

THE NEWSLETTER OF THE CENTER FOR VITAL LONGEVITY

DIRECTOR'S MESSAGE

Life Into Years

Welcome to our Spring Newsletter. As you will see, we have had a busy and successful start to the year, which saw a highly successful Dallas Aging and Cognition Conference, and,



Dr. Michael Rugg

more recently, the annual Jean and Bill Booziotos public lecture. The past couple of months also saw the award of new research grants to two of the Center's researchers, from the National Institutes of Health (NIH) and the Dallas-based foundation *BvB*. The welcome recent news of an increase in the NIH budget for the present fiscal year increases our optimism that more grants will be forthcoming over the next few months.

Along with our sense of excitement over the start of the year and prospects for the future, there is sadness at the recent passing of Helen Small. Helen was a truly remarkable person. Leaving college in early life, she returned to her studies in 2004. In 2007, aged 90, she graduated from UT Dallas with a master's degree. Helen took a keen interest in the CVL, serving on our Advisory Council and as a research assistant in the Center. She was the embodiment of vital longevity, and a forceful reminder that cognitive frailty in later life is not inevitable. We aim to contribute to a future in which increasing numbers of people age as successfully as Helen. To read more about her colorful and long life, please visit us at cvlinfo.org.

> Michael Rugg Dr. Michael Rugg

Johns Hopkins' Dr. Marilyn Albert Speaks at 2017 Jean & Bill Booziotis Public Lecture

There is no effective way to halt or reverse Alzheimer's at the moment, said Dr. Marilyn Albert of Johns Hopkins University — and by the time symptoms of the disease appear, it's too late.

That sobering message by Dr. Albert, who directs of the Division of Cognitive Neuroscience at Hopkins, was delivered to attendees of this year's Jean & Bill Booziotis Distinguished Lecture, the fourth since its start in 2014.



Dr. Marilyn Albert speaks to attendees of the 2017 public lecture.

Determining who is at risk for developing Alzheimer's Disease well before symptoms appear is a major challenge faced by researchers and clinicians seeking to treat this form of dementia, she said. "We don't currently have effective drugs that can either stop or slow down the disease's progression," she noted during at the public gathering at the Communities Foundation of Texas on April 27.

Dr. Albert emphasized what many in the field now strongly believe: for a

treatment or prevention to be effective, early diagnosis is key. A challenge has been in accurately diagnosing the disease, and distinguishing it from other age-related brain diseases and conditions that can affect memory and behavior.

Thankfully, diagnostic tools for detecting Alzheimer's have advanced a long way, she said, from the days of Dr. Alois Alzheimer, the German psychiatrist credited with identifying the first case in the early 20th century. With advances in imaging, such as PET scanning to identify potentially harmful plaque deposits, and improvements in cognitive and genetic testing, characteristic signs of disease can potentially be detected earlier.

Finding even more accurate or sensitive biological markers that determine risk perhaps decades before onset could have profound impacts on public health down the road, she said. In the meantime, large community studies have suggested that adopting lifestyle

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CVL Advisory Councilmember Profile

Mr. Scott Murray, Chairman/CEO Murray Media

The voice is hauntingly familiar. Especially if you're a sports fan who lived in Washington, D.C., in 1980 or in Dallas-Fort Worth since then.

Scott Murray, the former NBC sports anchor turned media mogul can be seen (and certainly heard) nowadays at any number of charity benefits that dot North Texas' packed social circuit. The Chairman/CEO of Murray Media, and an active CVL advisory councilmember, Murray regularly lends his expertise — a resonant voice, a sharp wit and a sly sense of humor – to leading and emceeing philanthropy events that range from raising funds to defeat cancer to healing wounded war veterans.

Above all, however, Murray, the father of two and the lifelong husband of his college sweetheart, a former model whom he met at a disco in the 1970s (she was dancing, he was spinning records as a disc jockey), cares most about contributing to causes that benefit kids.

