

*No matter how long you live,
never cease to stand like curious children
before the Great Mystery into which we are born.*

—Albert Einstein

aging news

NEWSLETTER OF THE INSTITUTE ON AGING (IOA) | UNIVERSITY OF WISCONSIN-MADISON



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New Initiative Promotes Financial Security in Retirement

The Social Security Administration has funded the Financial Literacy Research Consortium (FLRC) to develop innovative ways to help Americans plan for their retirement. The FLRC will tailor materials for people at different stages in their working lives, including near retirees and those who have left the work force, and for traditionally underserved populations, to help them better understand Social Security benefits and retirement savings options.

The Consortium, which is supported through five year agreements, consists of three national centers established through a competitive grants process. One was awarded to UW-Madison School of Human Ecology's Center for Financial Security, which received \$1.48 million in first year funding (2009/10). IOA Affiliate **Karen Holden** (Prof. Emeritus, Consumer Science & Public Affairs, UW-Madison) spent the first two weeks of her retirement responding to FLRC requests for proposals, and is now a Principal Investigator of the grant, along with J. Michael Collins (Asst. Prof., Consumer Science & Cooperative Extension, UW-Madison).

UW's Center for Financial Security (see www.cfs.wisc.edu) will conduct research with a life course perspective, identifying appropriate interventions for the key times

in people's lives that could motivate a positive change in financial behavior. Researchers will focus on low-income and special populations, such as families affected by disabilities, incarceration, or long-term unemployment. They will explore the role of education in overcoming a lack of financial knowledge, with a goal toward increasing financial security during retirement, during difficult economic cycles, and during personal financial crisis, such as retirees who face financial problems due to health issues.



As part of this effort, UW's Center for Financial Security sponsored a symposium in April on "Family Financial Security." The event included panel discussions on retirement savings, banking and financial service choices, credit use, and thrift and debt. The program and papers are available at: www.sohe.wisc.edu/new/centers/financialsecurity/2010symposiumagenda.html. Prof. Holden will also be editing a special edition of the *Journal of Family & Economic Issues* that will include some of the papers.

The other FLRC Centers have been established at Boston College and the RAND Corporation, where projects will include developing a web-based retirement guide and creating a financial literacy "food pyramid." See: www.socialsecurity.gov/retirementpolicy/financial-literacy.html



UPCOMING EVENTS IN MADISON, WI

Current Concepts
in Nutrition and
Aging Conference
September 16, 2010
(888) 391-4255

Institute on Aging
22nd Annual
Colloquium
September 21, 2010
(608) 262-1818

For more details, see:
aging.wisc.edu/outreach

The Consequences of Worrying About Job Loss

The national economic downturn has left workers at all wage levels concerned about the future of their jobs. A recent study tested whether worrying about job insecurity, as opposed to actual job loss, has consequences for our health. In the short term, responses to worrying about unemployment could be emotional (including dissatisfaction and anxiety), physiological (such as an elevated heart rate) or behavioral (such as absenteeism, lack of concentration, or drug use), while in the long term the accumulation of these responses could result in more permanent consequences for mental and physical health.

Two national samples were used in this research, **The American's Changing Lives** (ACL) study (with Wave 1 in 1986 and Wave 2 three years later in 1989) and **MIDUS** (with Wave 1 in 1995/96 and Wave 2 ten years later in 2005, see p. 6).

Participants reported on their overall health, as well as symptoms of depression in ACL and negative affect (having negative or bad feelings) in MIDUS. Perceived job insecurity was measured through responses to questions such as, "How likely it is that during the next couple of years you will involuntarily lose your main job?"

Results showed that respondents who were worried at *both* Waves 1 and 2 that they would lose their jobs had significantly worse overall health in both samples and significantly more depressive symptoms among the ACL group.

