

New Thinking

Spring 2016
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ABOUT THINKING

A Publication by Cleveland Clinic Lou Ruvo Center for Brain Health



POWER
OF LOVE
20TH
ANNIVERSARY

**CELEBRATE WITH
US ON MAY 21**

Tony Bennett's 90th birthday
raises funds for Cleveland Clinic

Tickets on sale now! keepmemoryalive.org/POL



NETWORKING IN THE WORLD OF NEUROSCIENCE

Cleveland Clinic Lou Ruvo Center for Brain Health makes important contributions toward advancing new therapies and new diagnostic approaches to patients with neurological disease as part of a national and international neuroscience research enterprise. The complexity of contemporary neuroscience makes it impossible to make major neuroscience advances without multidisciplinary, multisite and multiple stakeholder collaborations.

The Lou Ruvo Center for Brain Health is engaged in and leads a number of important national neuroscience networks:

The Alzheimer's Disease Neuroimaging Initiative (ADNI) is a national collaboration to study normal elderly individuals, people with mild cognitive impairment and persons with early Alzheimer's disease through biomarkers such as brain imaging. Charles Bernick, MD, MPH, leads the ADNI project within the Lou Ruvo Center for Brain Health.

The Global Alzheimer Platform (GAP) is an international collaboration to re-engineer and transform clinical trials to make them faster, more efficient and of higher quality in order to accelerate the process of getting better drugs to patients faster. I am the national co-chair of the GAP network project.

The Parkinson's Study Group (PSG) is a national work group to advance new therapies and clinical trial methods for Parkinson's disease. Ryan Walsh, MD, PhD, is the Lou Ruvo Center for Brain Health representative to the PSG.

Led by Le Hua, MD, ours is the only MS program in Nevada to hold the "Partner in MS Care" designation from the National Multiple Sclerosis Society. As supporters and champions of the Lou Ruvo Center for Brain Health, you can take great pride in the center's national and international influence on neuroscience.

Jeffrey L. Cummings, MD, ScD

*Director, Cleveland Clinic Lou Ruvo Center for Brain Health
Camille and Larry Ruvo Chair for Brain Health*

Professor of Medicine, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

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702.263.9797

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Tony Bennett, who will celebrate his 90th birthday at Keep Memory Alive's Power of Love™ gala on May 21, with Larry Ruvo at the Lou Ruvo Center for Brain Health (see article on page 3)

KEEP MEMORY ALIVE TO CELEBRATE TONY BENNETT'S 90TH BIRTHDAY

Approaching 90 years of age, singer **Tony Bennett** is a role model for successful aging, routinely engaging in precisely the activities Cleveland Clinic Lou Ruvo Center for Brain Health doctors say promote healthy brain aging: proper nutrition, plenty of sleep, social interaction and exercise for the brain, among others.



L-R – Larry Ruvo, Tony Bennett and his wife, Susan Benedetto

“The whole secret for anyone my age is to keep growing, keep learning, keep creating,” Mr. Bennett explains. “It’s the opposite of many people who turn 90 and feel they’ve done it all and it’s time to relax. That’s a failure. As long as you’re living, you should keep learning and stay curious.”

“At age 10, my family told me I was good at performing and painting,” he adds. “That created a tremendous passion, where I feel as I get older I can get better.”

On May 21 at Keep Memory Alive’s 20th annual Power of Love™ gala, Mr. Bennett will be honored for his 90th birthday.

Among his early mentors, Tony Bennett cites Nat King Cole, Ella Fitzgerald, Louis Armstrong and Frank Sinatra, each about 10 years older than he. “Frank Sinatra once told *Life* magazine that I was his favorite singer. That changed my life. All of his fans started coming to my concerts. I’ve been sold out ever since. Frank changed my career. He became my best friend,” says Mr. Bennett.

Today, he continues to bridge musical generations by performing with the younger set, citing Lady Gaga as his favorite current collaborator. “I’ve gained all the young people who adore her. When she performs with me, she meets new fans. We eliminate demographics.”

Mr. Bennett acknowledges that not everyone is as fortunate as he to be aging with good physical and brain health. While touring the Lou Ruvo Center for Brain Health with Keep Memory Alive Chairman and Founder

POWER OF LOVE GALA MAY 21 IN LAS VEGAS

Our gala is much more than a party. It's an annual celebration of life that was created to raise money for Cleveland Clinic Lou Ruvo Center for Brain Health's programs and services. It's an evening you'll want to remember as you Keep Memory Alive.

Whether you're a veteran gala-goer or a newcomer, the 2016 Power of Love is the event you don't want to miss. Twenty years of history span celebrity chefs **Mario Batali, Tom Colicchio, Scott Conant, Giada De Laurentiis, Todd English, Thomas Keller, Emeril Lagasse, Michael Mina** and **Wolfgang Puck** and A-list entertainers including **Andrea Bocelli, Michael Bublé, Celine Dion, Snoop Dogg, Gloria Estefan, Cee Lo Green, Enrique Iglesias, LL Cool J, Lenny Kravitz, Barry Manilow, Martina McBride, Lionel Richie, Robin Thicke** and **Stevie Wonder**. So you know this year's gala will deliver spectacular live entertainment, remarkable wine and cocktails, and exquisite cuisine.

Wolfgang Puck will be joined by a cast of celebrity chefs.

This not-to-be-missed event will sell out. Get your tickets today at keepmemoryalive.org/pol or call 702.263.9797. If you're not receiving our monthly events update via email, contact us at specialevents@keepmemoryalive.org to get on the list.

POWER OF LOVE

20TH ANNIVERSARY

TONY BENNETT MAY 21 IN LAS VEGAS.

Tickets on sale now.
702.263.9797 or
keepmemoryalive.org

Bill Boyd will receive the
Community Leadership Award
(see article on page 45)

Larry Ruvo, Mr. Bennett commented, "I'm impressed with the doctors and what they're doing. This is the best place you could come to for help."

Mr. Bennett has offered a different kind of help to the Lou Ruvo Center for Brain Health by lending his name to raise funds for the center at Keep Memory Alive's Power of Love gala. Giving back has been an important focus for Mr. Bennett, who says, "I've done a lot of benefits in my career. At one point, people started calling me 'Tony Benefit.'"

Reminded that Frank Sinatra celebrated his 80th birthday very publicly in Las Vegas, the entertainment capital of the world, while George Burns celebrated his 100th, Mr. Bennett said, "I'm honored to be in that company. I'm thrilled about it. I'm looking forward to celebrating my 90th."

Every day — not just birthdays — is special for Mr. Bennett. "About six weeks ago, my doctor told me I'm completely healthy," he says. "My wife treats me well, makes sure I have great food and rest. I can't ask for a better life."



Tony Bennett learns about the science at Cleveland Clinic Lou Ruvo Center for Brain Health from Jeffrey Cummings, MD, ScD

PSST ... KNOW **WHO HAD AN ITALIAN AFFAIR** WITH ANDREA BOCELLI?

The answer is 27 lucky Keep Memory Alive supporters, who in September 2015 lived the dream of a lifetime: six days in Italy accompanied by international opera sensation Andrea Bocelli and his wife, Veronica.

Dubbed “An Italian Affair With Andrea Bocelli” when auctioned at Keep Memory Alive’s 2015 Power of Love™ gala, the trip was to be highlighted by a private dinner in the Bocellis’ home. However, guests exuberantly declared the trip exceeded its billing as the Bocellis accompanied the group during the entire six days.

Not the only celebrity traversing Tuscany, Andrea Bocelli was joined by Ronnie Dunn, David Foster, Reba McEntire, and The Band Perry. Along the way, the group enjoyed unrivaled “behind the velvet rope” experiences:

- Travel alongside celebrities on a private jet with on-board concierge
- A private reception at Florence’s Accademia Gallery under Michelangelo’s iconic “David”
- Lunch and a private fashion show at Maison Valentino
- A private viewing of St. Peter’s Basilica and the Sistine Chapel in Vatican City

- A gala with entertainment by Andrea Bocelli and an orchestra under the direction of Zubin Mehta
- Tour, lunch and tasting at Villa Collazzi with Camille and Larry Ruvo
- Dinner at Cantine Antinori nel Chianti Classico winery
- And, of course, the promised dinner at Veronica and Andrea Bocelli’s home in the coastal town of Forte del Marmi, with performances by some of the trip’s celebrity entertainers.

While at the Accademia Gallery, the Bocellis surprised co-hosts Camille and Larry Ruvo with the Veronica and Andrea Bocelli Award (see article on page 40).

➤ **If you’re interested in traveling with Keep Memory Alive, attending our 20th anniversary Power of Love gala on May 21 or supporting the organization through other events, please contact us to ensure you’re receiving our monthly events update: specialevents@keepmemoryalive.org or 702.263.9797.**



JAN AND BILL SANGER: A LOVE AFFAIR WITH WINE AND BRAIN HEALTH

In July 2015, Bill Sanger, Chairman, President and CEO of Envision Healthcare and proprietor of the Sanger Family of Wines, visited Cleveland Clinic Lou Ruvo Center for Brain Health in a professional capacity.

He observed, “The building is impressive, the clinicians are sharp, but most amazing was seeing the smiles on patients’ faces, which told me all I need to know about the center. Larry Ruvo and the team have translated hospitality concepts into patient care, a rare feat in today’s healthcare environment.”

Mr. Sanger and his wife, Jan, have become ardent supporters of Keep Memory Alive, and were enthusiastic bidders on “An Italian Affair With Andrea Bocelli” at the 2015 Power of Love gala.

The Sangers share another passion with Keep Memory Alive’s Camille and Larry Ruvo: wine. Mr. and Mrs. Sanger own the Sanger Family of Wines and Sanger Olive Oil Co., based in Los Olivos, California. Their wine brands include Consilience, Marianello and Tre Anneli. Additional products include estate-grown Lucca olive oil, flavored oils and vinegars, each produced under the Marianello label.

Odd bedfellows, healthcare and winemaking? Not really, says Mr. Sanger: “We know that wine has some medicinal value; that’s been proved. In small quantities, wine helps reduce the incidence of cardiac problems and, also, the onset of dementia.”

The Italian trip offered the Sangers a winning combination of food, wine, art and fashion.

“It sounds trite, but it was truly a once-in-a-lifetime experience. From the pre-departure dinner at Daniel in New York with the hilarious Dr. Ruth Westheimer, to every venue in Italy,

the trip exceeded our expectations. Each experience was unique in its own right; to try and compare them would diminish each one,” says Mr. Sanger. “Each has a memory we will carry forward.”

Mr. Sanger remembers that his first meeting with Larry Ruvo was ostensibly about wine, but Mr. Ruvo’s passion for brain health was infectious, and the conversation quickly turned to the Lou Ruvo Center for Brain Health. Mr. Sanger’s Envision Healthcare treats 18 million patients annually, and he estimates half of their medical conditions have a brain health-related component: “If we can understand how the unhealthy brain affects medical care, we can really affect the quality of life and healthcare cost. The ripple effect will be phenomenal.

“I think we’ll find solutions to Alzheimer’s and dementia,” Mr. Sanger adds. “For Larry Ruvo, it’s a passion, yet I don’t think he really understands the difference he is making. I honestly believe Larry Ruvo and the team can bend history as it relates to care for the brain.”



Jan and Bill Sanger



The Sangers with Dr. Ruth Westheimer



On the red carpet with the Bocellis

UNLV President Len Jessup, PhD, and Medical School Founding Dean Barbara Atkinson, MD, flank Jeffrey Cummings, MD, ScD



\$11.1 MILLION NIH GRANT **ACCELERATES RESEARCH** OF ALZHEIMER'S, PARKINSON'S DISEASES

Cleveland Clinic Lou Ruvo Center for Brain Health and the University of Nevada, Las Vegas (UNLV) were recently awarded an \$11.1 million grant from the National Institutes of Health and the National Institute of General Medical Sciences to fund a Center of Biomedical Research Excellence (COBRE). This grant will provide more than \$2 million a year over a five-year period.