"I was actually studying pre-med to become a pediatrician," Murray said recently of his early days at the University of Rochester, where he also moonlighted as a radio host at a local station on the graveyard shift. The son of a biochemical engineer, Murray wanted to help sick people, mostly children, but he also



Dallas Cowboys quarterbacks Roger Staubach and Troy Aikman seated with Murray, center.

needed to make ends meet in college.

A big break came one afternoon when a TV general manager down the street from the radio station was impressed after Murray did some spoton impersonations of Mickey Mouse and James Stewart (the semblance to Stewart's voice is incredible, really) on his radio show. The manager pulled a fake moustache from his desk and requested Scott try it on, saying he would make a great news anchor, if he looked a little older. "He simply needed to give me some credibility so he didn't look like his baby-faced paper boy," Murray jokes. Scott was amused but said he wasn't interested in news, but instead sports.

The moment he started doing television, it clicked. And, he realized he could affect more people with his commanding voice and star persona through a camera lens than as a doctor. His children's childhood pediatrician, also a dear friend, agreed. "You'll touch more lives through TV, than I ever do in the exam room," Murray recalls him saying.

After toiling for a short period in the upstate New York television market, Murray was invited to do sports in a top-10 media market, namely Washington, D.C., where he filed a number of iconic stories not only about the Cowboys-Redskins NFL rivalry, but also the longstanding Army-Navy football rivalry. He built up the annual battle by peppering his pieces with interviews of three and four-star generals and admirals at the Pentagon. In news, as people know in philanthropy circles, Murray always goes above-and-beyond. His signature sign-off for years has been: "Live your life as a go-getter, share your life as a go-giver."

When NBC/DFW was in the market for a new Sports Director, Scott came calling. He brought with him his Sunday night "Scott Murray's Sports Extra," the first expanded Sunday night sports program of its kind west



Scott Murray with legendary CBS News anchor Walter Cronkite.

of the Mississippi. Over the next two decades plus, Murray in his capacity as a sports anchor and broadcast journalist, interviewed U.S. presidents and World Series Champions, covered U.S. Opens and Final Fours, traveled the world covering World Cups and Olympic Games, not to mention attended 40 Super Bowls.

After Murray retired from TV news, he wrote two books. One of them, "Whatever it Takes" is his incisive look at a handful of athletes (most of whom became friends) who, in his paternal mind, exhibit interpersonal and leadership qualities worth instilling in sons and daughters.

In all, Murray spent more than 30 years with NBC, winning multiple Emmy Awards and being named "Sportscaster of the Year" 17 times by The Associated Press, United Press International and other media outlets. Although Murray retired from nightly television news, he returned for seven years to NBC 5 to host the weekly TV public affairs/philanthropic program, "Talk Street." He also remains host of

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Dr. Micaela Chan's Ph.D. Dissertation Selected as One of UT Dallas' Best

Having been with the Center for Vital Longevity since it was founded, Micaela Chan has steadily climbed the academic ladder, earning her Ph.D. just last year and most recently being celebrated by UT Dallas for the very dissertation that helped her "earn the Dr. title."

This spring UT Dallas' Office of Graduate Studies introduced an awards program honoring the top doctoral dissertation in each school. Winners of the inaugural 2017 "Best Dissertation Award" were announced at an April reception celebrating excellence in graduate education. Dr. Chan won for the School of Behavior and Brain Sciences

Early during her time at CVL, beginning in 2010, Chan — Dr. Chan, that is — gravitated toward studies associated with the Synapse Project, which explored how both brain activity and cognitive performance are sculpted by novel activities such as learning to use a tablet computer, quilting and digital photography. Surprisingly, Micaela almost didn't go to college.

"My favorite class in high school was physical education," she said one afternoon, after successfully defending the doctoral dissertation that earned her the UTD award. "I wasn't a bookworm

and I wasn't known by my teachers as a particularly hard worker," she said. "But I did end up applying to one college."

She was accepted to the University of Illinois at Urbana-Champaign, where she morphed into a self-described "research workaholic" while studying psychology and finishing her bachelor's in just over three years.

