

2015 ANNUAL REVIEW CHARTING OUR PROGRESS

Center for Mr Vital Longevity

THE SCIENCE OF THE AGING MIND

MESSAGE FROM THE CENTER DIRECTOR

I'm delighted to present to you the Center for Vital Longevity's 2015 Annual Report, which marks the end of our fifth year of operation.

We have had a good year. Center researchers have continued to make notable progress on understanding the neural underpinnings of healthy, vital cognitive aging. We published important work that is beginning to provide a road map to healthy cognitive aging. A corpus of findings are accruing across our labs and studies that are uncovering the neural signature of healthy aging brains; and showing how major changes in brain function begin in middle age, emphasizing the importance of studying the brain across the entire lifespan. Work on middle age is sparse and yet this is the time when interventions may be the most important in preventing diseases like Alzheimer's. Center researchers also published innovative new work showing how older adults' brains show evidence of plasticity — that is, the ability to change in response to experience. Researchers across multiple labs also continued to focus on understanding the harbingers of Alzheimer's Disease by examining how amyloid and iron deposits, genetic markers, and hypertension affect the brain and can be related to aberrant brain activity.

We are thrilled to report that the Dallas community has played a significant role in this research. Significant awards were made to Center researchers to support our science by the Aging Mind Foundation, AWARE, and BvB Dallas (*see page 5*). Individual philanthropists also contributed to

With your support, the Center's dedicated and accomplished scientists are learning how to maintain and extend the vitality of the aging mind. Philanthropy plays a critical role in the success of the Center and its research.

For giving opportunities and to participate in Center studies, visit CVLINF0.0RG



our research. We are so grateful for this support which makes a tremendous difference in moving our research forward. It is motivating and energizing to have our work recognized by such a vibrant and appreciative philanthropic community.

Despite our good progress and excitement about new discoveries, this has also been a year tinged with great sadness. Dr. Bert Moore, long-time Dean of UT Dallas' School of Behavioral and Brain Sciences, who was an indefatigable supporter and enthusiast for the Center, and a personal friend of many of us, passed away in the fall. He was a beloved colleague and played a seminal role in recruiting every faculty member at the Center. His integrity, kindness, wit, and wisdom are sadly missed. Our past and future research achievements owe much to his many efforts on our behalf.

Nichael Mag

Michael D. Rugg, Ph.D. University of Texas at Dallas Distinguished Chair in Behavioral and Brain Sciences Director, Center for Vital Longevity

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RESEARCH PROGRESS





The Center's ongoing collaboration with UT Southwestern Medical Center allows investigators to conduct functional and structural neuroimaging studies at UTSW's Advanced Imaging Research Center. CVL also conducts a battery of cognitive assessments and memory tests on participants who volunteer to be part of the Center's key research studies.

Center for Vital Longevity researchers are continuing to investigate ways to maintain cognitive vitality for life, while making advances in the field of the cognitive neuroscience of aging. Over the past year, as in years past, Center researchers have sought to identify and understand the changes that occur in memory, cognition and brain function across the lifespan, through a number of techniques including brain imaging and cognitive testing. Uncovering new ways to slow or even to reverse age-related cognitive decline remains a key goal. Progress in these areas can be seen in the quality and number of peer-reviewed papers that have been accepted by high-impact journals that publish original research. Center faculty have this year authored 22 academic papers based on research into such areas as attention and working memory, brain activity associated with engaging in challenging new activities, brain activity linked to acquiring and retrieving memories, and genetic factors that can affect memory.

Selected Scientific Publications

- de Chastelaine, M., Rugg, M.D. (2015). The effects of study task on prestimulus subsequent memory effects in the hippocampus. *Hippocampus*.
- King, D.R., de Chastelaine, M., Elward, R.L., Wang, T.H., Rugg, M.D. (2015). Recollection-related increases in functional connectivity predict individual differences in memory accuracy. *Journal of Neuroscience*, 35, 1763-72. (See "Research Spotlight")
- Wang, T.H., Johnson, J.D., de Chastelaine, M.; Donley, B.E.; Rugg, M.D. (2015). The effects of age on the neural correlates of recollection success, recollection-related cortical reinstatement, and post-retrieval monitoring, *Cerebral Cortex*. 1-17.
- McDonough, I.M., Haber, S., Bischof, G.N., Park, D.C. (2015). The synapse project: Engagement in mentally challenging activities enhances neural efficiency. *Restorative Neurology and Neuroscience*, 33, 865-82. (See "Research Spotlight")
- Park, D. C. & Festini, S. (In press). The middle-aged brain: A cognitive neuroscience perspective. To appear in Cabeza, R., Nyberg, L., and Park, D. C. The Cognitive Neuroscience of Aging: Linking Cognitive and Cerebral Aging. New York: Oxford University Press.
- Kennedy, K. M., Reese, E., Horn, M., Sizemore, A., Unni, A., Meerbrey, M., Kalich, A., Rodrigue, K. M. (2015). BDNF val66met Polymorphism Affects Aging of Multiple Types of Memory. Special Issue on Memory and Aging in Brain Research, 1612, 104-117.