Among ACL respondents, persistent job insecurity had a larger association with poor health at Wave 2 than either having high blood pressure or being a smoker at Wave 1. In contrast, insecurity at *either* Wave 1 or 2, but not at both,

was associated with poor health in only one case: at Wave 2 it was connected with negative affect among MIDUS respondents. However, because Wave 2 measurements were taken 10 years after Wave 1, the perceived job insecurity may have been present for enough years to have an ill effect on health.

These results suggest that concerns about job loss are associated with negative health consequences, separately from the effects of actual unemployment. In fact, the estimated impact of feeling insecure was greater than the estimated effects of job loss. This may be because those who worry about job security

experience ongoing ambiguity about the future and are unable to take action to alleviate their worries unless they actually lose their jobs. Programs designed for unemployed workers are unlikely to help those concerned about job loss, because only a subset of them will go on to actually become unemployed. The authors

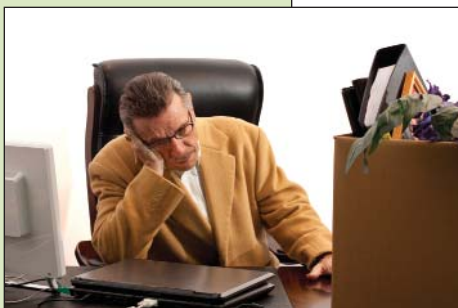
point out that new types of interventions are needed. Could organizations intervene to reduce perceptions of insecurity, or are broader governmental policies needed that would cushion the adverse effects of unemployment and thereby reduce the stress associated with worrying about job loss? It would be useful to know more about conditions that affect worker's perceptions of job security, as well as examine how workers respond to their perceptions. Do workers who change jobs fair better than those who remain? The authors conclude that perceived job insecurity remains a potential threat to population health.

Source:

Burgard, S. A., Brand, J. E., & House, J. S. (2009). Perceived job insecurity and worker health in the United States. *Social Science & Medicine*, 69(5), 777-785.



Anxiety over possible unemployment had a larger association with poor health than either high blood pressure or smoking



22ND Annual Colloquium on Aging



Keynote- Finding Happiness and Meaning: What the Research Tells Us

Richard M. Ryan, PhD

Prof. of Psychology, Psychiatry & Education; University of Rochester

People search for happiness and meaning, but too often in all the wrong places. Dr. Ryan will review ancient wisdom on happiness and the “good life” and compare that with findings from modern research. He will review national trends in happiness and wellbeing, their relations with economic growth, day of the week patterns in happiness, whether people are happier at home or at work, and retrospective evaluations of life as they relate to happiness in older adults. He will discuss our cultural preoccupations with wealth and fame and how these values affect people’s lifestyles and wellness. Finally, he will shed light on how and why close relationships, giving to others, and community activities enhance both day-to-day happiness and a sense of meaning.



Asthma in an Aging Population

Sameer K. Mathur, MD, PhD

Asst. Professor; Allergy, Pulmonary & Critical Care; UW-Madison

Asthma is a chronic disease that is characterized by reversible airway obstruction. Asthma is often overlooked in older people as a cause for breathing difficulties such as shortness of breath, cough, and chest tightness. Therefore, it is often under diagnosed and undertreated. Dr. Mathur is interested in how asthma differs between younger and older patients. He will review our current state of knowledge regarding age effects on asthma and discuss the diagnostic challenges and the lack of evidence based guidance in the management of asthma in an aging population.



Reducing Barriers to Better Self Care: Changing Stereotypes

Susan M. Heidrich, PhD, RN

Helen Denne Schulte Professor, School of Nursing, UW-Madison

Common aging symptoms can have a negative impact on quality of life by keeping people from doing or enjoying their everyday activities. Two important factors that influence our self care of these symptoms are stereotypes about aging (both our own and others) and difficulties communicating with health care providers. Dr. Heidrich will discuss her federally-funded research on improving older women’s self care of symptoms by teaching more productive ways to think about and communicate self care needs.



