

**Summaries of Talks in Order of Presentation for April 3, 2009**  
**Living Long, Living Well**

Aging Well: Never Too Soon, Not Too Late  
**Margie Lachman**

Living Long, Living Well is an open forum to launch the Brandeis Lifespan Initiative on Healthy Aging (LIHA) with a showcase of cutting edge research. The presentations span topics across disciplines and levels, from cells to cognition and care. The speakers focus on our research efforts to promote healthy bodies and minds, and supportive social relations and policies throughout the lifespan. The lifespan approach, which focuses on prevention and intervention as early as possible, can be contrasted with the more conventional focus on treatment after problems have begun. Although even in such cases, it is often “never too late” to make a difference, we also present the idea it is “never too soon” to begin thinking about successful aging. I present two research examples from my lab to illustrate these two approaches. Strong for Life, a collaborative project with Boston University, is a resistance exercise intervention for those over 60, who already have some disability, and results show that we can improve their body strength and memory. In the Midlife in the U.S. Study, we identified a composite of controllable lifestyle factors beneficial for cognition and health throughout adulthood. Collectively, the work we do at Brandeis LIHA is designed to increase the quantity and quality of life, that is, to maximize the number of “good” years. We are establishing partnerships with other universities and institutions in the Boston area that share our goals for optimizing the aging process.

The Coming Epidemic of Age-Related Neurologic Diseases and What to Do About It  
**Greg Petsko**

Life is a Ponzi scheme. For thousands of years, we’ve depended on a large base of young people to support a small pyramid tip of very old people. But the percentage of elderly is increasing much faster than that of the young, threatening to bring the entire pyramid down; because we face an epidemic of age-related neurologic disorders like Alzheimer’s and Parkinson’s diseases. Only a concerted effort to find cures and preventative treatments for these diseases can save mankind from an economic and public health crisis of global proportions.

Repair of Broken Chromosomes and Maintenance of Chromosome Stability  
**James Haber**

One of the hallmarks of aging is the deterioration of genome integrity. Chromosome ends become shorter and eventually lose the ability to protect chromosomes from degradation. Stem cells accumulate mutations that may lead to cancer. Using budding yeast as a model organism we study how chromosome

ends can be "replenished" by a process termed break-induced replication. We also study how repair of broken chromosomes that arise during chromosome replication is accompanied by a high rate of mutation.

Stress, Inflammation and Aging“  
**Nicolas Rohleder**

Psychosocial Stress is a growing health hazard in our society, and held accountable for an increasing number of biomedical and psychological problems. We are beginning to uncover the pathways linking stress to health outcomes, and inflammation is emerging as the missing link. Inflammation is stimulated by life-long experiences of stress, which makes it especially relevant in the context of our aging society, and inflammation is a central pathophysiological process in many age-related health problems such as heart disease, diabetes, and cancer, but also in age-related declines in cognitive function.

Mild Hearing Loss in Adult Aging and How it Impacts Cognitive Performance  
**Arthur Wingfield**

Hearing Loss in Older Adults can Compromise Cognitive Resources. In his presentation Dr. Wingfield will describe the incidence and nature of age-related hearing loss and recent experiments from his laboratory showing how both aging and hearing acuity interact in speech comprehension in everyday settings. Of special interest is the concern that effortful listening attendant to even mild hearing loss can not only be exhausting for the listener, but can draw mental resources that would otherwise be available for higher-level comprehension and encoding what has been heard in memory.

Emotion Regulation and Aging  
**Derek Isaacowitz**

Despite well-documented changes in physical and mental functioning, older adults by and large report being happy and satisfied with their lives. I will consider the evidence that late life can be an emotionally rewarding time, and then will review what we know about the sources of that satisfaction. In particular, how older adults look at and remember emotional information will be considered as a mechanism that allows them to maintain well-being in the face of age-related changes.

Aging and Attention in a Busy Environment  
**Robert Sekuler,**

In a multiple object tracking (MOT) task, young and older adults attentively tracked a subset of ten identical, randomly moving disks for several seconds, and then tried to identify those disks that had comprised the subset. This laboratory task was interesting because it mimicked several important,

multi-tasking situations that are encountered in everyday life.