This is the first COBRE grant ever received in Southern Nevada. It will fund three research projects related to Parkinson's and Alzheimer's diseases, each under the direction of a recognized project leader:

- **Assessing novel models of Alzheimer's and the immune system:** Jefferson W. Kinney, PhD, UNLV
- **Using neuroimaging and neuropsychology to advance understanding of Parkinson's and associated cognitive impairment:** Ryan R. Walsh, MD, PhD, the Lou Ruvo Center for Brain Health

- **Using neuropsychology, combined with cutting-edge imaging techniques, to understand Alzheimer's, Parkinson's and their commonalities:** Sarah Banks, PhD, ABPP/CN, the Lou Ruvo Center for Brain Health

To provide a pipeline of patients for these research projects, the COBRE grant also funds a clinical component to be led by the Lou Ruvo Center for Brain Health's Senior Director of Clinical Research, Kate Zhong, MD. The University of Nevada, Las Vegas' Supercomputer Center, directed by Joseph Lombardo, PhD, will provide database and statistical support.

"We are thrilled to be forming Southern Nevada's first Center of Biomedical Research Excellence in partnership with UNLV," says Jeffrey Cummings, MD, ScD, Director of the Lou Ruvo Center for Brain Health and principal investigator for the COBRE grant. "To be awarded such a competitive federal grant to tackle the medical mysteries behind such devastating diseases as Alzheimer's and Parkinson's is a testament to the caliber of the area's medical capabilities and collaborative efforts with UNLV."

The COBRE award cements UNLV's long-standing research collaboration with the Lou Ruvo Center for Brain Health and advances our shared mission to find answers to complex health issues affecting so many in our community and around the world, while amplifying the scientific and medical landscape of Southern Nevada.



L-R – Tom Piechota, PhD, Jeffrey Cummings, MD, ScD, Kate Zhong, MD, and Len Jessup, PhD

YOU CAN HELP

Private gifts make a difference, too. If you're interested in helping fund research at the Lou Ruvo Center for Brain Health, please contact our development team at 702.263.9797 or DonateNevada@ccf.org.

AGITATION DRUG FOR ALZHEIMER'S DISEASE TAKES ANOTHER STEP TOWARD FDA APPROVAL

Cleveland Clinic Lou Ruvo Center for Brain Health published encouraging results in the September 22 issue of the *Journal of the American Medical Association* from its clinical trial of a drug known as AVP-923, which is intended to reduce agitation in individuals with Alzheimer's disease.

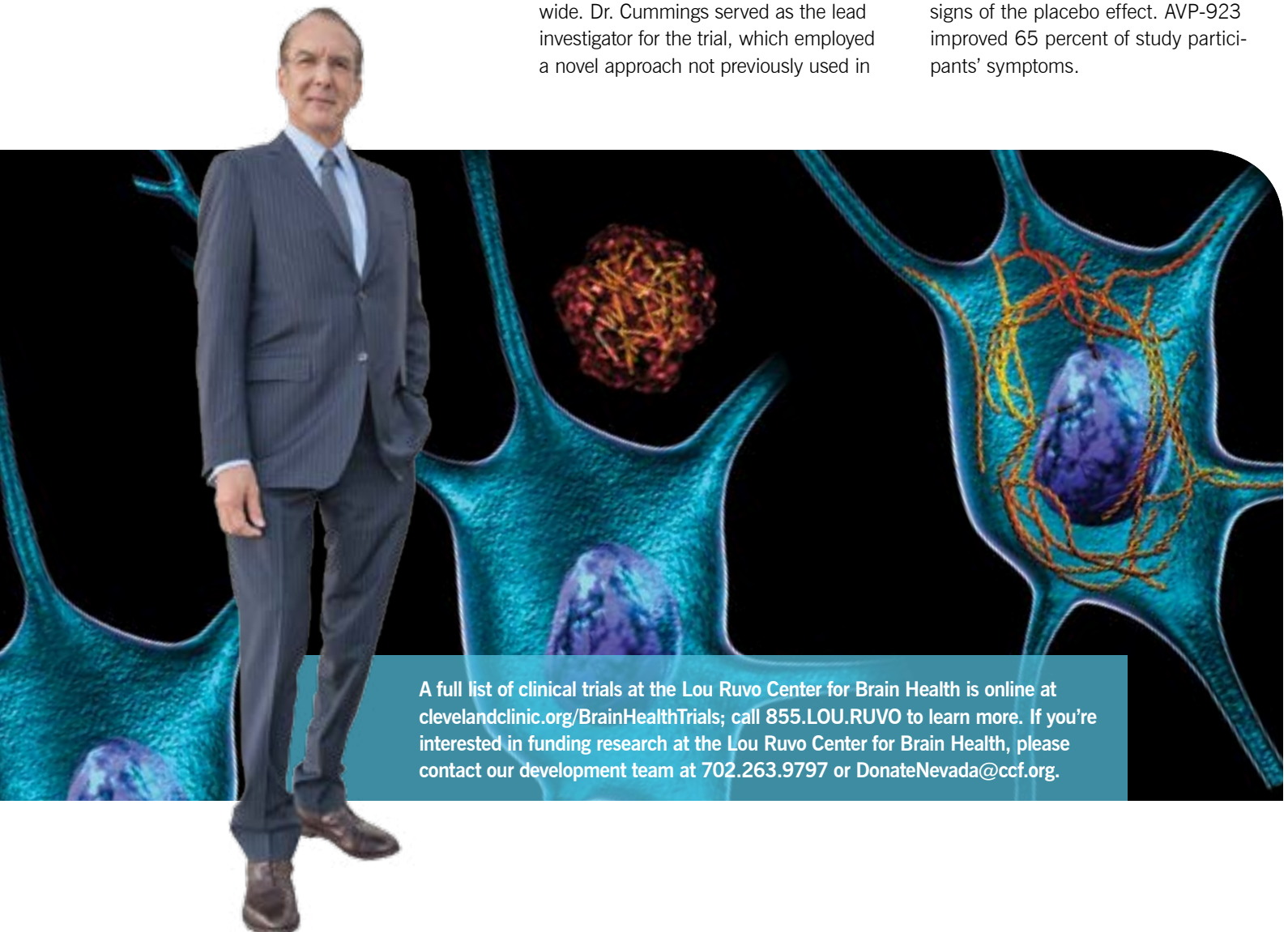
Over a 10-week period, the double-blind, placebo-controlled study tested AVP-923 in trial participants with Alzheimer's disease who had been experiencing moderate to severe agitation. The drug will now advance to a Phase 3 clinical trial in preparation for FDA approval. If approved, AVP-923 will be the first FDA-sanctioned drug to treat agitation in Alzheimer's disease.

"The effects from the trial were remarkable and among the strongest we've ever seen," says Jeffrey Cummings, MD, ScD, Director of the Lou Ruvo Center for Brain Health. "Usually, it takes at least three weeks to see a change but, in this case, our clinical trial participants started experiencing benefits within one week."

The groundbreaking trial was also conducted at 41 other locations nationwide. Dr. Cummings served as the lead investigator for the trial, which employed a novel approach not previously used in

neurological drug trials. The study was able to manage the "placebo effect," in which participants on the placebo show improvement obviously unrelated to the drug being tested. The placebo effect poses a challenge in studies of behavioral symptoms in dementia.

In stage 1, the trial tested AVP-923 versus placebo, while the second stage of the trial removed participants showing signs of the placebo effect. AVP-923 improved 65 percent of study participants' symptoms.



A full list of clinical trials at the Lou Ruvo Center for Brain Health is online at clevelandclinic.org/BrainHealthTrials; call 855.LOU.RUVO to learn more. If you're interested in funding research at the Lou Ruvo Center for Brain Health, please contact our development team at 702.263.9797 or DonateNevada@ccf.org.

INTERACTIVE WEBSITE HELPS THOUSANDS TOWARD HEALTHIER BRAINS



Of the 1,000 people surveyed in Cleveland Clinic's 2015 American Brain Health Survey, approximately 91 percent said it is "very important" to them to have a healthy brain. About 85 percent were at least slightly concerned about developing Alzheimer's disease or dementia, and about three-quarters agreed that lifestyle choices impact brain health.

These findings may explain why, since its launch last May, a steadily increasing number of people (more than 7,500) have logged on to HealthyBrains.org, a unique interactive website designed by Cleveland Clinic Lou Ruvo Center for Brain Health. The site, along with a mobile app and online community, is part of the Healthy Brains Initiative — an innovative, engaging platform that allows users to both assess their brain health and learn how to maintain or improve it. About 3,600 people have measured their Brain Health Index (BHI) scores through the site and, subsequently, have received personalized reports and up-to-date brain health news.

Healthy Brains Users Help Others

About half of Healthy Brains users have expressed an interest in participating in clinical trials to help research new treatments. Of these, six have been screened as candidates. The site serves a critical role as an outreach channel from the Lou Ruvo Center for Brain Health to the community for clinical trials participation.

"Along with creating a new channel for attracting clinical trial participants, HealthyBrains.org shows users how to take control of their brain health," says Kate Zhong, MD, Senior Director of Clinical Research and Development for

the Lou Ruvo Center for Brain Health. "By providing free brain self-assessments online, lifestyle advice and the latest news, we are laying the foundation to be an online destination for those interested in keeping memory alive."

Dr. Zhong and her team periodically enhance the website, based on suggestions from users as well as needs identified by tracking users' browsing habits. About two-thirds of the site's users are female and, of them, one-third is older than 65.

► **Visit HealthyBrains.org for your free brain health self-assessment.**

UFC: KEEPING BRAIN HEALTH IN THE MIX

In its mission to protect the brain health of professional fighters and advance understanding of head trauma in contact sports, Cleveland Clinic Lou Ruvo Center for Brain Health has a powerful ally: UFC, the premier mixed martial arts (MMA) organization. From the start of the Professional Fighters Brain Health Study in 2011, UFC has been actively involved, providing guidance and encouraging its fighters to participate. Along with other contact sports organizations, UFC in 2014 made a generous financial contribution to the study. In January 2016, UFC increased its support with another donation.



Charles Bernick, MD, MPH

“UFC was one of the first major sports organizations to support the study. Their involvement has been critical to the significant progress we’ve made,” says Charles Bernick, MD, MPH, Associate Medical Director of the Lou Ruvo Center for Brain Health and principal investigator of the study.

UFC fighters who sustain a concussion during a fight are evaluated to provide additional data for the study.

“UFC participants are experienced fighters who are helping us understand the effects of blows to the head over time, and why one person is more vulnerable to brain injury than another,” says Dr. Bernick.



Lawrence Epstein

“Our company’s greatest concern is the health and safety of our fighters, which is why we have fully supported the brain health study,” says Lawrence Epstein, UFC Chief Operating Officer.

One UFC fighter in the study is Jessica Aguilar, a 10-year veteran of the sport. “It’s important to me to keep track of changes in my brain while I’m an athlete, and to help future MMA athletes maintain their brain health,” says Ms. Aguilar.

“If the study can develop ways to identify which fighters are predisposed to brain injury, we can establish licensing standards for brain health that will prevent fighters prone to brain injury from competing in the sport,” says Mr. Epstein.

► **If you’re interested in supporting the Professional Fighters’ Brain Health Study, please contact the development team at 702.263.9797 or DonateNevada@ccf.org.**

The Professional Fighters Brain Health Study is focused on identifying methods to detect the earliest signs of brain injury in those exposed to trauma and on determining which fighters may be more likely to develop chronic neurological disorders. All study participants undergo an annual comprehensive assessment of brain health and function. In addition,



UFC Fighter Jessica Aguilar at the Lou Ruvo Center for Brain Health for her study visit



Aaron Bonner-Jackson, PhD

STUDY VALIDATES MEMORY TESTS AS INDICATORS OF HIPPOCAMPUS SIZE

By Aaron Bonner-Jackson, PhD, ABPP/CN

Alzheimer's disease (AD) leads to progressive loss of tissue throughout the brain, but an area called the hippocampus tends to show the most rapid loss earliest in the disease course.



The hippocampus is essential for forming new memories, such as what you ate for lunch or what was said in a recent conversation. The progressive shrinking of the hippocampus is responsible for the short-term memory loss that is the hallmark of AD.