Halting the Aging Process

Craig S. Atwood, PhD

Associate Professor of Medicine, UW-Madison; Research Director, WI Alzheimer’s Institute & WI Comprehensive Memory Program

Nobody escapes aging, a process that inevitably leads to age-related diseases and death. Dr. Atwood will discuss the basis of the “Reproductive Cell Cycle Theory of Aging” that explains why and how we age. The theory proposes that hormones that regulate reproduction act to control aging; promoting growth and development early in life in order to achieve reproduction, but later in life, become dysregulated and drive the aging process. He will also discuss strategies to increase longevity, including the benefits and risks of taking hormone replacement therapies to prevent age-related diseases.



Health & Resource Fair

Resources to Improve Quality of Life:

*Social & Educational Programs
Support for Independent Living
Volunteer Opportunities
Legal & Legislative Advocacy
Retirement Communities
Adult Day Health Care
Osteoporosis Screening
Blood Pressure Testing
Alzheimer’s Treatment
Swallowing Disorders
Hospice Care
Fitness & Nutrition*

Poster Session

Meet with UW-Madison faculty, students & advanced trainees presenting their recent aging research.

New Investigator Awards

Awarded to new UW-Madison researchers in recognition of outstanding achievement in biomedical, psychosocial, and clinical/applied aging research.

Details

Sponsored by the Institute on Aging. Continuing Education Credits will be offered. Pre-registration required. To receive the event brochure, contact: (608) 262-1818 or aging@ssc.wisc.edu

For more details or to register, see:
aging.wisc.edu

TUESDAY, SEPTEMBER 21, 2010
at Monona Terrace in Madison, WI

FREE and OPEN to the PUBLIC
Pre-Registration is Required

affiliate news

For more information on the work of IOA Affiliated Faculty and Researchers at the UW-Madison, see: www.aging.wisc.edu/research/affilindex.php

AGING NEWS SPRING/SUMMER 2010

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Subscriptions are free. Join our mailing list & view our back issues at: aging.wisc.edu/publications/newsletter.php

Submissions of related news can be sent to Theresa Berrie at: berrie@wisc.edu



Finding New Drugs to Treat Alzheimer's Disease

IOA Affiliate **Luigi Puglielli** (Assoc. Prof., Department of Medicine, Geriatrics & Gerontology, UW-Madison) recently reported results of a study providing evidence that IGF-1R (insulin-like growth factor 1 receptor) is a possible target for the development of new drugs to prevent and treat the mental decline associated with Alzheimer's disease. The article was published in the April issue of the journal, *Aging Cell*.

Previous studies have shown that IGF-1R regulates life span in non-human organisms. In addition, genetic variations that cause reduced IGF-1R signaling appear to be beneficial for old age survival in humans. Therefore, IGF-1R might provide a valid pharmacologic target to prevent some of the negative effects associated with aging. Cellular receptors such as IGF-1R take part in communications between the interior of a cell and its outside environment. When molecules attach to receptors, they signal the cell to change. In mammals, IGF-1R signaling is (at least in part) controlled by the tumor suppressor and longevity-assurance p53 gene. Tumor suppression is the ability to control the risk for cancer development whereas longevity-assurance means the ability to control the progression of aging. An increase in p44, a short and naturally occurring form of p53, in mice leads to increased IGF-1R signaling, which accelerates aging and shortens lifespan.

This study showed that IGF-1R also plays a role in the

cognitive decline associated with both normal aging and Alzheimer's disease. Results showed that mice engineered to have more of the p44 protein (p44^{+/+}) experienced cognitive decline and failed to perform well in several memory tests. This was triggered by the ability of p44 to over-activate IGF-1R signaling and alter the metabolism of the protein tau. Tau proteins maintain the shape of neurons (cells in the nervous system) and are essential for normal neuronal activity. When tau proteins are defective, they tend to accumulate as neurofibrillary tangles, a well-known characteristic of Alzheimer's disease patients.