- Kennedy, K. M., Rodrigue, K. M., Bischof, G. N., Hebrank, A. C., Reuter-Lorenz, P. A., Park, D. C. (2015). Lifespan Age Trajectory Differences in Functional Brain Activation Under Conditions of Low and High Processing Demands. *NeuroImage*, 104, 21-34. (See "Research Spotlight")
- Kennedy, K. M., & Raz, N. (2015). Normal Aging of the Brain. In: A. W. Toga (Ed), Brain Mapping: An Encyclopedic Reference. Elsevier, Vol. 3, Ch. 68, 603-617.
- Rieck, J. R., Rodrigue, K. M., Kennedy, K. M., Hebrank, A. C., Devous, M. D., Sr., Park, D. C. (2015). The effect of beta-amyloid on face processing in young and old adults: A multivariate analysis of the BOLD signal. *Human Brain Mapping*, 36, 2514-2526. (See "Research Spotlight")
- Jansen W.J., Ossenkoppele R., Knol D.L., Tijms B.M., Scheltens P., et al., Rodrigue K.M., et al., (2015). Prevalence of cerebral amyloid pathology in persons without dementia: a meta-analysis. JAMA, 313, 1924-1938.
- Rodrigue, K. M., Bischof, G. (in press). The influence of hypertension on healthy and pathological aging: A review of cognitive and neuroimaging studies. Cognitive Neuroscience of Aging, 2nd edition, Oxford University Press.
- Wig, G.S. (2015). Using patterns of resting-state correlations to parcellate the brain into areas. *Essentials of Cognitive Neuroscience*. (B. Postle, Editor) Hoboken: Wiley-Blackwell. Web Video.

Over the past year, Center researchers have sought to identify and understand the changes that occur in memory, cognition and brain function across the lifespan.

Research Spotlights

Core Recollection Network Connectivity. Findings published in the *Journal of Neuroscience* have identified a new and potentially important brain signature of successful recollection. Using data from three independent experiments, first-authored by Dr. Danielle King, the research identifies a set of regions in the brain that consistently show increases in their connectivity with other regions as an event is being remembered.

The findings out of the Functional Neuroimaging of Memory Lab, led by Center Director Dr. Michael Rugg, emerged from studies in which participants remembered events while researchers measured changes in connectivity between the core recollection network comprising the left angular gyrus, the medial prefrontal cortex, the posterior cingulate cortex, the hippocampus and the middle temporal gyrus — and the rest of the brain.

The researchers found that a consistent set of brain regions, which were widespread and extended well outside the core network, showed recollection-related increases in connectivity with regions in the network. In addition, individuals who showed greater memory-related increases in connectivity performed better on memory tasks.

Verbal and Reasoning Ability. Research from the Neuroimaging of Aging and Cognition Lab led by Dr. Kristen Kennedy shed new light on certain cognitive processes that tend to be preserved with age.

Results from the study published in *NeuroImage* confirm behavioral findings that verbal ability — the accurate memory of words and vocabulary — remains intact during a lifetime while reasoning ability decreases in older adults.

The decreases emerged primarily in the transition from middle age to older adulthood, after age 59, Dr. Kennedy found. Further decreases in neural activity in response to reasoning tasks were seen into very old age (80 to 90 years old) particularly in regions of the mid-brain where the dopamine system originates. Dopamine is released by neurons and is a chemical that acts as a neurotransmitter to send signals to other nerve cells.

Cognitive Engagement. Further study uncovered additional evidence that taking up a new mental challenge such as digital photography or quilting may help maintain cognitive vitality. Writing in *Restorative Neurology and Neuroscience*, Director of Research Dr. Denise Park and her colleagues in the Aging Mind Lab compared changes in brain activity in older adults and found that individuals who participated in such "high-challenge" activities showed enhanced brain activity. These mentally demanding activities may be neuroprotective, the researchers found.