Although we have no effective treatment for AD, there is increasing interest in identifying it at its earliest stages because early intervention may be most effective in combating the disease. Disease markers, such as hippocampal volume and memory performance, can be useful in diagnosis and treatment planning.

Mild Cognitive Impairment (MCI) is a pre-dementia state in which a person shows changes in memory or other thinking skills, but continues to function fairly normally in daily life. Given their

increased risk of developing dementia, patients with MCI have been studied extensively and can shed light on processes that may occur before disease onset.

In a study conducted at Cleveland Clinic Lou Ruvo Center for Brain Health's Cleveland and Las Vegas locations, we examined the relationship between the size of the hippocampus and measures of both verbal memory (learning and recalling a list of words) and non-verbal memory (learning and recalling geometric shapes) in a large sample of patients with MCI.

We found strong relationships between the memory measures and hippocampal volumes, suggesting that these measures may serve as effective indicators of hippocampal size. These discoveries

can be implemented in a wide variety of studies. We now know that memory tests reflect hippocampal size and can be used to identify patients in the middle stage of dementia.

➤ **A complete list of research and clinical trials under way at the Lou Ruvo Center for Brain Health's multiple locations is online at clevelandclinic.org/BrainHealthTrials.**

ABOUT THE AUTHOR

Aaron Bonner-Jackson, PhD, ABPP/CN, is a neuropsychologist at the Cleveland site of the Lou Ruvo Center for Brain Health. In addition to assessment and evaluation of patients, his research interests include neurodegenerative diseases, such as Alzheimer's disease and Huntington's disease, as well as factors affecting burden among caregivers for individuals with dementia and cognitive disorders.



Neuropsychology team, L-R: Jody-Lynn Berg, Jan Durant, Sarah Banks, PhD, and Justin Miller, PhD

MEASURING THE INTANGIBLE: HOW NEUROPSYCHOLOGY CAN HELP

By Justin Miller, PhD, ABPP/CN

Being able to pay attention, learn and remember new things, solve problems and express our thoughts are among the cognitive functions that shape human behavior. Behaviors like these cannot be felt or touched, but rather must be seen and observed; all behaviors originate in the brain.

Changes in thinking are a normal part of the aging process but, sometimes, changes happen sooner or faster than we expect for normal aging. As doctors, our job is to figure out whether the behavioral changes our patients experience are a normal part of aging or whether something unusual is happening.

But how do you measure something as intangible as behavior? One way is to have patients perform tasks that help demonstrate a particular behavior. For example, if a physical therapist wants to know how good your balance is, he might have you stand on one leg and time how long you can stay there without putting your other foot down. If your doctor wants to know how good your

memory is, she might read you a list of words or a short story and later ask how much you remember. How well a person does on these tests gives us clues about how various parts of the brain are functioning. When we pair these tests with a brain scan, your doctors can get a good sense of what your brain looks like and how well it's working.

At Cleveland Clinic Lou Ruvo Center for Brain Health, we use a team-based approach. Our neuropsychology technicians work with the neuropsychologists to administer these tests, similar to a radiology technician working with a radiologist. The tests are completed via pencil and paper, oral question and answer, or on a computer, and are

designed to evaluate strengths and weaknesses in cognition. Our technicians have extensive training on how to properly administer and score the assessments. Because they spend a lot of time with patients, technicians also provide behavioral observations that help the neuropsychologist interpret the data.

We are constantly studying just how well our tests work in order to develop new and better assessments. By systematically studying how patterns of performance on our cognitive tests relate to specific brain structures, we learn more about what our tests tell us about brain functioning, which is a critical piece of diagnostic information.

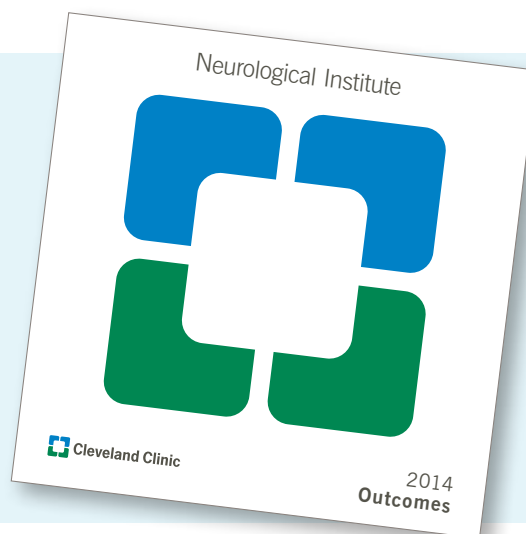
ABOUT THE AUTHOR

Justin B. Miller, PhD, is a staff neuropsychologist at the Lou Ruvo Center for Brain. Dr. Miller's clinical practice involves the assessment of patients' cognitive functioning and integration of their cognitive profile with relevant medical, psychological and psychosocial factors to help diagnose and formulate appropriate treatment strategies.

THE IMPORTANCE OF MEASURING AND REPORTING OUTCOMES

By Janet Perryman, MBA

Cleveland Clinic's commitment to transparent reporting of accurate, timely information about patient care outcomes reflects our culture of continuous quality improvement.



Cleveland Clinic's Outcomes Books are designed primarily for physicians/clinicians, but are publicly available on the Cleveland Clinic website. Analyzing and reporting outcomes annually promotes quality improvement and, Cleveland Clinic believes, enhances patient care.

Cleveland Clinic creates an Outcomes Book for each of its 27 institutes, with a focus on clinical outcomes data as well as new technologies and innovations. Our performance is compared with industry standards considered benchmarks. Cleveland Clinic's outcomes reports go well beyond any required by public health reporting.

The Neurological Institute's Outcomes Book represents the work of 14 disease-based centers — among them Cleveland Clinic Lou Ruvo Center for Brain Health — and four academic departments managing many complex neurologic issues. Accomplishments in 2014 included advancements in imaging related to epilepsy surgery, launch of one of the first mobile stroke units in the nation and establishment of a Brain Health Biobank. The purpose of the Brain Health Biobank is to make biospecimens rapidly available for research on neurodegenerative and age-associated brain diseases.

The Neurological Institute and the Lou Ruvo Center for Brain Health are dedicated to data-informed care. Our Knowledge Program® collects data from the questionnaires patients and their caregivers complete and incorporates

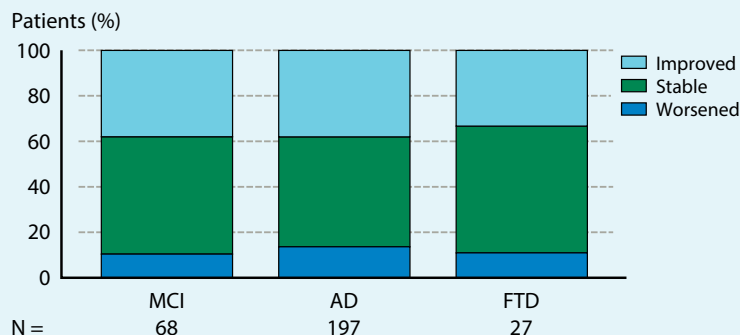
data from care providers to enhance our understanding of neurodegenerative diseases and to improve patient outcomes.

The Lou Ruvo Center for Brain Health monitors and reports on changes in quality of life for people with cognitive disorders as well as changes in depressive symptoms. Monitoring these

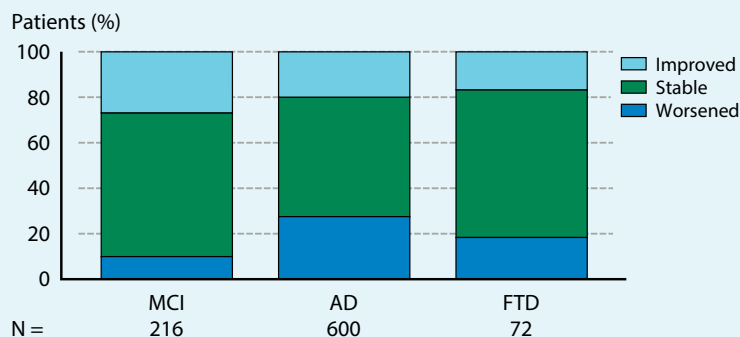
outcomes heightens clinician awareness and enhances our ability to address treatable aspects of these changes. Furthermore, it guides us in providing support and direction to our patients and their caregivers.

► **Outcomes Books can be viewed online at clevelandclinic.org/outcomes.**

Change in Depressive Symptoms in Patients With Cognitive Disorders 2013-2014



Change in Quality of Life in Patients With Cognitive Disorders 2013-2014



ABOUT THE AUTHOR

Janet Perryman, MBA, is an administrator in the Neurological Institute working with several programs, including the Cleveland and Lakewood, Ohio, locations of the Lou Ruvo Center for Brain Health. She is on the Neurological Institute's coordinating team for the annual Outcomes Book, led by Jocelyn Bautista, MD.

Aaron Ritter, MD, center, brings in Gabriel Léger, MD, to consult with a patient



PEER TO PEER: COLLABORATION ENHANCES CARE AND ADVANCES NEUROSCIENCE

By Aaron Ritter, MD

Medical grand rounds — the time-honored tradition of presenting a medically challenging case to an audience of doctors, residents and medical students — have been a cornerstone of medical education for more than a century. To this day, medical centers all over the world hold regularly scheduled grand rounds, using peer-to-peer education to keep doctors up to date on evolving areas of medical care.

Cleveland Clinic Lou Ruvo Center for Brain Health upholds this tradition, albeit with a decidedly updated approach. Drawing on the collective brain power of experts in neurodegenerative disease at three locations across the United States (Florida, Ohio and Nevada), healthcare professionals present cases weekly via teleconference, encouraging collaboration beyond any one location's walls.

Prior to each seminar, a few challenging cases are chosen for discussion. During the case presentation, the facilitator summarizes the relevant clinical information and reviews the neuroimaging (MRI, PET or CT scans). Unlike traditional grand rounds, which are usually attended only by physicians, the entire care team is encouraged to attend and contribute to the discussion. The neuropsychology team provides insight into brain function and cognitive performance, while neurorehabilitation services (occupational and physical therapy) add crucial information about a patient's physical functioning.

Incorporating information from all members of the care team, a comprehensive picture of the patient emerges and a vigorous discussion ensues about challenging aspects of the case. Because many diseases treated at the Lou Ruvo Center for Brain Health are exceedingly rare, the practice of drawing on the experience of providers across the three sites increases the likelihood that accurate diagnoses are made and appropriate treatments are recommended.

In addition to improving the quality of care for patients with neurodegenerative disease, the collaborative efforts of the conference have generated a number of research ideas and several published papers. It is this type of collaboration that advances neuroscience and makes Cleveland Clinic's approach to patient care unique.

ABOUT THE AUTHOR

Aaron Ritter, MD, is a clinical fellow in behavioral neurology and neuropsychiatry at Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas. He specializes in the diagnosis and treatment of neurodegenerative disorders. To make an appointment with him or another member of the Lou Ruvo Center for Brain Health's memory care team, please call 702.483.6000.



THE VPAC: GIVING VOICE TO PATIENTS AND FAMILIES

By Maile Chapman, PhD

My mother, Lynette Evans, is a sweet, funny, kind woman who suffers from Alzheimer's disease. As she became ill, my sister and I moved her out of her familiar house, scrambled to get her finances and insurance in order, and found medical care for a disease that doesn't allow for much hope.

Because none of this is unique to our family, I strive to share insights I've gained that might help someone facing similar struggles. So my interest was caught instantly when I heard about Cleveland Clinic Lou Ruvo Center for Brain Health's plan for a Voice of the Patient Advisory Council (VPAC). Working with other council members who are patients, caregivers, volunteers and center staff offers a chance to contribute to something bigger than myself.

The discussions at VPAC meetings are always about some practical, hands-on aspect of being a patient at the clinic. We don't try to solve our individual or family problems; instead, we use our experiences to look at the bigger picture in some constructive way. As one example, what happens if you get a new prescription

from your primary care doctor, and you need to know if it's safe to mix with whatever your neurologist at the Lou Ruvo Center for Brain Health prescribes? Can you reach your neurologist directly? If not, which team member returns your call, and how long does it take? Do you get the answer you need in a clear and timely manner — and, if not, where did communication seem to falter? These are important questions when your brain may be at risk!