During her graduate studies at CVL, her first paper as lead author appeared in The Gerontologist where she reported that adults who engaged in learning multiple new applications on a tablet computer improved their memory and speed in processing information compared to adults who socialized or worked on different tasks at home for 15 hours on an iPad each week for 10 weeks. Her next first-authored paper appeared in the Proceedings of the National Academy of Sciences (PNAS), when Micaela's work slowly began to overlap with some areas of inquiry being scrutinized in the Cognitive Neuroimaging Lab led by Dr. Gagan Wig, with whom she started pursuing her doctorate and continues working for to this day.

Under Dr. Wig's supervision, she is studying how large-scale functional brain networks change over the adult lifespan,



Dr. Micaela Chan reviews Journal of Neuroscience paper with Dr. Gagan Wig.

and how these changes influence cognitive performance. Her finding, published by PNAS in 2014, was that increasing age is associated with a blurring of organization among brain sub-networks — a process that may predict poor long-term memory, regardless of a person's age.

The title of Dr. Chan's dissertation was "Age-related Desegregation of Functional Systems in Healthy Adults: The Underlying Patterns of Connections and Protective Life-course Factors." Her supervising committee consisted of Drs. Denise C. Park, Gagan S. Wig, Francesca M. Filbey and Jinkyung Na.

"Micaela's dissertation work brought together the challenging disciplines of brain science and the science of networks," Dr. Wig said. "This is no easy feat; her dedication and hard work shone throughout the project and brought much needed clarity to an exciting new field of inquiry. I think the interdisciplinary nature of her work is one of the things that makes our School and University so special."

Johns Hopkins' Dr. Marilyn Albert Speaks at 2017 Jean & Bill Booziotis Public Lecture



Director's Research Circle Members
Doug and Cassie Crosby.

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changes that improve cardiovascular health might help, along with staying mentally and socially engaged. In terms of vascular risk and developing Alzheimer's, intervening in mid-life appears to be a critical time, but some clinical trials among older people are also showing benefits, she said.

Earlier in the evening, Dr. Albert met with members of the Director's Research Circle, in a reception attended by UT Dallas Executive Vice President Hobson Wildenthal, and members of the CVL advisory council.

Guests included Rachel Anderson, Catelyn Fox and Holley Caldwell, with BvB, an organization raising funds for Alzheimer's research and awareness (formerly Blondes vs. Brunettes), as well as CVL supporters Dr. Doug and Cassie Crosby, past AWARE president (see picture at left).

The next Jean & Bill Booziotis Lecture is slated for April 2018. For more information on how to join CVL's Director's Research Circle, please visit vitallongevity. utdallas.edu/support. ❖

Dallas Aging & Cognition Conference Draws Neuroscientists Worldwide

Made possible with generous support by the UT Dallas Dept. of Behavioral and Brain Sciences, and the Office of the Provost, the fifth biennial Dallas Aging and Cognition Conference (DACC) was held at the Marriott City Center in downtown Dallas in late January.

CVL's banner two-day conference was a chance for scientists to present and learn about an array of findings that ranged from exploring the biomarkers of successful and unsuccessful aging to the concept of cognitive reserve and how some people's brains appear to be insulated from the pathological effects of amyloid accumulation.



Presenters and attendees discussed findings in different poster sessions on both days of the conference.

About 250 researchers from across the globe discussed the latest developments in the cognitive neuroscience of aging, including the imaging of brain pathologies thought to play a crucial role in the onset and development of Alzheimer's Disease and other forms of dementia.

The conference was organized along four themes, with each theme highlighted by an invited keynote speaker as well as other researchers who submitted talks associated with the four categories: "Neural Organization and Connectivity," with lead speaker Dr. Cheryl Grady, of the University of Toronto; "The Biomarkers of Successful and Unsuccessful Aging," with lead speaker Dr. William Jagust of the University of California, Berkeley; "Cognitive Reserve," with lead speaker Dr. Yaakov Stern of Columbia University; and "Neural Stimulation, Cognitive Training and Enrichment," with lead speaker Dr. Cindy Lustig of the University of Michigan.