Participants in the study were randomly assigned to highchallenge, low-challenge, or placebo groups. The high-challenge group demonstrated better memory performance 14 weeks after the intervention, and a year later. Accompanying the improvement was better ability to modulate brain activity to challenging judgments of word meaning in the medial frontal, lateral temporal, and parietal cortex regions of the brain. \bigcirc

Facial Recognition and Brain Activity. Healthy adults with high levels of amyloid in their brains show less activity in a brain region specialized for recognizing faces called the left fusiform gyrus. The results suggest that decreased activity in this region could be another early predictor for Alzheimer's Disease.

Alzheimer's patients typically have difficulty learning and remembering faces, and the new finding, based on data from the Dallas Lifespan Brain Study, suggests that amyloid degrades the ability to even perceive a face, let alone remember it.

The study, first authored by Dr. Jenny Rieck, appeared in *Human Brain Mapping* and relied on techniques that allow researchers to measure beta-amyloid in the living human brain, through the use of PET scanning and the imaging agent Florbetapir. Intervening in the progression of Alzheimer's Disease well before symptoms appear is critical in stopping the disease, researchers believe. Looking at the fusiform gyrus could provide additional early clues about the onset of Alzheimer's.

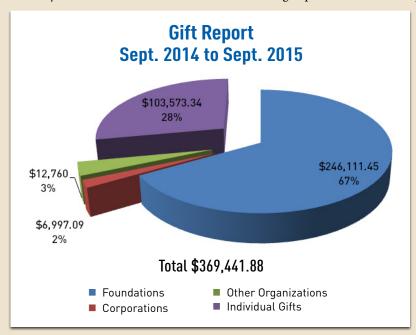








The Kennedy Neuroimaging of Aging and Cognition Lab was selected as a beneficiary of an annual young professionals powder-puff football fundraiser for Alzheimer's research. Now known as BvB Dallas (formerly Blondes vs. Brunettes), the popular Alzheimer's awareness group hosts its annual football match at the Cotton Bowl, where Dr. Kristen Kennedy and others from CVL took to the field during a special halftime check presentation. With BvB's grant funding, totaling



\$200,000, Dr. Kennedy's lab is genotyping participants in a study that involves DNA samples from nearly 200 people and counting. Dr. Kennedy has found that a genetic variation present in a specific brain protein is associated with poorer memory performance in older people across four measures of memory.

AWARE, a local organization dedicated to fighting Alzheimer's, also provided grant funding to Dr. Kennedy to support her work on genetic factors that influence the aging brain, with the aim of understanding how we can age with minimal cognitive decline. AWARE also pledged financial support to help create an online data repository for the Dallas Lifespan Brain Study (DLBS). The DLBS, directed by Dr. Denise Park, is focused on understanding how changes in the structure and function of the brain determine whether individuals maintain cognitive health or

transition to cognitive decline. The DLBS data are unique due to the inclusion of many different types of brain measures and the inclusion of participants that span the entire adult lifespan.

Uploading the data leverages the National Institute on Aging's investment in the project by allowing researchers worldwide to test their own hypotheses about the aging mind without incurring costs of data collection. 🔅



Dr. Kristen Kennedy, along with members of the Center and both BvB teams, gather to celebrate the funds raised for Alzheimer's research at halftime.

COMMUNICATIONS

CVL researchers regularly interact with top researchers at major University centers who examine the aging mind from many different perspectives. To facilitate these interactions, the Center hosted a number of talks and participated in multiple scientific conferences. CVL faculty were also frequently invited to speak on topics concerning the brain, memory and cognitive health, both locally and internationally.

Select Scientific Conferences & Meetings

Society for Neuroscience (SfN) Annual Meeting

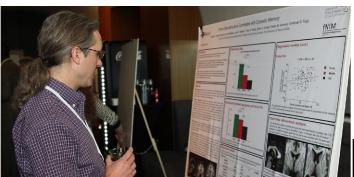
With more than 30,000 people taking part, the annual SfN meeting in Chicago was an opportunity for Dr. Chandramallika Basak to share findings on age-related differences in attention, based on functional magnetic resonance imaging data, while members of the Functional Neuroimaging of Memory Lab presented a poster on their work on aging and memory encoding. Among many other posters and talks from CVL, one by Dr. Kristen Kennedy explained what factors may lead to changes in white matter in healthy middle age and older adults, and what those changes hold for cognitive function over time. Dr. Gagan Wig and his lab colleagues presented an abstract on motion-related noise in structural brain images and estimating head motion during scanning, while graduate student Micaela Chan in Dr. Wig's lab presented findings on the organization of brain networks across the healthy adult lifespan.