At one VPAC meeting, the staff got to hear directly what it's like to be the one making potentially frustrating phone calls, trying to get answers. In this way, VPAC members can help identify specific ways to make Cleveland Clinic programs and systems more user friendly, improving the overall experience for patients in the future.

Maile Chapman and Lynette Evans, 2015



Maile Chapman and her mother, Lynette Evans, in the 1980s

ABOUT THE AUTHOR

Maile Chapman, PhD, is Artistic Director of the Beverly Rogers, Carol C. Harter Black Mountain Institute; an Assistant Professor of English; and Editor, Witness Magazine, at the University of Nevada, Las Vegas.

WHAT IS A VPAC?

Voice of the Patient Advisory Councils (VPACs) empower patients and families to take an active role in improving the patient experience at Cleveland Clinic. Formed across the Cleveland Clinic health system, these advisory councils include employees and patients who meet regularly to provide real-time feedback and creative solutions to specific challenges that affect patients and family members.

The Lou Ruvo Center for Brain Health launched its VPAC in May 2015, and is currently recruiting new members to join the group in May 2016. We meet monthly for an hour and a half and engage in homework projects in preparation for each meeting. If you're interested in being considered for voluntary participation, please contact Nicole Wolf, Director of Marketing and Communication, at wolfn@ccf.org or speak with your Lou Ruvo Center for Brain Health provider.



EVERY PATIENT DESERVES A PHARMACIST

Cleveland Clinic Lou Ruvo Center for Brain Health has advanced its management of drug treatment with a centralized pharmacy for caregivers, patients and clinical trial participants.

The pharmacy, which opened in the summer, differs from the more common retail and hospital pharmacies because it carries only research medications used for clinical trials and medications for infusions given to patients at the center.

Garam Lee, PharmD, RPh, joined the Lou Ruvo Center for Brain Health in 2015 to head up the pharmacy. She is responsible for receiving, documenting, dispensing and tracking research medications and providing guidance to clinical trial investigators. She also prepares and dispenses medications for use in the center's infusions and counsels providers on decisions related to prescription drugs.

John Petrich, RPh, MS, Manager, Investigational Drug Service, at Cleveland Clinic in Cleveland, says Dr. Lee's new role is critical "because medications are

pervasive throughout a patient's continuum of care.

"We believe that every patient deserves a pharmacist," he says. "Dr. Lee's presence, and the changes she's overseen at the Lou Ruvo Center for Brain Health, are the first steps in making that happen. In a variety of settings, studies have shown that superior clinical outcomes are associated with a pharmacist's interventions versus no pharmacist involvement."

Dr. Lee has been working to add other pharmacy services, including group sessions for patients diagnosed with diseases such as Parkinson's, multiple sclerosis and Alzheimer's. In the sessions, patients can ask questions and gain information about the medications they have been prescribed to manage their symptoms.



Introducing Garam Lee

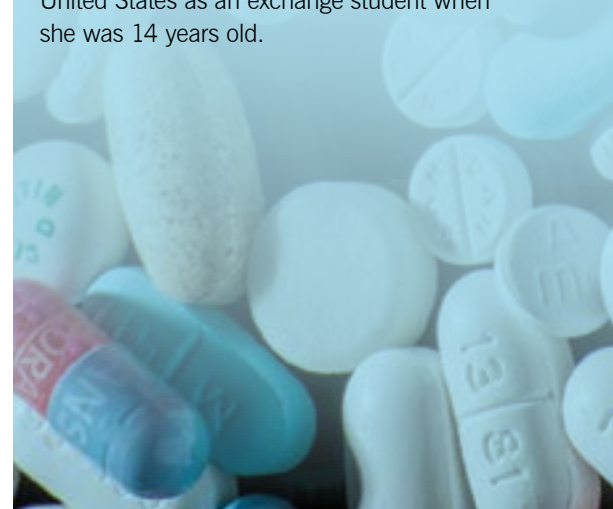
Garam Lee, PharmD, RPh, joined the Lou Ruvo Center for Brain Health in July after receiving a Doctor of Pharmacy degree from Northeastern University in Boston. She went through clinical rotations in research pharmacy at the Dana Farber Cancer Institute in Boston and Mount Sinai Hospital in New York.

"I've always been very interested in neurology and behavioral sciences, and feel very fortunate to be here," Dr. Lee says. "It's exciting because we are building something that could potentially benefit patients in many ways. It is an honor to work alongside this incredible team. I'm excited to collaborate with the top providers in the brain health field to optimize medication therapy for our patients and to assist in cutting-edge research."

Dr. Lee is from South Korea. She came to the United States as an exchange student when she was 14 years old.



Garam Lee and John Petrich cut the ribbon on the new pharmacy



FOR DYSTONIA PATIENTS, A TREATMENT THAT CAN BRING RELIEF

By Brent Bluett, DO

Dystonia is a neurologic disorder that affects up to 300,000 people in the United States alone. People with dystonia have involuntary muscle contractions that cause twisting and repetitive movements or abnormal postures. These sometimes painful movements may involve a single muscle, a group of muscles (such as in the arms, legs or neck), or the entire body.



The most common forms of dystonia are:

- Blepharospasm, which is involuntary blinking of one or both eyes, and
- Cervical dystonia, or involuntary muscle contractions of the neck that cause abnormal head positioning and are often painful

The types of dystonia that affect the entire body are more common in children and younger adults. Dystonia causes varying degrees of disability and pain, from mild to severe.

At Cleveland Clinic Lou Ruvo Center for Brain Health, we have a world-class team from many disciplines that works in a coordinated fashion, assessing and addressing the physical, emotional,

mental and behavioral needs of individuals with dystonia.

While there is no cure for dystonia, multiple treatment options are available to reduce the severity of symptoms. Oral medications can be used, but are often ineffective. Surgery is available, but usually as a last resort. Botulinum toxin injections are the primary and most effective form of treatment for most types of dystonia.

What is botulinum toxin?

Botulinum toxin is a neurotoxin, but it provides significant relief for many types of dystonia, and is safe when injected into muscles in very small doses. After an injection, it blocks the signal between

nerve and muscle, allowing the muscle to relax temporarily. The effect of botulinum toxin on the muscle begins approximately two to three days after injection, peaks between two and six weeks, and usually provides relief for approximately three months, at which point the injection can be repeated.

For botulinum toxin injections to be successful, it is critical that the injecting physician be well-versed in dystonia, the functional anatomy of the involved muscles, and the type and doses of botulinum toxin to use. The Lou Ruvo Center for Brain Health now offers a botulinum toxin for dystonia clinic. To make an appointment, please call 702.483.6000.

ABOUT THE AUTHOR

Brent Bluett, DO, is a board-certified neurologist and fellowship-trained movement disorders specialist at the Lou Ruvo Center for Brain Health. He specializes in the diagnosis and treatment of movement disorders such as Parkinson's disease, dystonia, atypical parkinsonism, tremor, ataxia and chorea.

NEW DRUG OFFERS HOPE TO SOME WITH PARKINSON'S DISEASE



Ryan Walsh, MD, PhD

Individuals with advanced Parkinson's disease (PD) who have difficulty controlling their symptoms with medication may be helped by a new treatment: Levodopa Carbidopa Intestinal Gel (LCIG, marketed as Duopa™). The Parkinson's Disease and Movement Disorders Program at Cleveland Clinic Lou Ruvo Center for Brain Health was the first clinic in Nevada and the region to offer LCIG after it received FDA approval last year.

As their disease progresses, PD patients need higher doses of medication, which increases the risk of side effects that can cause involuntary movements, or dyskinesia. Also, medications are effective for a shorter period, resulting in “off” times when PD symptoms return. These symptom variations, referred to as motor fluctuations, are common in more advanced PD.

“Patients end up on a roller coaster ride, alternating between symptom relief, side effects and symptoms returning as the medication wears off,” says Ryan R. Walsh, MD, PhD, Director, Parkinson's Disease and Movement Disorders Program at the Lou Ruvo Center for Brain Health and Lee Pascal Parkinson's Disease Scholar.

LCIG is a unique treatment that delivers the most common oral PD drug, carbidopa/levodopa (also known as Simenet®) using a small, portable infusion pump connected to a tube that is surgically implanted through the skin and stomach down into the intestine, where the medication is directly and continuously absorbed. Following implantation of the device by a gastroenterologist, the neurologist determines the optimal continuous medication dose that improves movement performance without causing side effects.

LCIG maintains a more stable level of medication in the bloodstream than oral medication does and reduces the ups and downs of symptoms during the day, while minimizing the often-frequent oral dosing of medication that patients require.

LCIG is not for everyone. Some patients with advanced PD are not candidates for this treatment, while others may not want to have a tube implanted in the abdomen. So far, two Lou Ruvo Center for Brain Health patients have chosen the LCIG treatment and others are considering it.

“Both patients have had significant improvements in their roller coaster symptoms and significant reductions in the need to take oral medications. LCIG helps stabilize symptoms so they know what to expect throughout the day, and don't have to watch the clock to take their next dose of medication and wonder when it will stop working,” says Dr. Walsh.

FOR ADVANCED PARKINSON'S PATIENTS

If you have advanced Parkinson's disease and are experiencing motor fluctuations, we are happy to discuss whether you are a potential candidate for LCIG. Call the Lou Ruvo Center for Brain Health at 702.483.6000 to make an appointment.

OBSERVING MS PATIENTS IN A REAL-WORLD SETTING

By Carrie M. Hersh, DO, MS

The field of multiple sclerosis (MS) treatment and research is rapidly growing in a very exciting way.

Twelve distinct treatments have emerged since 1993, and many more promising therapies are on the horizon. A variety of medicines will likely be approved in the next few years, based on how their efficacy, tolerability and safety in clinical research trials stack up against medicines already approved for MS treatment.

Clinical trials are the standard for FDA approval of new MS drug therapies. Yet, with the advent of so many treatments, cross-comparisons in highly regimented clinical trials are not practical. That is just one reason why the observations of physicians who prescribe newly approved drugs for their patients are uniquely valuable for assessing how well these medications work in a “real-world,” or clinical, setting: the doctor’s office.

Patients studied in clinical trials tend to have different qualities and motivations for taking a particular medication precisely as directed compared with patients prescribed an approved drug in a physician’s office. Variability in adherence is one of several factors that make it difficult to judge how patients in the real world will respond to treatment.



Carrie Hersh, DO

In assessing medication effectiveness and safety, it is important that physicians observing patient response use measures similar to those used in clinical trials. These include number of relapses per year, presence of new lesions, physical disability measures and common side effects.

Equally important are measures that assess a patient’s concept of general wellness, mood and functional impairment. Observation of general wellness presents a key opportunity for real-world research to impact quality of life for patients with MS. Patient-reported outcomes provide healthcare professionals a quick glimpse of how drug therapy affects quality of life. This information can easily be collected via questionnaires prior to routine office visits.

To make an appointment with Dr. Hersh or another member of the Lou Ruvo Center for Brain Health’s MS team, please call 702.483.6000. Information on research is available at clevelandclinic.org/BrainHealthTrials or 855.LOU.RUVO.

Cost-effective, outcomes-based research allows physicians not only to compare how well different therapies work, but also to confirm that these medicines work well in the clinical setting. After all, the ultimate goal is to ensure that therapies that work in clinical trials are equally effective and safe in our patients we see in the real world.

ABOUT THE AUTHOR

Carrie M. Hersh, DO, MS, is a neuroimmunology/MS fellowship-trained neurologist with an advanced degree in clinical research. In her master’s degree program at Case Western Reserve University, she conducted health outcomes research in MS, and plans to pursue these studies further at Cleveland Clinic Lou Ruvo Center for Brain Health.

STATE TASK FORCE TAKES AIM AT ALZHEIMER'S DISEASE

Cleveland Clinic Lou Ruvo Center for Brain Health addresses neurodegenerative brain diseases on numerous fronts: clinically as well as through research, education and advocacy.