To further understand the mechanisms that link IGF-1R signaling to Alzheimer's disease, the authors engineered p44^{+/+} mice to over-produce the amyloid protein that accumulates in the brain of Alzheimer's disease patients. These new mice (p44^{+/+};APP_{695/swe}) developed massive and widespread degeneration of memory-forming and retrieving areas of the brain and died prematurely. Again, the degeneration was caused by increased activity of IGF-1R. Finally, the researchers crossed the mice modeling Alzheimer's disease with mice exhibiting reduced IGF-1R signaling (APP_{695/swe}; Igf1r^{-/-}) and were able to prevent the deficits caused by the over accumulation of the amyloid protein.

Collectively, results reported by the UW group indicate that increased IGF-1R signaling accelerates Alzheimer's disease, whereas reduced IGF-1R signaling prevents it. They also indicate that IGF-1R is a valid target for the development of new drugs that could prevent or treat the loss of memory that accompanies aging and the degeneration of the nervous system that characterizes Alzheimer's disease.

Source:

*Pehar, M., O'Riordan, K. J., Burns-Cusato, M., Andrzejewski, M. E., Gil del Alcazar, C., Burger, C., Scrabble, H., & Puglielli, L. (2010). Altered longevity-assurance activity of p53:p44 in the mouse causes memory loss, neurodegeneration, and premature death. *Aging Cell*, 9(2), 174-190.*

Chronic Stress Among Mothers of Children with Autism

IOA Affiliates **Marsha Mailick Seltzer**

(Vaughan Bascom Prof. & Director; UW-Madison Waisman Center) and **Jan S. Greenberg** (Prof. & Director; School of Social Work, UW-Madison), recently co-authored two articles about the daily experiences of mothers caring for children with autism. Affiliate **Christopher L. Coe** (Prof., Psychology, UW-Madison) was also a co-author of one article. Raising a child with autism spectrum disorder (ASD) can involve daily caretaking for the child throughout his or her life, and can be a profoundly stressful experience, giving researchers an opportunity to study the mental and physical impact of stress over the life course.

Data for this research were taken from the study on Adolescents & Adults with Autism and involved 96 families that included an adolescent or an adult child with ASD who was still living at home with the mother. A comparison sample of mothers of children without disabilities was taken from the MIDUS study (see p. 6). Data were collected via telephone interviews about participant's daily experiences on eight consecutive evenings.



Mothers spent 2 extra hours a day providing childcare & 1 extra hour doing chores

Results suggested that one of the reasons mothers of children with ASD report poorer well-being is how they spent their time on a daily basis. Although having more leisure time is linked with better well-being, mothers of children with ASD had one less hour a day of leisure, as well as nearly two extra hours a day providing childcare and almost one more hour doing chores vs. the comparison group. Mothers of children with ASD were also three times more likely to experience a daily stressful event, such as an argument, and had more than twice as many days with multiple stressors.

In addition, the data revealed an alarmingly high occurrence of behavioral difficulties among children with ASD. Repetitive behaviors were the most frequently reported problem, followed by withdrawn, uncooperative, and socially offensive behaviors. Virtually all the mothers (94%) experienced as least one epi-



sode of problematic behavior during the eight day study and 35% experienced problems on all eight days.

To explore whether these behavior problems affected mother's daily stress levels and what impact they had on the mother's physical health, researchers conducted the first study of cortisol levels in mothers of children with ASD. Cortisol is a hormonal marker of stress. A healthy daily rhythm of cortisol includes a morning peak that helps people get energized to face the day, followed by a gradual decline in levels throughout the day that allows people to unwind and sleep.

Results showed that mothers whose child had a history of more severe, clinically-significant behavior problems showed a reduced cortisol response after days when their child had multiple behavior problems. In contrast, mothers whose children had a history of less severe behavior problems showed a larger rise in morning cortisol the day after their child manifested multiple behavior problems, which is a more typical morning cortisol rise following stress.