This year, scientists from over 50 universities attended from universities across the globe including attendees from Germany, South Korea, England, Australia and Canada. There were particularly large groups from the University of Michigan, and Massachusetts General Hospital/Harvard University.



Dr. Denise Park and Dr. Bill Jagust, DACC invited speaker from the University of California, Berkelev.

A highlight of DACC 2017 was a Director's Research Circle dinner that provided an opportunity for local supporters of the Center for Vital Longevity to meet visiting scientists. The dinner featured a talk by UC Berkeley's Dr. Jagust, who described new advances in understanding Alzheimer's Disease by studying rare cases of families who have a heritable form of the disease. He also highlighted new imaging techniques that permit scientists to study the development of amyloid plaques and infiltration of the tau protein in the brains of seemingly healthy adults, providing an understanding of the earlier phases of Alzheimer's.

CVL Advisory Councilmember Profile

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his weekly radio program, "The Scott Murray Show" on 570 AM KLIF.

All along Murray has had his own father in mind, a member of the WWII's "Greatest Generation." In the end, Murray's father did not succumb to war injuries, but rather the oblivion of dementia. And it's a big reason why Murray identifies with a primary mission of CVL: to identify the neural signature of the healthy aging mind so that diseases like Alzheimer's can

be better understood and ultimately prevented.

The experience Murray had caring for his father, and becoming a father himself (Murray's son, Doug, is the President/COO of Murray Media; his daughter, Stephanie, is Vice President of Corporate Event Planning for JPMorgan Chase), led to the capstone opus of his media career: in 2015, he and his son both received Emmy Awards for their work on a documentary filmed in France, for which they traveled with two dozen World War II veterans from

North Texas on the 70th anniversary of D-Day to the beaches of Normandy, where they captured for time eternal the receding memories of this dwindling group of war heroes.

"Unforgettable," Murray says, not just about the interviews, but about receiving the awards with his son. "It simply doesn't get any better than that. It was the ultimate professional award I'll ever receive." Scott's most cherished personal award, he says: being named "Father of the Year" in 2002 by the national Father's Day Council.



A STUDY OF ONE Knitting Provides Calm and Enjoyment for CVL Staffer

Vivian Brockwell displays a selection of her knitted apparel, which has taken 1st place at the Texas State Fair.

The quilting arm of CVL's Synapse Study was one of the most popular research activities at the Center for Vital Longevity — one that is well known to scores of participants who have quilted to help Center scientists understand the possible cognitive benefits of undertaking a new and challenging hobby.

The work of one Center staffer, Vivian Brockwell, who in her free time has become somewhat of a knitting expert, has continued in obscurity. Until recently.

CVL's office coordinator has become so proficient — and some would say elegant and tasteful in her knitting prowess — that she took first place in needlework at the last Texas State Fair for her supple, Missoni-like patterns and intricate craftsmanship.

Rather than being part of a study, however, Vivian spends her off-hours, whenever she can get a free minute, knitting. Not only does she end up with beautiful, useable garments as gifts for friends and family (she even wears one sweater around the office), she also claims to experience a cognitive effect.

"I find I can think through problems better when I knit," Vivian says. "There

is also the tactile enjoyment of knitting with something luxurious like merino, silk and cashmere. Visually, a beautiful hand-dyed skein of soft yarn works wonders on my mood as I am knitting it up."

And like with most things, the more you do it, the better you become at it, she says.

Vivian learned to knit at 11, after she took her little sister in for a lesson. She knitted off-and-on for years, but only became serious and prolific with knitting 10 years ago, when a friend introduced her to Ravelry — the online community that offers organizational tools, and a yarn and pattern database for knitters and crocheters. She started on Ravelry making hats and socks, but has since graduated to knitting sweaters, shawls, socks, and dyeing yarn.