Video-game playing helped performance: Young adults who habitually played video games performed significantly better than those who did not. Age mattered, too: Compared to young subjects (mean age = 20.6 years) with whom they were matched for video game experience, older subjects (mean age = 75.3 years) showed greatly reduced ability to keep track of multiple moving objects. This age-related difference was exacerbated by faster target movement or longer tracking times. Control measurements with stationary disks show that the age-related decline in MOT was not caused by a general change in memory per se. Instead, the age differences probably reflect differences in way that older and younger people distribute their limited attentional resources.

Cognitive Neuroscience of Aging

**Angela Gutchess**

Aging is associated with declines in a number of cognitive abilities.

For example, older adults often remember less and what they do remember tends to be less accurate and less detailed compared to young adults.

In contrast with this pattern of declines in behavioral performance, recent evidence from cognitive neuroscience illustrates flexibility in the engagement of brain regions with age. I will review some of the exciting evidence for neural compensation and reorganization with age, and discuss the potential functions of this malleability in brain activity.

The Culture of Aging: Social-Moral Values, Care and Conceptions of Personhood

**Sarah Lamb**

The significance of aging is not limited to the customary question of how to care for increasing numbers of dependent elderly as the world faces dramatic population maturation. Rather, beliefs and practices surrounding aging illuminate much broader social-cultural phenomena, such as compelling moral visions of how best to live, understandings of personhood, and the proper relationship among individuals, families, the market and the state.

Drawing on years of intensive anthropological fieldwork in India, I examine two features of the extraordinary transition India is going through at present, as the nation experiences a decline in multigenerational co-residence. First, India's new "Maintenance and Welfare of Parents and Senior Citizens" bill mandates not that the state shoulder elder-care responsibilities, but rather that adult children who fail to care for aging parents will be fined or imprisoned. Second, the practice of living alone or with a spouse--"independently"--which has long been considered a normal and even ideal form of aging in the United States (practiced by about 80 percent of the over 65 population) is in India on the rise (now at 11 percent of the

aged population), but widely thought to be "unnatural," "inhuman," and even more culturally bizarre than living in a group old age home.

Examining aging across cultures helps us answer the question: Where *is* the best site of elder care and elder living: the individual, the family, the market, or the state? And: What kinds of social, cultural, moral and economic principles are entailed by the competing answers to this abiding question?

### The Looming Economics of Health Care for an Aging Society **Christine Bishop**

The growth of older age cohorts in itself contributes a surprisingly small portion of expected future growth in health expenditures, because overall health sector technological advances are so expensive, age-adjusted rates of disability are falling and lifespans are lengthening, pushing expensive final months of life to the oldest ages when they are relatively less costly. However, health expenditure growth will have a substantial impact on future elders: many older adults already spend a large proportion of income on health insurance premiums, copayments, and uncovered health services, and for some, spending is catastrophic. If public policy cannot control health expenditure growth, the amount that future older households will need to budget for premium payments and out-of-pocket spending will increase still further, causing extraordinary burdens for retirees with little financial flexibility.

### Nursing Home "Culture Change" and Person-centered Care **Walter Leutz**

A big part of what makes nursing homes such bad places to work and to live is an assembly-line approach to care: Alienated piece workers take care of objectified residents by meeting targets set by regulations. As an alternative, some nursing homes are trying to switch to a person-centered model of care, in which multi-disciplinary teams of workers develop flexible responses to residents' preferences for waking, eating, bathing, etc. One question in the field is whether a unionized workforce hampers or helps the change to person-centered care. This case study of two NYC nursing homes shows how management and a union collaborated to change care practices, with apparent improvements in workers' morale and residents' autonomy.

### The Aging Workforce **Lisa Lynch**

The US Bureau of Labor Statistics projects that by 2020 almost one in four workers in the labor force will be over the age of 55. Availability of health insurance, adequacy of public and private pensions, improved health and life

expectancy, and changes labor demand will all impact how and when individuals retire from paid employment. How our labor market institutions evolve and are purposely re-designed to meet the challenges and opportunities that this demographic change presents will have a significant impact on the economic capacity of our economy and the quality of work life for millions of workers.