Overall, mothers of individuals with ASD had significantly lower levels of cortisol taken at all time points during the day, which is the biological signature associated with burnout and post traumatic stress disorder. The findings point to the need for more interventions that reduce behavior problems and more support services designed for mothers so that they can seek out leisure activities for themselves to combat their exposure to chronic stress.

Sources: *Smith, L. E., Hong, J., Seltzer, M. M., Greenberg, J., Almeida, D. M., & Bishop, S. (2010). Daily experiences among mothers of adolescents and adults with ASD. Journal of Autism & Developmental Disorders, 40(2), 167-178.*

Seltzer, M. M., Greenberg, J. S., Hong, J., Smith, L. E., Almeida, D. M., Coe, C., et al. (2010). Maternal cortisol levels and behavior problems in adolescents and adults with ASD. Journal of Autism and Developmental Disorders, 40(4), 457-469.



Life is one long process of getting tired.

— Samuel Butler



new findings from MIDUS

Funded by the National Institute on Aging
(P01 AG020166)

MIDUS
Midlife in the United States

The aim of MIDUS is to study successful aging as a long-term journey involving multiple factors (psychological, social, biological). The study began in 1995 with over 7000 participants, aged 25-74. Follow-up interviews, including new biological and neurological assessments, began in 2004. Over 300 publications have utilized MIDUS data. Most are archived at: midus.wisc.edu/findings

Personality & Social Position Linked to Death Rates

This study was the first to examine how different personality types interact with social status to affect death rates in the US. Personality and socioeconomic status (SES) are usually studied separately, because each represents a different cause of poor health: an individual's basic behaviors and psychological tendencies vs. their wealth and access to resources. In this MIDUS study, SES was assessed by a number of measures, including annual income, total assets, and level of education. Personality was assessed using the "big 5" traits: neuroticism (negative emotions), extraversion (positive emotions and outgoingness), openness (to novelty), conscientiousness (reliability & diligence), and agreeableness (compassion, cooperation, or trust). Results showed that people with lower SES had higher levels of neuroticism and agreeableness, and lower levels of extraversion, openness, and conscientiousness; and that personality accounted for about 20% of the mortality risk associated with being socially disadvantaged.

In addition to explaining some of the mortality risk differences between levels of social status, personality also explained risk between people of similar SES level. High amounts of neuroticism (feeling anxious) were associated with a 38% increase in risk of death. High levels of agreeableness also increased risk when joined with low conscientiousness. This big 5 combination is called the "well-intentioned" style and is characterized by seeking harmony with others at the expense of fulfilling one's own daily obligations and life goals. This personality type may yield to social pressures that are harmful to health. Another big 5 combination, the "effective altruist," also characterized by high agreeableness but joined instead with high conscientiousness, lowered risk of death. This personality type manages to balance personal accomplishments with good-

will toward others. In other words, the health benefit or risk of being agreeable depended on whether or not one was also conscientious.

In terms of prevention, results highlighted the need to better understand how personality and SES interrelate as predictors of longevity. Prevention and intervention efforts may be improved by simultaneously targeting both socioeconomic and personality factors associated with shorter life span.

Source: Chapman, B. P., Fiscella, K., Kawachi, I., & Duberstein, P. R. (2010). Personality, socioeconomic status, and all-cause mortality in the United States. *American Journal of Epidemiology*, 171(1), 83-92.



Poverty, Not Education, Explains Poor Health

In the United States, living below the poverty line or not finishing high school is associated with dying up to 12 years earlier and living up to 16 fewer years free from disease or disability. This study used MIDUS data to examine how poverty and lack of schooling can "get under the skin" and cause health problems. Researchers tested links between income, education level, and three proteins that affect health by increasing inflammation: interleukin-6 (IL-6), acute phase C-reactive protein (CRP), and fibrinogen. Increased inflammation is associated with a number of diseases, including heart disease, autoimmune disorders, high blood pressure, arthritis, asthma, diabetes, gastrointestinal disease, liver disease, and cancer.