As members of the State of Nevada Task Force on Alzheimer's Disease (TFAD), Charles Bernick, MD, MPH, Associate Medical Director, and LeeAnn Mandarino, Program Manager, Education, have helped shape legislation to assist families and caregivers in navigating the insidious consequences of dementias.

The Nevada State Assembly created TFAD within the Department of Health and Human Services in the 2013 Legislative Session and charged the task force with developing a state plan to address Alzheimer's disease and related dementias. What has emerged from TFAD's work is a comprehensive set of recommendations directed at issues affecting patients and families dealing with dementia.

Cleveland Clinic Lou Ruvo Center for Brain Health has provided leadership on several initiatives, including creating a better system of care for hospitalized dementia patients and developing a statewide research consortium to advance Alzheimer's disease research.

During the 2015 Nevada legislative session, TFAD's efforts resulted in the passage of several bills and resolutions:

Senate Bill 196 aims to motivate physicians to update their knowledge of Alzheimer's disease dementias by

providing more flexibility on how they fulfill their continuing education requirements.

Senate Concurrent Resolution 2 encourages the Nevada Board of Medical Examiners, the State Board of Osteopathic Medicine, the State Board of Nursing, professional associations of healthcare providers and educational institutions to incentivize and promote dementia awareness and education of providers and first responders.

A portrait of LeeAnn Mandarino, a woman with dark hair, smiling, wearing a purple sleeveless top. The background is a blurred geometric pattern.

LeeAnn Mandarino

Senate Bill 177 (CARE Act) focuses on improving communication between hospitals and family caregivers so that the caregiver is notified when a loved one is discharged or transferred, and receives instruction on any aftercare required at home.

This is just the start of TFAD's advocacy to make Nevada a more dementia-friendly and resource-rich state. The Lou Ruvo Center for Brain Health is delighted to lend its expertise.

COMPLEX ROBOTIC UROLOGY SURGERY A FIRST IN LAS VEGAS

Last year, Cleveland Clinic Urology, Las Vegas, urologist Jayram Krishnan, DO, performed a complex kidney operation while sitting several feet from the operating table.

He was using the da Vinci robotic surgery system, which is commonly used to treat prostate cancer and other urological and medical conditions. Dr. Krishnan was the first surgeon in Las Vegas and at Cleveland Clinic Glickman Urological & Kidney Institute to use the robot to perform a bilateral nephrectomy, or removal of both kidneys at the same time.

Robotic surgery is the most minimally invasive surgical technique available — and the less invasive the surgery, the easier the recovery. Seated at a computer console, the surgeon operates the thin robotic arms, which have small surgical tools attached, while viewing the body magnified in three dimensions on a computer screen. The robotic arms

allow for the smallest possible incision and are steadier than a human arm.

“You have a better view of where you're operating and better access to body parts,” says Dr. Krishnan, who completed a fellowship in robotics and laparoscopy at the Glickman Institute in Cleveland, and routinely uses the robot to treat bladder, prostate and kidney cancer.

In this case, the patient was a woman, 55, who had had a kidney transplant two years earlier. Her kidneys had failed due to polycystic disease, which causes cysts to grow in various organs. As is usually the case, her “native” kidneys — those with which she had been born — had been left in her body because removing them



Jayram Krishnan, DO, guides the robot

is a difficult procedure. The cysts had grown again and the kidneys had become enlarged, causing severe back pain.

Dr. Krishnan has used the robotic system many times to remove one kidney, which prepared him to meet this surgical challenge of removing both cystic kidneys. He performed the procedure at Mountain View Hospital using the da Vinci Xi system, the newest model, which has features that save time and increase efficiency.

The enhanced technology of the robot was particularly beneficial because transplant patients have medical issues that make it difficult for them to withstand a lengthy operation and recovery. Dr. Krishnan and the surgical team completed the procedure in four hours compared with as long as six hours for conventional open surgery. The patient has recovered well and is no longer suffering from back pain.

“It was a technically demanding procedure that made innovative use of the da Vinci. Now we can offer this technology to more patients who need both kidneys removed,” says Dr. Krishnan.

► **Cleveland Clinic Lou Ruvo Center for Brain Health and Cleveland Clinic Urology, Las Vegas, share many patients. For more information on Dr. Krishnan and our Las Vegas urology services, call 702.796.8669.**



Jayram Krishnan, DO, in the operating room

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Laurie Larsen, MD



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Every life deserves world class care.

SHE BRINGS A HUMAN TOUCH TO IMAGING TECHNOLOGY

During more than 20 years as a nuclear medicine technologist, what has most amazed Elaine Pienschke is how much technology has changed.



Elaine Pienschke, center, at the Lou Ruvo Center for Brain Health with parents Vince and Judy Ariola



Elaine with Nelson Rubina and Laura Rogers, her imaging team

In 2015, Cleveland Clinic Lou Ruvo Center for Brain Health conducted its first Tau imaging. As Ms. Pienschke, Clinical Manager of Imaging, recalls, “By the time the drug arrived from California, it was late in the day when we finished with the patient. Yet, Drs. Charles Bernick and Jeffrey Cummings stayed in the imaging control room with me and were like little kids on Christmas morning.”

“I pulled the images up on my screen, and asked Dr. Cummings if they looked right to him. I knew we were all on this new frontier together when one of the world’s pre-eminent brain scientists replied that he had seen very few Tau images himself, because they’re that brand new! It gave me chills.”

Ms. Pienschke says she’s lucky to have had two such pioneering moments in her career. The first was in the early 1990s when PET imaging was new and she was among the first technologists in Chicago to use the scanner in a clinical setting.

“Back then, we did one PET scan every six months, and after five hours of data

collection and processing, the images were still really fuzzy,” she says. “Now, I complete more than a dozen PET scans in a week, and the images, which I can acquire in minutes, are clear and beautiful, allowing us on a molecular level to see the metabolic activity of cells.”

Ms. Pienschke’s profession fuses imaging technology, chemistry, physics — and what she sees as a calling for hands-on patient care.

“Patients who come for imaging are scared, angry, in denial,” she notes. “This building is about keeping memory alive but, ironically, my job is to help them forget all that. It’s incredibly rewarding for me when I’m able to make their experience as pleasant as possible under the circumstances.”

Over the years, Ms. Pienschke’s passion for patient care has become a family affair. She met her husband, Michael, when he was an imaging trainee in her department at Loyola University. The couple both accepted imaging jobs in Las Vegas, and moved to the city three years after her parents, who are now frequent attendees at the Lou Ruvo Center for Brain Health’s family education programs. Weekly Lunch and Learn sessions provide her parents, Judy and Vince Ariola, with insight into the dementia that ravaged Ms. Pienschke’s grandfather. Mrs. Ariola has been able to give back by participating as a normal control in the center’s research studies.

“My parents are the perfect example of embracing the available resources, which has helped my mom find closure with the disease her dad had,” says Ms. Pienschke. “And their experience at the Lou Ruvo Center for Brain Health has validated to me that the work we do is valuable to individuals and the community.”

BARBARA BRISCOE: A HALF-CENTURY OF PATIENT CARE

One of Barbara Briscoe's first memories is of nursing: "In early elementary school, one of my playmates was hospitalized with a chronic illness requiring frequent injections that really scared her.

I visited often, and the nurse began involving me in a plot to help calm my friend. I would wipe her down with rubbing alcohol and pretend to give the injection while the nurse did it herself. The trick worked; my friend didn't cry when she thought I was providing her care."

Retired from a 50-year nursing career in inpatient psychiatric units, Barbara Briscoe, BS, RN, has volunteered at Cleveland Clinic Lou Ruvo Center for Brain Health since 2009, spending most of her time greeting patients and escorting them to appointments. A veteran of compassionate healing, she says the feedback that volunteers receive from patients "is pretty tremendous. Patients arrive not knowing what to expect, often frightened of the unknown. Meeting a friendly face is welcoming, non-threatening and even reassuring."

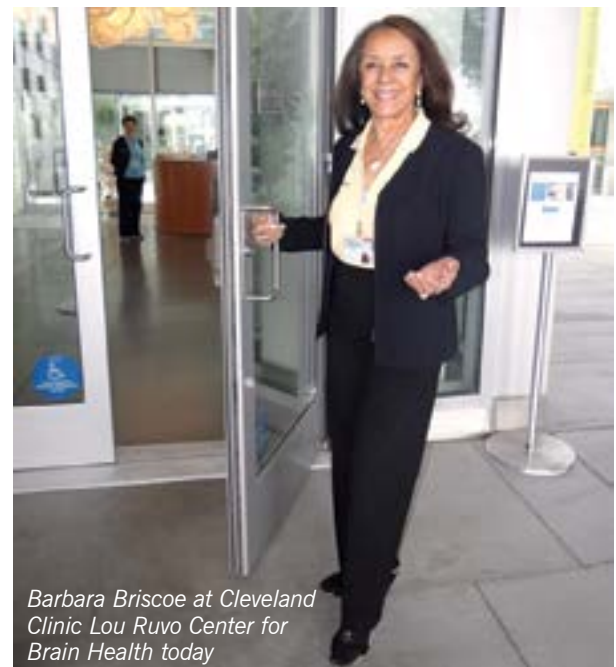
Ms. Briscoe, who grew up in the small town of Beaumont, Texas, when segregation was the norm, says her early days of

nursing weren't as comfortable. There was racial tension as the hospital in Missouri where she obtained her nursing degree began to desegregate. At her first job at a Veterans Administration hospital in Indiana, she witnessed psychiatric patients receiving then-standard shock treatment. As her career progressed at County General and Cedars-Sinai Medical Center in Los Angeles, so did the treatment of patients — with shock therapy giving way to new behavior-altering drugs and therapeutic activities such as exercise and occupational, group and music therapy.

"Because our hospital didn't have the money for supplies for occupational therapy, I decided to go out in the community and ask for donations," Ms. Briscoe recalls. "I became very comfortable asking for the benefit of patients, securing vans full of donations — from plants and holiday decorations to fabric and sewing machines for therapeutic activities."

Ms. Briscoe moved to Las Vegas in 1996 and began work at Southern Nevada Adult Mental Health. After "flunking retirement twice," she now focuses on expanding her philanthropy by volunteering with organizations that speak to her heart. She has earned commendations from the American Red Cross and from numerous mental health agencies and AIDS organizations. She practices yoga, tai chi and piano; plays cards; and participates in a book club. A travel lover, she views a 2015 trip to Cuba as a highlight. Ms. Briscoe's daughter, Kim, is a playwright in Los Angeles, while grandson Miles is a little league coach in Mill Valley, California.

► If you're interested in volunteering at the Lou Ruvo Center for Brain Health, contact Karen Mariano, Administrative Program Coordinator for Volunteer Services, at 702.331.7046 or mariank@ccf.org.



ART EXPANDS AS THE MIND DEGENERATES

When Beecher Trail came to Cleveland Clinic Lou Ruvo Center for Brain Health in May 2013, the 58-year-old construction industry sales representative had become socially withdrawn, had developed difficulties speaking, was newly obsessed with cleanliness, and devoured milkshakes and candy bars.

As director of the Frontotemporal and Young-onset Dementias Program, Gabriel Léger, MD, had seen this kind of transformation before. “Beecher Trail’s behavior and speech difficulties were characteristic of frontotemporal degeneration,” he says. After a comprehensive evaluation — including MRI and PET scans, neurological and cognitive testing, and a neuropsychological assessment — Dr. Léger diagnosed Mr. Trail with frontotemporal degeneration (FTD) and primary progressive aphasia (PPA), a form of the disease affecting speech.

The most common form of dementia in people under 60, FTD affects the frontal and temporal lobes of the brain — areas associated with organizational ability, self-control, emotional responsiveness, judgment and language. People with FTD typically develop major changes in

behavior and personality, such as those exhibited by Mr. Trail. Currently, no effective treatment exists that can slow or stop progression of the disease.

His illness cost Mr. Trail his job, and he became depressed. “FTD patients often fall down the career ladder because employers don’t realize that their difficulties are due to a brain illness,” says Dr. Léger.

To lift her husband’s spirits, Nancy Trail enrolled him in a watercolor class she had attended for years. “Sometimes, he can paint three watercolors in an hour; it is the one thing in his life that makes him happy,” says Mrs. Trail.

