in this research arena. Established in 1999, the MBRF has set itself apart from many other foundations with disease-based missions by having as its goal "to improve quality of life through the understanding and alleviation of age-related memory loss." The Cognitive Health and Aging Research Partnership continues to provide a platform for activities of mutual interest in cognitive aging research.

The first joint activity between the NIA and the MBRF was the Cognitive Aging Summit, held in 2007. That initial conference served to galvanize the burgeoning cognitive aging research field, bringing national attention to both research advances and needs. Recommendations from the 2007 Summit stimulated federal research solicitations that in 2009 resulted in the award of approximately \$28 million in research funds over 5 years to establish neural and behavioral profiles of cognitive aging and to push translational research forward through support of pilot intervention trials for remediation of agerelated cognitive decline. Three years later in 2010, a second Cognitive Aging Summit was held to mark progress, highlight the targeted research initiatives, and maintain the momentum started by the first Summit.

The 2010 Summit brought together approximately 350 participants with expertise in a variety of research fields for a 2-day discussion of cutting edge advances in our understanding of age-related brain and behavioral changes, with a particular focus on the clinical therapeutic enterprise. An Executive Session held on the final day of the conference generated several recommendations for ways to further advance the study of

cognitive aging, including (a) increasing opportunities at the interface of basic and clinical science to enhance the clinical trial enterprise; (b) encouraging more integrative models of mechanisms for age-related decline/maintenance/adaptation and more multidisciplinary research in the field; (c) use of a uniform set of measures of cognition in both animal and human studies as a translational bridge; (d) more investment in research examining the role of education, social engagement, and social networks in cognitive maintenance/decline with age.

This special issue of the Journal of Gerontology, coedited by Drs Susan Resnick and Peter Rapp (NIA Intramural Research Program) highlights the major themes and specific research findings presented at the 2010 Summit. The opening, plenary lecture of the Summit was delivered by Dr Carol Barnes (University of Arizona), aptly recognizing the tremendous progress that has been realized in research on cognitive aging over the last 50 years, but highlighting as well the enormous challenges we face in confronting the looming crisis of a rapidly aging population. Dr Barnes also highlighted the considerable difficulty in even defining "normal aging." The articles included here summarize the six scientific sessions of Summit, covering a range of key topics in current research: I. Epigenetic contributions; II. Neural circuits, networks and plasticity; III. Inflammatory, oxidative and metabolic processes; IV. Social interactions and stress; V. Design considerations in clinical research; VI. New opportunities in clinical trials. As this collection of reports illustrates, the breadth of perspectives and state-of-the-art approaches brought to bear on questions about cognitive aging rival that in any other field of biomedical research. Cognitive aging research has taught us not only about the behavioral and neural mechanisms of age-related decline but has contributed significantly to the fundamental understanding of how the brain works and how memories are generated, stored, and retrieved.

Although the outstanding caliber and creativity of research presented in this special issue is clearly an encouraging sign, efforts to define the basis of healthy brain aging have lagged behind research on the mechanisms of neurodegenerative disease. An understanding of cognitive and brain aging in individuals who maintain cognitive health is a prerequisite to understanding disease–associated change. The vision of the NIA and the MBRF to promote brain health and prevent cognitive impairment is a bold one as our society slowly transforms its collective model of aging from one of survival to one of success. If healthy longevity is the goal, if dementia is to be prevented, or its progression slowed, a concerted research focus on the 87% will be critical. This is the landscape of opportunity. Let us not squander it.

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