Being neurotic or anxious is associated with a 38% increase in risk of death



Relatively accessible activities may give some degree of personal control over positive mental aging

Most prior studies have tested the link between inflammation and either income or education as an indicator of social status. Notably, results from this study, which tested both, showed that although lower education was associated with significantly higher levels of IL-6, CRP, and fibrinogen, these associations were eliminated after adjusting for income, except in the lowest earning bracket. This finding suggests that the relationship between education and inflammation is completely explained by income, which may mean that the reason higher education is linked to reduced inflammation and better health is that it reduces the risk of being poor. Thus, it is poverty, rather than lack of schooling, that is directly associated with inflammation and illness.

What then explains the link between poverty and inflammation? Lower social status is associated with poor health behaviors, including higher probabilities of smoking, drinking, and obesity, all of which are linked to greater inflammation. Also, poorer psychosocial resources among those living in poverty may worsen the impact of stress and put people at a greater risk for stress-related inflammation. The authors plan to study this association in the future. They conclude that it is increasingly important to view a person's social position as a critical factor influencing their health.

Source: Friedman, E. M., & Herd, P. (2010). Income, education, and inflammation: Differential associations in a national probability sample (the MIDUS study). *Psychosomatic Medicine*, 72, 290-300.

Countering the Effects of Lower Education on Mental Aging

Higher levels of education have been associated with better mental functioning and lower risk of dementia later in life. This may be because those with more education have advantages that allow them to engage more frequently in cognitively challenging activities. This MIDUS study tested whether mentally challenging activities can also improve the mental functioning of those without a college degree. Researchers looked at mental activities including reading books, magazines, or newspapers; doing word games such as crosswords, puzzles, or Scrabble; attending educational lectures or courses; and writing letters, journal entries, or stories.

As expected, results showed that those with more years of schooling were more likely to participate in these mentally stimulating activities, which were associated with better episodic memory (the ability to remember details about our past). However, results also showed that among those without a college degree, engaging in these mentally challenging activities was more beneficial for episodic memory than similar activities among the college educated. Impressively, those without a college degree who engaged frequently in mentally stimulating activities had memory performance more comparable with those who held a degree, but did not participate in these activities.

Thus, engagement in relatively accessible activities, such as reading, writing, and word games, once or more a week, may give us some degree of personal control over positive mental aging in spite of the social inequalities that can lead to lower educational attainment.

Source:

Lachman, M. E., Agrigoroaei, S., Murphy, C., & Tun, P. A. (2010). Frequent cognitive activity compensates for education differences in episodic memory. *American Journal of Geriatric Psychiatry*, 18(1), 4-10.



Age is opportunity no less, than youth itself, though in another dress, and as the evening twilight fades away, the sky is filled with stars, invisible by day.

—Henry Wadsworth Longfellow



MIDUS reports on daily stress

IOA recently published a brochure about MIDUS research (see p. 6) on day to day stresses (such as arguments or work overloads) and how they affect our health & well-being. The brochure is available on the IOA home page. Highlights include:

Reactions to Stress Vary by Age

► People in midlife and older were able to remain more calm when they encountered stressful situations, as compared to younger people who were much more upset by them.

► However, older adults still experienced high levels of distress when problems happened to their family or friends, such as a spouse becoming ill.



Protect Yourself from Stress

► By Staying Healthy

Older adults, who are usually quick to recover, reacted just as badly to stressful events as younger people, if they had four or more chronic illnesses, such as diabetes or heart disease.

► By Feeling in Control

Older adults who felt more in control of their lives were less distressed and had fewer physical reactions, such as headaches, to arguments or problems at work.



As we get older, most of us tend to experience less daily stress. Most older adults have "figured out" how to avoid stressful situations or have developed ways of coping with them.

more results available at:
aging.wisc.edu

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*You can't turn back the clock.
But you can wind it up again.*

—Bonnie Prudden