Cognitive Neuroscience Society Annual Meeting

At the Cognitive Neuroscience Society meeting, held in San Francisco, Dr. Michael Rugg co-chaired a symposium session on insights in lifespan cognitive neuroscience and the changing brain. Dr. Patti Reuter-Lorenz of the Univ. of Michigan served as co-chair. Other speakers included Dr. Lorraine K. Tyler of the University of Cambridge and Dr. Lindenberger. The group discussed research on executive function, language, memory, and brain plasticity as we age. Dr. Rugg was also invited to speak at a journal publishing workshop that offered tips to reviewers on best practices in peer-reviewing papers. Dr. Rugg was then part of a panel of peer-reviewers who further commented on the process, including Dr. Cindy Lustig from the Univ. of Michigan, as well as Dr. Reuter-Lorenz.

The Dallas Aging & Cognition Conference (DACC)

In late January, the Center for Vital Longevity hosted the 4th biennial conference, bringing brain and behavioral scientists from across the U.S. and Europe to Dallas for two days focused on "Imaging the Aging Brain: Studies of Neuroplasticity and the Challenge of Longitudinal Designs." Among the many researchers who visited was Dr. Ulman Lindenberger from the Center for Lifespan Psychology at the Max Planck Institute for Human Development in Berlin. Dr. Lindenberger gave a special talk to Center supporters on the opening night about worldwide differences in life expectancy, and during the conference he spoke about the conceptual and methodological challenges of studying cognitive aging from a lifespan perspective.



Memory Disorders Research Society Annual Meeting

Dr. Michael Rugg and Dr. Gagan Wig organized the "Understanding Memory Function from Patterns of Brain Connectivity" symposium at the Memory Disorders Research Society Annual Meeting in Cambridge, England, in September. Dr. Rugg presented information and insights on episodic memory encoding and retrieval. Dr. Wig spoke about brain networks and how they fare with age. Dr. Wig's research, highlighted in the *Proceedings of the National Academy of Science* last year, has looked into segregation of brain systems across the healthy adult lifespan, finding that less segregation among sub-networks predicts poor long-term memory, regardless of age.

International Society for Behavioural Neuroscience (ISBN)

Dr. Kristen Kennedy and Dr. Karen Rodrigue organized and held the ISBN annual meeting in Mauna Lani, Hawaii, in mid-June. The ISBN is a group of neuroscientists whose research focuses on understanding the relationship between brain and behavior. ISBN members attended a series of symposia organized by Drs. Kennedy and Rodrigue, including one on the biological mechanisms that trigger the inflammation thought to play a critical role in Alzheimer's Disease.

Human Amyloid Imaging Annual Meeting

Dr. Karen Rodrigue presented findings on amyloid deposition in middleage and the predictive value of carrying the APOE gene, a version of which (e4) is thought to increase an individual's risk for developing late-onset Alzheimer's Disease. Also at this conference, Dr. Zhuang Song, a CVL postdoctoral researcher, shared imaging evidence that changes in the medial temporal lobe, including signs of degraded connectivity, could be an early predictor of preclinical Alzheimer's Disease. Drs. Denise Park, Kristen Kennedy and others presented findings on the long-term effects of amyloid accumulation on cognition in a healthy adult sample aged 30 to 89, based on data from the Dallas Lifespan Brain Study.

Other National and International Presentations

- Department of Psychology colloquium series at Pennsylvania State University Dr. Kristen Kennedy "Aging, Cognition and the Brain: Structural and Functional Associations." (Feb. 2015)
- University of South Carolina, Columbia, Dr. Denise Park on "Maintaining Cognitive Vitality with Age: The Synapse Project" and "Looking into the Aging Mind: What do Depositions of Plaques and Tangles Mean in Healthy Adults Studied in Vivo?" (Feb. 2015)
- International Convention of Psychological Science, in Amsterdam, The Netherlands, in March — Dr. Chandramallika Basak on "Playing for keeps: Real-time strategy game training, aging and cognition." (March 2015)
- Centre for Cognitive Ageing and Cognitive Epidemiology, Edinburgh, Scotland Dr. Michael Rugg on the "Effects of Age and Performance on Neural Correlates of Episodic Encoding and Retrieval." (March 2015)
- The Taub Institute for Research on Alzheimer's Disease and Aging, Columbia University Medical Center in the City of New York — Dr. Denise Park on "Neural Scaffolding, Amyloid Imaging: Predicting Future Cognition." (May 2015)
- Max Plank Institute for Human Development, Berlin, Germany Dr. Michael Rugg on "Memory, Aging and the Brain: an Individual Differences Approach." (May 2015)
- Healthy Aging Summit in Washington, D.C. Dr. Denise Park on "Maintaining Cognitive Health: Research, Policy and Practice." (July 2015)
- American Psychological Association, Toronto, Canada Dr. Chandramallika Basak on "Cognitive and Neural Plasticity from Video Game Training." (August 2015)