“Painting has become a passion for Beecher, and he has produced some beautiful watercolors. Art is a therapeutic way for FTD patients to channel their obsessiveness,” says Dr. Léger. “In addition, possibly because of their brain changes, some patients with FTD develop new artistic abilities, just like Mr. Trail has.”

Today, Mr. Trail lives in a memory care facility, where he continues to find solace in art and spends hours painting. He still sees Dr. Léger, and Mrs. Trail attends an FTD support group at the Lou Ruvo Center for Brain Health.



“I think Dr. Léger is the best doctor in the world. He helped me understand what was happening to my husband, so I didn’t feel alone with a disease I’d never heard of before. Through the support of everyone at the center, I’ve learned how to manage his condition,” says Mrs. Trail.



The Lou Ruvo Center for Brain Health has an art program for individuals with memory problems (*see article on page 26*). To learn more, visit keepmemoryalive.org/socialservices.



CREATING ART AND PLEASANT MEMORIES

Are you looking for a fun activity to enjoy with a family member or friend who has a neurodegenerative disorder? Join the “Art Explorations – Art Therapy” sessions held monthly at Cleveland Clinic Lou Ruvo Center for Brain Health.

A popular program at Cleveland Clinic’s main campus, “Art Explorations – Art Therapy” launched in Las Vegas last August. It serves as a recreational outlet for patients accompanied by a family member or friend, and offers an opportunity for cognitive stimulation and self-expression.

Participants are welcomed by a visiting board-certified art therapist, Lea Lucibella, ATR-BC, who plans a new assignment for each class. The aspiring artists find tables covered with art supplies within easy reach. After a brief introduction, class members delve into the creative process. Very quickly, the room fills with friendly chatter and bursts of laughter.

Toward the end of each session, participants name their work, and many share thoughts on how it felt to make their art. When it’s time to go, they leave bearing their creations and proud smiles.

One month, participants made “happiness collages” that depicted pleasant memories from their lives. At another session, they drew pictures and painted in watercolor.



Each month’s program is a new adventure, with people surprising themselves and one another with colorful creations.

At the center’s December 16 patient and family holiday party, class artwork was displayed to the delight of guests and the proud artists.

► “Art Explorations – Art Therapy” is offered at no charge on the second Monday of each month from 4 to 5:30 p.m. Reservations are requested: 702.483.6055 or by email at louruvosocialserv@ccf.org.



Pieces created by Art Explorations participants



MUSIC REACHES HEART AND MEMORY



Enthusiasm soared inside the Keep Memory Alive Event Center on July 8. That day, a special Lunch & Learn program convened to celebrate the connections between music and memory. The songs played by the D. Gause Ensemble were chosen from requests from patients, their families and friends who frequently attend Cleveland Clinic Lou Ruvo Center for Brain Health's Patient and Caregiver programs.

Requests spanning many decades and genres were arranged by D. Gause, PhD, a musician, teacher and advocate for the Lou Ruvo Center for Brain Health.

Dr. Gause created an ensemble with three gifted students from the College of Southern Nevada: Isaac Berk on drums,

Carlos Holguin on bass and Louis Syrový on guitar. Gerry Errante, a well-known Las Vegas clarinetist, joined in on several numbers, highlighted by a Benny Goodman favorite.

So enthusiastic and responsive was the audience that Dr. Gause agreed to return with her ensemble for the Lou Ruvo Center for Brain Health's patient and family holiday party in December.

Dr. Gause's generous sharing of her musical talent is representative of several contributions she has made to our programs. She championed the addition of an e-library to the Lynne Ruffin-Smith Library collection so patients and caregivers across Nevada can access reliable information about the neurodegenerative illnesses they are facing.

► E-mail us at LouRuvoSocialServ@ccf.org to join our mailing list and ensure you don't miss out on any of the Lou Ruvo Center for Brain Health's Patient and Caregiver programs.

CLASSES OFFER **POWERFUL TOOLS** TO CAREGIVERS

This past summer, Cleveland Clinic Lou Ruvo Center for Brain Health launched a six-week class called “Powerful Tools for Caregivers.” Participants have given it high marks: “I can’t begin to tell you what a wonderful, positive thing it has been for my life,” one class member wrote.

Self-care is critical to managing the challenges of being a caregiver. Many caregivers begin to neglect their own needs as their caregiving role expands, which is an important concern of the Lou Ruvo Center for Brain Health’s medical team. “Powerful Tools” puts the focus on the family caregiver rather than the family member receiving care.

Diane Meireis, Jo Hutson and Randy Bolsinger — three family caregivers of Lou Ruvo Center for Brain Health patients — co-facilitate the recurring class. Because they have struggled through the topics presented, they bring first-hand experiences and credibility to every tool they introduce.

The next “Powerful Tools for Caregivers” will be on Tuesdays, February 2 – March 8, from 10:30 a.m. to 1 p.m. To register for this free class, please call 702.778.6702 or email louruvosocialserv@ccf.org.



HEALTHIER LIVING

We also offer “Healthier Living,” another six-week, volunteer-led program featuring tools designed to make life easier and better for those living with chronic illness. “Healthier Living” was developed by the Stanford University School of Medicine. This free class is next scheduled for Fridays, January 15 – February 19 from 12:30 to 3 p.m. To register, please call 702.778.6702 or email louruvosocialserv@ccf.org.

BRUNCH WITH THE **BOCELLIS**



Larry Ruvo, Sculptor Gualtiero Vanelli and Andrea Bocelli

Keep Memory Alive supporters joined Veronica and Andrea Bocelli December 6 as they unveiled a magnificent sculpture of Andrea Bocelli, "Omaggio a Andrea Bocelli." The life-sized sculpture of Carrara marble is from the same quarry as Michelangelo's "David," and was carved using a sophisticated robotic milling system followed by traditional hand finishing. Sculptor Gualtiero Vanelli says, "For me, art and technology are in the DNA of this marble."

The piece was purchased for installation at Cleveland Clinic Lou Ruvo Center for Brain Health by Keep Memory Alive Chairman and founder Larry Ruvo, who says, “When we touched the piece together, Andrea’s face lit up and he looked at me and said, ‘It is really a work of art; I am so proud.’”

Chefs Luciano Pellegrini, Alex Stratta and Benoit Cornet prepared a delectable Italian brunch featuring Urbani truffles and wine pairings from Bocelli Family Wines. The surprise highlight of the event was Andrea Bocelli taking to the stage and singing “Ave Maria” for the intimate audience of 120 guests.

For family caregivers at the Lou Ruvo Center for Brain Health, the legacy of this brunch will live on through the Rolando Brunelli Caregiver Program.



Guests enjoyed a fashion show by Camille Flawless (celebritydresses.biz), whose collection was inspired by the Frank Gehry-designed Lou Ruvo Center for Brain Health

THE ROLANDO BRUNELLI CAREGIVER PROGRAM

Thanks to generous support from Veronica and Andrea Bocelli and guests at the brunch where the couple appeared, the Rolando Brunelli Caregiver Program at Cleveland Clinic Lou Ruvo Center for Brain

Health will enrich the lives of hundreds of caregivers. Named in honor of Veronica Bocelli’s grandfather, who succumbed to Alzheimer’s disease, the program acknowledges that family caregivers — isolated at

home while providing essential care to individuals with declining cognition — are as much victims of the disease as are the patients themselves.

Through music, art and a range of creative activities, this new program will enhance the relationship between caregiver and patient, allowing caregivers to experience their care partners in a different way. Caregivers will receive the guidance to engage in creative activities designed to transform their lives and those of the loved ones for whom they care.

► Information on family caregiver programs available at the Lou Ruvo Center for Brain Health is online at keepmemoryalive.org/socialservices, or contact LouRuvoSocialServ@ccf.org to join our mailing list.

Rolando Brunelli



NEVADA GRANT ENHANCES DELIVERY OF FAMILY SERVICES

By LeeAnn Mandarino, MA

Cleveland Clinic Lou Ruvo Center for Brain Health has been awarded \$138,000 from the State of Nevada Aging and Disability Services Division (ADSD) for caregiver and outreach education, social services and telehealth.

This grant enables the center to continue to provide a dynamic environment of learning and care for patients and their family caregivers through Lunch & Learn programs, Art in the Afternoon, Cleveland Museum of Art and Art Explorations – Art Therapy (see article on page 26) classes. These programs provide a safe, caring place for individuals affected with neurodegenerative diseases to learn how to cope and even thrive, despite the disorders that afflict them.

The grant funding also amplifies support of the center's Lynne Ruffin-Smith Library. The library contains one of the most comprehensive collections of caregiver resources as well as a generous assortment of books on Alzheimer's, Huntington's and Parkinson's diseases and multiple sclerosis. Recently, the Lou Ruvo Center for Brain Health implemented the e-library (keepmemoryalive.org/library), which allows patrons to borrow books electronically — an especially important tool for individuals who are homebound due to a disorder or caregiving responsibilities.

Additionally, the grant enhances the care provided by the center's social workers and psychologists through one-on-one counseling sessions and weekly support groups. "This grant supports a place where patients and caregivers can express their feelings with feedback from professionals," says Jenna Clifford, MSW,



Art in the Afternoon program

LCSW, Supervisor of Clinical Social Work. "It is very important for people to realize they are not alone in this journey. Others who have walked the same path have made it through the pain and confusion, and we're here to help."

The ADSD grant is a gift for the entire state, supporting the Lou Ruvo Center for Brain Health's telehealth program that connects people with degenerative brain disease in Elko, Nevada, to providers in Las Vegas, who render diagnoses and treatments via videoconference. This

program provides patients first-rate care based on evidence from the latest research advances, while encouraging collaboration among healthcare providers.

► **For patients in rural communities where neurology specialists are scarce, the convenience of seeing a Cleveland Clinic medical professional in real time, without costly travel and time expenditures, is invaluable. For information on making a videoconference appointment in Elko with a Lou Ruvo Center for Brain Health physician, call 775.738.0100.**

ELAINE P. WYNN & FAMILY FOUNDATION GIFT EXPANDS RESEARCH

With a generous contribution from the Elaine P. Wynn & Family Foundation, Cleveland Clinic Lou Ruvo Center for Brain Health is embarking on an ambitious study to advance understanding of Parkinson's disease (PD) and develop new ways to improve diagnosis, predict symptom development and track response to treatment.

The study is innovative in its simultaneous use of multiple types of magnetic resonance imaging (MRI) to evaluate brain structure, function and blood flow in individual patients, and represents a comprehensive approach to examining the Parkinsonian brain. Cognitive impairment, which in PD patients can affect memory, attention, and the ability to organize and act on information, is a major focus of the study.

“This study will use cutting-edge brain imaging techniques that we are developing here at the Lou Ruvo Center for Brain Health Neuroimaging Program, led by Dr. Dietmar Cordes. Brain imaging is a powerful technique for understanding and exploring brain structure and function that has the potential to become a tool for diagnosing Parkinson's disease. This is essential to not only improve our understanding of PD, but also to improve our ability to treat it,” says Ryan Walsh, MD, PhD, Director, Parkinson's Disease and Movement Disorders Program and Lee Pascal Parkinson's Disease Scholar.

Study participants will include people aged 50 to 80 who have PD with and without cognitive impairment as well as a group of healthy controls. Over the course of the four-year study, participants will undergo MRI scans in a resting state and while watching a video that activates areas of the brain that control movement and language and are affected by PD. “We want to find out what is happening in the brains of PD patients who develop cognitive impairment and those who don't, so we can



Ryan Walsh, MD, PhD

improve our ability to detect and treat these symptoms,” says Dr. Walsh.

The study will also investigate whether brain training exercises can improve cognitive ability, in collaboration with Sarah Banks, PhD, ABPP/CN, Head of Neuropsychology. Participants will complete a computer-based brain training program and will have brain imaging before and after the training to assess its impact on brain function.

“It's exciting that we now have the expertise at the Lou Ruvo Center for Brain Health to conduct such a novel, comprehensive and multidisciplinary study that involves cutting-edge imaging and analyses,” says Dr. Walsh. “The Wynn Foundation has made it possible

for us to build our neuroimaging capabilities, expand our research staff and collaborations, and chart a new scientific course that we hope will ultimately improve the lives of people with Parkinson's disease.”