Among her favorite pieces — works of art, really — are a cabled Irish fishermen's sweater knit for her husband out of yarn she bought for him just before their wedding. That sweater was the most challenging knit to date, and the most satisfying, she says. "It fits him well and the color is perfect."

Who might want to take up knitting?

"Anyone who can hold on to the needles," Vivian says. "The joy of knitting is that you end up with a unique object or garment. It is not a 'waste-of-time' sort of hobby."

Indeed, you may actually sharpen your mind while you're at it.

Engaging in activities that are mentally challenging can result in improved memory and enhanced neural efficiency, says the Center's research director, Dr. Denise Park.

For anyone who would like more information on Vivian's work, please visit https://www.etsy.com/shop/HillviewYarns.



"The joy of knitting is that you end up with a unique object or garment. It is not a 'waste-of-time' sort of hobby."

NEW FACES

Bhaavana K, Graduate Student Rugg Lab



Bhaavana joined CVL recently as a graduate student, traveling from India to study applied cognition and neuroscience. She majored in bioengineering with honors during her bachelor's degree at SASTRA University. In her undergraduate work she was involved

in animal model studies on zebrafish, testing the effects of oxidative stress. In addition to these research experiences, she has also been trained in the dissection of rats and mice, and in histology methods and molecular biology techniques. She has always been interested in the field of mental healthcare and is looking forward to specializing in neurodiagnostics and monitoring. Last semester, under the guidance of Dr. Rugg, she researched and wrote a term paper on the role of amygdala in emotional memory comparing the binding and consolidation hypotheses. She has now joined the lab to study encoding and retrieval in human memory. During her free time, she likes to watch movies, read novels, poems and sometimes sketch.

Ashley Kuvet, Research Assistant Park Lab



Ashley joined the Park Lab in February, arriving from the University of Texas at Austin, where she received her bachelor's degree in psychology with a minor in anthropology. Her research interests center on understanding the neural underpinnings

of attraction, attachment and love. Early on in her studies, she became fascinated by the brain's reward circuitry and its role in the evolution of romantic love. At UT Austin, she completed her honors thesis under the mentorship of Dr. David M. Buss. Her thesis examined cues of chewing function and facial attractiveness from an evolutionary perspective. In the Aging Mind Lab of Dr. Park, Ashley will begin working with participants in the Dallas Lifespan Brain Study and managing participant data. In her free time, she enjoys music, dancing and pilates.

Kristin Smart, Research Assistant Park Lab



Kristen joined the Park Aging Mind Laboratory as a research assistant in January. She earned a bachelor's degree in psychology with minors in Spanish and political science from Baylor University in 2014. Two years later, she earned a master's degree in counselor education from The University of Texas at Austin.

Her research interests include how nutrition, sleep, and other basic functions affect the brain as well as mental health issues, specifically for marginalized populations. She became interested in this research while working with the Iraqi Young Leaders Exchange Program (an exchange program operated through the U.S. State Department, which partnered with UT Austin) and getting to learn from the students about different cultural issues for religious and ethnic minority groups. She later applied and was accepted to the American Psychological Association's Minority Fellowship Program where she continued to research issues facing marginalized populations, specifically in the United States. She will be working on the Dallas Lifespan Brain Study scheduling and maintaining contact with participants, administering measures of cognitive abilities, and processing and editing MRI and PET scan data. Outside of work, she enjoys trying new restaurants, exercising, playing the piano, and snuggling with her dog. 🌣

Jacob Braunwalder, Research Assistant Rugg Lab



After taking a break from his studies for a year, Jacob joined CVL after graduating from Colorado State University in 2016, with a bachelor's degree in psychology and a minor in biomedical sciences. Drawn to the Center's imaging work, Jacob is particularly interested in the effects of mindfulness on attention and memory encoding, and the overall

effect of mindfulness on the default mode areas of the brain. While at CSU, he studied electroencephalogram techniques under the mentorship of Dr. Lucy Troup, the co-director of the Center for Applied Cognitive Neuroscience there. His plan before returning to school for graduate studies is to broaden his knowledge by learning more about functional neuroimaging in the Rugg Lab. Jacob is an avid rock climber whenever he has free time.