Interactions between faculty and members of the community over the past year have proven beneficial in raising the stature of the Center locally, and in helping the Center share its scientific advancements with a lay audience. To this end, the Center hosted a number of talks and functions in the community, some designed for supporters of CVL and others aimed at the general public.

Selected Community & CVL Supporter Talks

Center's 5th Anniversary Celebration

Marking five years since its founding, the Center hosted a celebration and anniversary dinner at the Highland Hotel in September. The celebration highlighted CVL's national stature as a leader in the study of the aging mind, having published more than 125 scientific articles in the past five years, with the faculty together having been awarded a total of 15 highly competitive grant awards from the National Institutes of Health. CVL used the occasion to present its inaugural *Award for Distinguished Research in the Science of the Aging Mind* to Dr. Reisa Sperling, a world-renowned researcher in Alzheimer's Disease from Harvard University. The award recognized Dr. Sperling for her work in leading a broadbased research effort toward earlier diagnosis and treatment of Alzheimer's.

The Jean & Bill Booziotis Annual Public Lecture Series

The second Jean & Bill Booziotis Distinguished Lecture was held at the end of April at the Communities Foundation of Texas. Dr. Claudia Kawas of the University of California, Irvine, shared her research on factors that predict who will likely live past 90, and join what she calls the "Oldest Old." She also discussed how the brains of some people in their 90s show evidence of memory loss and dementia, while others don't, and what lifestyle factors may play a role in staving off cognitive decline. About half of people with dementia over age 90 do not have sufficient neuropathology in their brain to explain their cognitive loss, she said. The annual lecture is open to the public and facilitates the spread of knowledge and research into cognitive aging throughout North Texas. •

Director's Research Circle

In November, CVL hosted a lecture at Heritage Auctions in the Design District, where Dr. Kristen Kennedy discussed genes and their interaction with the environment, and how this interplay can affect the brain and cognition. The talk was part of the CVL's Director's Research Circle — a group of Center supporters who are interested in periodically hearing from CVL's faculty on topics concerning the aging brain. (Information on how to join the Circle can be found at cvlinfo.org.)



About 200 people attended the Jean & Bill Booziotis Distinguished Public Lecture in April at the Communities Foundation of Texas.

Additional Community Talks

In January, Dr. Gagan Wig spoke at the Highland Park Presbyterian Church in Dallas about networks within the brain, how they are forged, and how they communicate with each other.

Dr. Denise Park spoke to the Mary Kay Craig Class of the Dallas Women's Club, on "Building a Healthy Mind for Life." The talk, in February, offered attendees findings on the potential link between increased cognitive engagement and better memory. Dr. Park also spoke on the neuro-protective features of cognitive engagement at separate events for the Dallas Women's Club and the Bent Tree Garden Club during the year, and at a "Leaving a Legacy" meeting in McKinney, Texas, with wealth advisors at UBS Financial Services in June.

At Belmont Village Senior Living Turtle Creek, Dr. Chandramallika Basak gave a talk on "Improving Cognition and the Brain in Late Adulthood," in December. Belmont Village Senior Living is a leading developer and operator of assisted living communities across seven states.

On the UT Dallas campus, as part of the new "Brain Matters" science lecture series in the fall hosted by the School of Behavioral and Brain Sciences, nearly 100 people from the community gathered to learn about the structure and function of the aging brain at an evening that featured Center faculty, including Drs. Karen Rodrigue, Kristen Kennedy and Wig. 🜣

Fellowship Spotlight. In May, the Dallas-based Aging Mind Foundation, which funds and supports "critical issues unique to the aging mind," announced that more than \$300,000 was raised at its first-ever fundraiser at the Joule Hotel this year.