The donation supporting Dr. Walsh's research honors Elaine Wynn's mother, Lee Pascal.

YOU, TOO, CAN HELP

Gifts of all sizes can make a difference. If you're interested in supporting research at the Lou Ruvo Center for Brain Health, please contact our development team at 702.263.9797 or DonateNevada@ccf.org.

A COUPLE'S GIFT OF LOVE AND SUPPORT

Stacie Mathewson firmly believes that giving is a sign of love, so she was deeply touched when husband Chuck Mathewson's wedding gift to her was a donation to Cleveland Clinic Lou Ruvo Center for Brain Health in her parents' honor.

Seeing friends affected by Parkinson's disease, Mr. Mathewson had previously supported the center, but "After seeing my mom develop Alzheimer's at such a young age, Chuck embraced the cause even more strongly," Mrs. Mathewson explains.

The family first became concerned about her mother's memory in 2002, when they noticed that Sheri Irvine, then 58, was unable to find her way out of the parking lot of the church she had attended for years. Her memory quickly declined; in 2014, she died of Alzheimer's disease.

Mrs. Mathewson says it was very difficult seeing her mother lose her dignity, but "Coming to Cleveland Clinic in Las Vegas brought a lot of hope. You always want the best for your family members, and that's what we got."

She and her husband, who retired as IGT Chief Executive Officer, hired round-the-clock caregivers to augment care and create some downtime for Mrs. Mathewson's siblings and father, Tom, while honoring Mrs. Irvine's wish to remain in the family home.

"I always say Chuck is a guardian angel," Mrs. Mathewson says. "He came into my life at a time when I wouldn't have been able to help my mom in the same way. Together, we were able to provide a huge gift by establishing a care system around her."

The Mathewsons have also put the "fun" in fundraising for the Lou Ruvo Center for Brain Health. They routinely attend the center's events, including the annual Power of Love™ gala and the July rodeo on the shores of Lake Tahoe. They have secured winning auction bids from cars to trips, with the most memorable prize being a trip for 10 to Italy and France aboard casino resort owner Steve Wynn's yacht.

"Chuck and I believe it's important to support Keep Memory Alive because we know it's on an upward trajectory," Mrs. Mathewson says. "Brain health has one of the best champions of the world in Keep Memory Alive's Larry Ruvo, who devotes his entire life to bettering the world for others and is making a huge difference."

Stacie and Chuck Mathewson



► Gifts large and small alike can amplify the fight against brain disorders. If you're interested in supporting the Lou Ruvo Center for Brain Health, please contact our development team at 702.263.9797 or DonateNevada@ccf.org.

BEING THERE FOR THOSE WHO MATTER: **RHONDA AND DON CARANO**

As her late mother struggled with Alzheimer's disease, Rhonda Carano saw firsthand how people can lose their dignity and self-esteem. As she expresses it, "You hate to see a loved one be diminished in their capacity."

Mrs. Carano's experience reaffirmed her commitment to Keep Memory Alive. She and her husband, Don, are always there for the organization, be it offering financial support, attending events or donating wine from Ferrari-Carano Vineyards and Winery. On numerous occasions, the couple has enjoyed the Power of Love™ gala and Keep Memory Alive's annual weekend in Tahoe, as well as private dinners with chefs Emeril Lagasse and Todd English, won at auction. One of Mrs. Carano's favorite memories is of Andrea Bocelli at the 2015 gala: "Listening to him sing live at the Power of Love brought back so many good memories of my mother, who used to play his album over and over."

What the couple most enjoys about Keep Memory Alive's events, says Mrs. Carano, is "the camaraderie of hope."

There are the entertainers and auctions, food and fun, but of course the goal is to find a cure. Today, Alzheimer's is like cancer: Most every family has a member who has been a victim, but research can change that. Don and I will do anything we can do to support the research, technology and education of others to reduce the pain families endure due to brain disease."

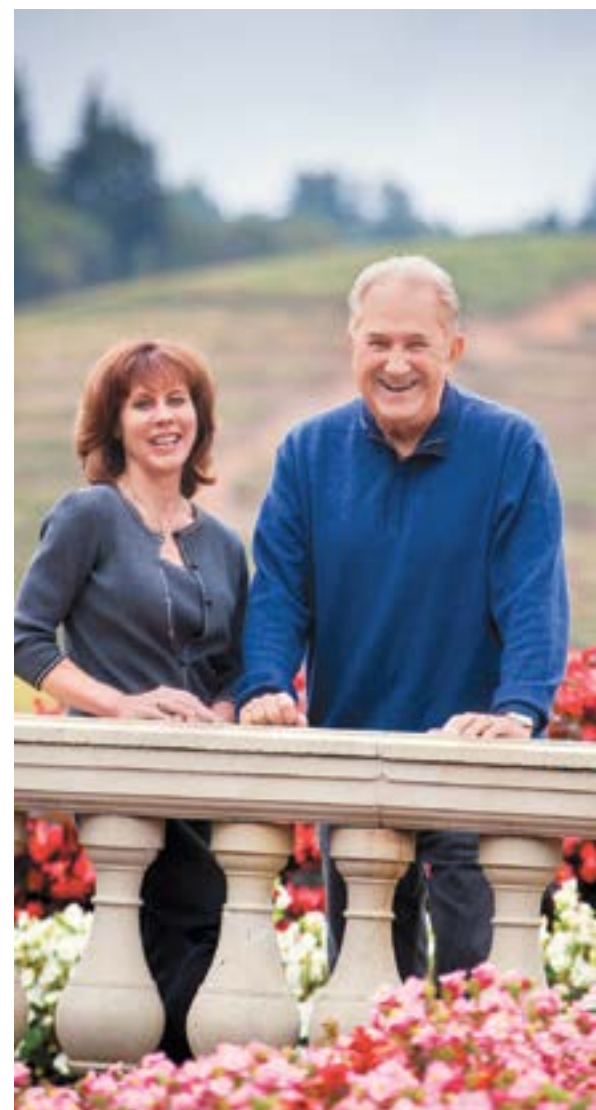
The Caranos regard Cleveland Clinic Lou Ruvo Center for Brain Health as a tremendous resource in their home state of Nevada. Having visited Cleveland Clinic's main campus in Cleveland, where Mrs. Carano says she "had everything checked from ears to toes" during an executive physical, she found the environment "amazingly hospitable, with art throughout and a breadth of medical specialties."

Seasoned hospitality executives and owners of hotels and casinos across the country, the Caranos were impressed by how Cleveland Clinic cares about its patients and strives to meet their needs. The couple believe, "It's genuine. When you're there, you're at home. Cleveland Clinic does what it can to make the medical experience pleasant."

On a more personal note, Mrs. Carano's advice for anyone with a loved one with Alzheimer's disease is simple: "Be there for them. Even if they don't seem to recognize you, they need to know they have someone to depend on."



Rhonda Carano with father Dario Bevilacqua and mother, Norma



Rhonda and Don Carano

A TOAST TO THE **GENEROUS SPIRITS** WHO HELP KEEP MEMORY ALIVE

Events are chief among Keep Memory Alive's fundraising tactics. We host many ourselves, but are also the grateful beneficiary of like-minded individuals and organizations that host events themselves and direct the proceeds in support of Cleveland Clinic Lou Ruvo Center for Brain Health. We're equally indebted to creative people who develop new sources of support for our work.



Bill Bradley celebrates his winning hand with wife Sheri

HUNDRED ACRE POKER TOURNAMENT

Hundred Acre winemakers Jayson and Helen Woodbridge again opened their hearts and home to host one of Keep Memory Alive's highly anticipated events, the Keep Memory Alive Hundred Acre Poker Tournament. Fifty lucky guests from around the world converged on the Hundred Acre Winery and Solage Inn in Napa Valley, California, for the tournament, all in the name of raising funds to further the mission of the Lou Ruvo Center for Brain Health.

A special venue in a picturesque setting, the stone terrace overlooking the vineyard accommodated poker-playing guests. They dined on gourmet food prepared by the talented chefs at the winery and drank its acclaimed 100 point wines. Long-time Keep Memory Alive friend and supporter Bill Bradley was the winner of the tournament, claiming the prize of a nine-liter bottle of Hundred Acre wine valued at \$126,000. Cheers to Jayson and Helen Woodbridge and the chefs and staff of Hundred Acre Winery for helping to make the event a huge success.



SIP & SAVOR

Spago at the Forum Shops at Caesars Palace hosted Sip & Savor, with proceeds once again benefiting Keep Memory Alive. The September 16 mix-and-mingle, dine-around style event was a great success, with more than 250 guests attending.

Chef Eric Klein says, “As a chef and restaurateur, my business is creating memories. Memory is critical, and Keep Memory Alive is a great cause that chef Wolfgang Puck and partners Tom Kaplan and David Robins have led Spago in being a part of for years.”

Larry Ruvo with Spago's Executive Chef Eric Klein and General Manager Lukas Pesek

DIANE KEATON

In October, Diane Keaton launched a collection of red and white wines that harken back to her days as a young actress living in a non-air conditioned apartment in New York. As the legend goes, she would escape to the balcony in hopes of finding a soothing breeze and, while she was there, her beverage of choice became a glass of wine over refreshingly cool ice. Over the years, Ms. Keaton's wine preference has become storied, with Ellen DeGeneres welcoming her onstage with a glass of wine over ice, which the talk show host dubbed “The Keaton.”

Fast forward to 2015. The Keaton, a wine collection consisting of a California red and white, is designed to be served over ice. Announcing the brand on Twitter, Ms. Keaton posted a picture of her red wine and wrote, “It's here. Don't forget the ice. Cheers.”

More importantly, don't forget that a portion of the sales benefits Keep Memory Alive and the Lou Ruvo Center for Brain Health.

“Diane Keaton knows firsthand what it's like for family members of those suffering from the neurocognitive disorders we here at Cleveland Clinic Lou Ruvo Center for Brain Health are battling. We are honored that she's helping us in that fight through her new wine, The Keaton. We will be toasting her and her generous spirit, over ice, of course!” says Director Jeffrey Cummings, MD, ScD.

Look for The Keaton at your local wine retailer, and thank you for supporting Keep Memory Alive.



A PENNY FOR YOUR THOUGHTS PROGRAM **ENGAGES STUDENTS AND THE COMMUNITY**

Keep Memory Alive's A Penny for Your Thoughts™ is a grassroots fundraising initiative that encourages anyone of any age to donate — no matter the amount.

We can teach our community that every penny counts toward keeping memory alive and that small change can add up to big differences. A Penny for Your Thoughts is also an educational program to teach students and their families about philanthropy and the medical resources of Cleveland Clinic Lou Ruvo Center for Brain Health.

In November 2015, two Las Vegas middle schools, Sig Rogich and Victoria Fertitta, squared off in a challenge to see which school could collect the most spare change in a single minute to fight brain disease. To kick off the program and educate the

students on brain health, the Lou Ruvo Center for Brain Health's Dylan Wint, MD; Samuel Hickson, LSW, MSSA; and Education Coordinator Susan Farris spoke at each school. In addition, a group of students from Victoria Fertitta toured the Lou Ruvo Center for Brain Health and enjoyed a luncheon.

"The Miracle Minute" fundraiser on November 19 was a wild success, with students at the two schools donating a total of \$10,000 in spare change in a single minute. Sig Rogich students won the challenge by a small margin, thereby obliging Lisa Burkhead, Principal of Victoria Fertitta Middle School, to wear the Sig Rogich school colors of teal and purple for an entire day. Suzie Harrison, Principal of Sig Rogich, said her students celebrated with a doughnut party. Students at both schools embraced A Penny for Your Thoughts and have made a huge difference for those suffering from brain disease.

WHO CAN HELP

Do you know a business or school that would like to help? Please ask them to contact us at 702.263.9797 or penny@keepmemoryalive.org. With the support of our community friends and partners, we can all Keep Memory Alive.