Esra Ari, Graduate Student, Park Lab



Esra joined the Park Lab late last year and is continuing her graduate studies in the Applied Cognition and Neuroscience program at UT Dallas as a Fulbright Fellow. As an undergraduate, she attended the University of Cambridge, Istanbul Sehir (City) University, and Erasmus University Rotterdam, where she completed her studies in psychology with a specialization in cognitive neuropsychology. She attributes her evergrowing interest in human behavior and brain function to the times she spent around

relatives who worked in geronto-psychiatry and neurology clinics. Since an early age, she has been observing patients with aged-related memory impairments. Her childhood interests have culminated into a professional endeavor in cognition and neuroscience, in both clinical and lab settings. Apart from science, she particularly enjoys doing vinyasa yoga, performing visual arts, ballroom dancing and climbing.



Dr. Basak, far right, recently participated in an AAAS panel on the cognitive effect of video games.

Dr. Basak Speaks to American Association for Advancement of Science Gathering

Some video games, specifically strategy-based games, may improve brain function in older adults, Dr. Chandramallika Basak told a seminar cosponsored by the American Association for the Advancement of Science (AAAS) and the Dana Foundation in Washington, D.C., in mid-March.

Preliminary research has suggested that, "if the target is to improve older adults' cognitive control, reasoning, and higher-order cognitive skills, and possibly stave off dementia for as long as possible, then maybe strategy games are the way to go," she said.

This year's AAAS Neuroscience & Society lecture series focused on the effect on brain and behavior of video games, which are played by 155 million Americans at least three times a week, according to the AAAS.

The panel also included Craig Anderson, Ph.D., Distinguished Professor of Psychology at Iowa State University, who spoke about video game addiction, and the connection between violent video games and aggression.

Dr. Basak explained that strategy-based video games include not only real-time strategy games, such as "Rise of Nations," but also computer adaptations of strategy board games, especially the classic game of chess when played with time constraints. **

Grant Funding for Cognitive Aging Research Earned

Dr. Michael Rugg, director of the Center for Vital Longevity and head of CVL's Functional Neuroimaging of Memory Laboratory, has received a grant from the National Institutes of Health totaling \$2.2 million over five years.

The grant, which was awarded by the NIH's National Institute on Aging, will fund the continuation of Dr. Rugg's research on the effects of age on brain function and memory. Dr. Rugg is the Distinguished Chair in Behavioral and Brain Sciences.

An important aspect of this new phase of research will be the study of individuals with mild cognitive impairment, an important risk factor for Alzheimer's Disease. The grant will support research that uses magnetic resonance imaging to examine the structure and function of the brain.

One area of study will build on the group's previous work on healthy aging over the last decade to understand the brain changes linked to memory difficulties in the earliest stages of Alzheimer's. A second focus will compare previously unstudied aspects of memory in healthy young and older people.

Both areas aim to advance our understanding of how age- and Alzheimer's-related differences in the brain's function and structure affect key cognitive abilities like memory, and how brain function differs between people who are aging successfully and those who are at high risk of developing the disease.

Consider Giving to the Center Here's Why & How

Your gift to our scientists will play a crucial role in the next scientific breakthrough that can only occur with an investment from individuals like you. Center scientists are internationally recognized for their excellence, and are leading the way in discovering the footprint of cognitive vitality or decline as early as middle age, so that effective interventions can occur before diseases like Alzheimer's are ever manifested.

Please, play a role in solving one of the most critical scientific challenges confronting our nation and the world.

Give today at giving.utdallas.edu or contact Diana Aguirre at 972-883-3728 or diana.aguirre@utdallas.edu for more information on how to make a gift to the Center for Vital Longevity.

Thank you for ensuring the Center can carry on its research on the aging mind and further our goal of maintaining cognitive vitality for life.



THE SCIENCE OF THE AGING MIND

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