The Foundation also announced that nearly \$210,000 from the evening fundraiser would fund the Aging Mind Foundation Postdoctoral Fellowship at the Center for Vital Longevity — a fellowship awarded later in the year to CVL's Dr. Sara Festini, a CVL postdoctoral researcher, by a committee formed by the Dean of the School of Behavioral and Brain Sciences. Dr. Festini is currently studying the impact of busyness and distraction on memory and the short- and long-term consequences of "directed forgetting" in working memory.



ABOUT THE CENTER

Founded in 2010, researchers at the Center are addressing numerous issues relevant to cognitive aging. These include the early detection of age-related neurodegenerative disorders such as Alzheimer's Disease, how to slow age-related cognitive decline, and basic research on the cognitive neuroscience of memory and other cognitive functions.

The Center's Laboratories

Functional Neuroimaging Memory Laboratory

Led by Center Director Dr. Michael Rugg, this laboratory focuses on understanding the neural circuits that support the encoding and retrieval of memories, and how these circuits vary in their function across the adult lifespan. Dr. Rugg and his laboratory employ the methods of functional and structural MRI, electroencephalography and transcranial magnetic stimulation in order to address several research questions, including whether brain regions involved in successful retrieval differ in the timecourses of retrieval-related neural activity they manifest, and how neural activity linked to successful memory encoding varies with age.

Aging Mind Laboratory

Led by Dr. Denise Park, the laboratory studies the same participants over many years as part its Dallas Lifespan Brain Study (DLBS), a large-scale longitudinal research project designed to characterize neural and cognitive aging across the entire adult lifespan. A second major study, The Synapse Project, has found that engaging in mentally demanding leisure activities like quilting, photography, or learning iPad apps, can help support memory function in older adults. Both the DLBS and The Synapse Project are funded by the National Institute on Aging and involve collaboration with other CVL faculty.

Cognitive Neuroimaging Laboratory

Led by Dr. Gagan Wig, the Cognitive Neuroimaging Laboratory uses a combination of structural and functional brain imaging measurements to understand the organization of large-scale human brain connectivity networks, and determine how these networks change over the adult lifespan. The laboratory's research program utilizes complex scientific and computational analysis to further understand the brain basis of healthy and pathological aging. A number of inter-institutional research collaborations allow the researchers to focus on questions related to both aging and memory disorders in large samples of participants.

Lifespan Neuroscience and Cognition Laboratory

Led by Dr. Chandramallika Basak, the Lifespan Neuroscience and Cognition Laboratory focuses on the interplay between attention and memory, and the effects of cognitive training, including video games and memory exercises, in young and older adults. In particular, she and her team are testing a new model of working memory that emphasizes the role of attentional control and long-term memory. The lab is also determining specific conditions under which the processing capacity can be expanded, while exploring the biomarkers and neural correlates of complex skill learning and working memory. \diamondsuit

Neuroimaging of Aging and Cognition Laboratory

Led by Dr. Kristen Kennedy, the laboratory is investigating genetic factors that influence the structure and function of the healthy aging brain, with the aim of determining who ages with minimal cognitive decline versus those who have a more pathological outcome. The laboratory uses neuroimaging techniques such as functional and structural MRI to investigate properties of grey matter (e.g., cortical thickness measures) and white matter structure (e.g., white matter connectivity), and brain function. Neuropsychological and cognitive performance tests are also employed.

Cognitive Neuroscience of Aging Laboratory

Led by Dr. Karen Rodrigue, the Cognitive Neuroscience of Aging Laboratory studies the role of vascular risk in neural and cognitive aging. Her work focuses on health factors such as hypertension and how high blood pressure can influence aging and the deposition of beta amyloid in the brain, a protein associated with the development of Alzheimer's Disease. Using a variety of methods to assess brain and cognitive aging, including structural and functional MRI and PET imaging, the Cognitive Neuroscience of Aging Lab is also investigating links to brain iron accumulation and Alzheimer's.



Award Spotlight. In August, the American Psychological Association (APA) presented Dr. Denise Park, CVL's Director of Research, with the Distinguished Mentor Award in the Psychology of Aging. The award is presented annually to an "individual who has consistently provided support, guidance, and strong direction to undergraduate and graduate students in aging and adult development."

Dr. Park was given the award at the Adult Development and Aging Division 20 business meeting during the APA 2015 convention in Toronto. The award committee cited her as an individual who has been most actively committed to mentoring and who best exemplifies the qualities identified with strong, effective mentoring.

Two researchers attending the presentation of the award to Dr. Park were former students, Dr. Angela Gutchess, who is an associate professor at Brandeis University, and Dr. Eric Leshikar, who is a visiting assistant professor at the University of Illinois at Chicago.