A Variety of Partnership Options

- **Casino and Retail Program:** Place donation boxes on the sales floor to encourage guests to donate spare change to a worthy cause.
- **Restaurant Program:** Allow guests to round up their checks and donate the extra funds to Keep Memory Alive.
- **Employee-to-Employee Initiative:** Issue a challenge to business owners to engage employees through a company-wide giving campaign.
- **School-Based Program:** Issue a challenge to students to contribute spare change to the school's collection box.

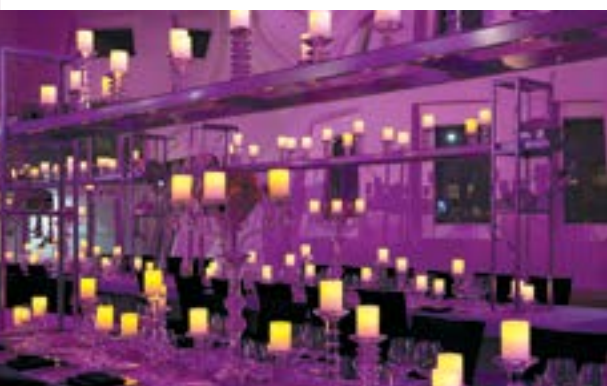
You can participate in A Penny for Your Thoughts anywhere, anytime. Give online at keepmemoryalive.org/penny.



Keep Memory Alive Vice Chairman Camille Ruvo and the Lou Ruvo Center for Brain Health's Samuel Hickson and Dylan Wint, MD, visit with a student from the winning school, Sig Rogich



Fertitta students take steps towards better brain health by visiting the Lou Ruvo Center for Brain Health



THE PERFECT SPOT FOR CREATING AND CONSERVING MEMORIES

When clients rent the Keep Memory Alive Event Center, they create lasting memories for hosts and attendees alike, with world-class amenities in a one-of-a-kind venue.

In addition, the proceeds support research and treatment at Cleveland Clinic Lou Ruvo Center for Brain Health. So, each unforgettable event helps others remember.

Clients' reasons for hosting events at the Keep Memory Alive Event Center range from the awe factor of the Frank Gehry-designed steel architectural wonder, to the venue's flexibility in creating myriad event vignettes, to its state-of-the-art technology. But most are moved by the purpose behind the event center. Some have been personally impacted by loved ones with brain disorders, so hosting an event at the center is their way of giving back.

Some clients go above and beyond, with creative methods for raising additional

funds for the Lou Ruvo Center for Brain Health. A bride and groom donated all of the money from their culture's traditional "money dance," while healthcare company BUPA proudly unveiled a company-sponsored plaque in the event center's garden at BUPA's annual event.

The event center continues to expand its offerings and earn recognition as a unique venue. New grass has been added to the Frank Gehry-designed desert oasis garden, creating a lush landscape for outdoor parties. In 2015, the event center was awarded the Wedding Industry Professionals Association Venue of Excellence for creating breathtaking backdrops for ceremonies and receptions.

Whatever your reason or occasion for hosting an event at the Keep Memory Alive Event Center, you'll make precious memories while helping preserve memory for those struggling with brain disorders. You, too, can help fund pursuit of a cure.

► **More information and a preview of the space are online at KMAEventCenterlasvegas.com.**

MOVING TOGETHER TOWARD A CURE

At Cleveland Clinic Lou Ruvo Center for Brain Health, we're fortunate to be headquartered in Las Vegas, a city with vibrant affiliates for two of the diseases we treat: Alzheimer's and Huntington's. We enjoy a strong collaboration with these organizations as we work to raise awareness and funds and to address the science that will lead to cures.

Walk to End Alzheimer's

On October 24, more than 100 volunteers, staff and friends of the Lou Ruvo Center for Brain Health gathered at Town Square for the Alzheimer's Association's annual Walk to End Alzheimer's. Team Ruvo proudly donned shirts emblazoned with a rendering of our iconic Frank Gehry building and our work's mission: the brain. Center Director Jeffrey Cummings, MD, ScD, addressed the crowd, saying, "We're here to create a world without Alzheimer's."

Karen Mariano, Administrative Program Coordinator for Volunteer Services, recalls, "People came to our booth and asked about the Lou Ruvo Center for Brain Health's caregiver programs and support groups. The event was a great opportunity to share with the local community the resources we can provide. Together, we were one united group of people rallying around a common interest: making life better for those with Alzheimer's."



Huntington's Disease Society of America Las Vegas Team Hope Walk

Team Ruvo gathered at Craig Ranch Regional Park October 4 for a walk to help the Huntington's Disease Society of America support individuals, families and Cleveland Clinic patients living with Huntington's disease.

"At the Lou Ruvo Center for Brain Health, we're proud to support the Huntington's Disease Society of America. It provides so many valuable resources to our local Huntington's community," says Brent Bluett, DO. "This walk was a great opportunity to show our support and dedication to those affected by this disorder."

RUVOS HONORED WITH BOCELLI HUMANITARIAN AWARD

At the Accademia Gallery in Florence, underneath Michelangelo's "David," Camille and Larry Ruvo received the Veronica and Andrea Bocelli Award for the persistent work they have done in brain health, making a difference through Keep Memory Alive and Cleveland Clinic Lou Ruvo Center for Brain Health.

When presenting the award, the Bocellis said:

"Love is the portentous secret joining Larry and Camille and their Lou Ruvo Center for Brain Health. The center is a miracle of love and intelligence, of visionary imagination and concreteness. It is a cutting-edge facility where brain illness can finally be challenged, thanks to early recognition.

When we love and let the others love us, even the most ambitious challenges can turn into extraordinary realities. To Larry and Camille Ruvo, to this wonderful, exceptional couple, who follow simply but stubbornly the road of good, and who are capable of giving vitality to dreams, to turning dreams into actions through a constant commitment to philanthropy, as a sign of our admiration

and gratitude we are very pleased to give the Veronica and Andrea Bocelli Humanitarian Award."

The Ruvos were accompanied by friends and Keep Memory Alive supporters last September on a fundraising trip to Italy (see *article on page 5*). The couple was caught off guard by this award that recognizes what they do every day: Try to help find a cure for brain diseases, including Alzheimer's, Huntington's, Parkinson's, multiple sclerosis and multiple system atrophy.



VISITOR PHOTO GALLERY

**KELLY AND DANNY PETTIT**

During his 14 years at JDS Uniphase, Danny Pettit took the company public and helped grow its market valuation from \$5 million to \$125 billion as its presence in fiber optics expanded. After retirement, he owned an Indy Car race car team. Inspired by the beautiful azure Mediterranean Sea, in 2014 Mr. Pettit launched Azzurre Spirits, the first American blended vodka and gin made from apples, wine grapes and sugar cane.

Now residing in Las Vegas, Mr. Pettit and his wife, Kelly, visited Cleveland Clinic Lou Ruvo Center for Brain Health in October. They presented a check and affirmed their commitment in yet another sector: brain health.

“When we met Larry Ruvo through our leadership of Azzurre Spirits, he told us about the clinic named in honor of his father, Lou,” says Mr. Pettit. “We had watched my mother struggle and fade away due to serious brain disease. With three daughters and four grandchildren, we are committed to making a difference in brain health for our family and for all.”



Larry Ruvo, left, welcomes U.S. Congressman David Joyce (R)





Marcia and Ivan Lambert, right, accompanied by family, unveil their paver in our center's garden



David Weinreb and Ana Laspetkovski



R.T. Smith visits with the Lou Ruvo Center for Brain Health's Director of Philanthropy, Juliana Pisani

REMEMBERING LYNNE RUFFIN-SMITH

In making a donation in honor of his late wife, Lynne Ruffin-Smith, R.T. Smith was looking for an organization that matched her personality, style and interests. Upon touring Cleveland Clinic Lou Ruvo Center for Brain Health and meeting with Director Jeffrey Cummings, MD, ScD, Mr. Smith made his philanthropic decision. He explains, "Everyone at the center is courteous, friendly, passionate about their work and happy to answer every question. The experience is at once hospitable yet understated."

Just like Lynne Ruffin-Smith. Described by those who knew her as a "class act," she enjoyed good food, good fun and a good laugh. Mrs. Smith enjoyed the arts, served on library boards and passionately read a book a day.

In 2014, Mr. Smith chose to honor Lynne by naming the library at the Lou Ruvo Center for Brain Health the "Lynne Ruffin-Smith Library." In 2015, he expanded his gift to support the flower with which each patient is presented upon leaving the Lou Ruvo Center for Brain Health.

Mr. Smith says, "The center has all the answers. It's a total package. When you give there, you know patients will be taken care of."

RECOGNIZED FOR EXCELLENCE

In recent months, Cleveland Clinic Lou Ruvo Center for Brain Health employees have been honored by their community, peers and professional associations for clinical excellence and leadership in their fields.

We celebrate their accomplishments.

2016 Oldendorf Award

(American Society of Neuroimaging, January 2016)

For his abstract: "Predicting Cognitive Impairment in Active Professional Fighters Using Multimodal MRI"

Virendra Mishra, PhD

MRI Research Engineer



Virendra Mishra, PhD

Caregiver Excellence Award

(Cleveland Clinic, Q4 2015)

Marsha Park, RN,

Nurse Manager

Regina Tumang, RN,

Care Coordinator

Neurorehabilitation Team:

Jason Longhurst, Trevor Mahoney, Shaina Meyer, Jennifer Nash, Matthew Plourde and Christy Ross



Regina Tumang, RN



Marsha Park, RN

Second place, poster competition at the CurePSP 2015 International Research Symposium

(CurePSP, November 2015)

For his poster: "Understanding, Predicting and Preventing Falls in Progressive Supranuclear Palsy"

Brent Bluett, DO

Staff Neurologist, Movement Disorders

Top Tech Exec Awards Las Vegas 2015

(Vegas/NC, November 2015)

Health category for the HealthyBrains.org initiative

Kate Zhong, MD

Senior Director, Clinical Research and Development



Neurorehabilitation Team

Inspired Excellence in Healthcare

(Las Vegas HEALS, October 2015)

Dylan Wint, MD

Director, Education in Neurodegeneration

**Shining Star Award,
2015 Physician Assistant Week Awards**

(Cleveland Clinic, August 2015)

Michelle Thompson, PA-C

Physician Assistant

Director's Award

(Cleveland Clinic, 2015)

Jennifer Nash, PT, DPT, NCS, CEEAA

Manager, Neurorehabilitation



Michelle Thompson, PA-C



ANDRE MACHADO, MD, PHD, HEADS NEUROLOGICAL INSTITUTE

In his new role as chairman of Cleveland Clinic's Neurological Institute, Dr. Andre Machado will oversee 300-plus specialists — including those at Cleveland Clinic Lou Ruvo Center for Brain Health — who complete nearly 175,000 outpatient visits and perform more than 9,500 surgical/

interventional procedures a year. Dr. Machado succeeds Keep Memory Alive Board Member Michael Modic, MD, who now serves as Cleveland Clinic's Chief Clinical Transformation Officer.

Formerly Director of Cleveland Clinic's Center for Neurological Restoration, Dr. Machado has earned international acclaim for his work in deep brain stimulation and neuromodulation. He performs deep brain stimulation surgery for patients with Parkinson's disease, tremors, dystonia and obsessive-compulsive disorder, and other surgical procedures for patients with trigeminal neuralgia, intractable pain syndromes and spasticity. Under Dr. Machado's direction, the Center for

Neurological Restoration has excelled in clinical activities related to movement disorders, chronic pain and headaches, as well as functional and stereotactic neurosurgery, deep brain stimulation and other forms of neuromodulation.

"It is humbling to be given this opportunity to lead one of the best neurology and neurosurgery programs in the world," says Dr. Machado. "Our staff has a unique passion and dedication to our patient population. It is an honor to work alongside our staff and further the care for our first priority, patients."

Dr. Machado is also deeply engaged in research and innovation. His research into deep brain stimulation for thalamic pain syndrome won the National Institutes of Health Director's New Innovator Award.

"Neurological disorders are a major burden in society, and this burden will increase in the next decades," says Dr. Machado. "It is imperative that we research new therapies and innovate in models of care that will meet the demands of the nation. Education is also a critical part of our mission as we need to train the workforce of the future."

BILL BOYD TO RECEIVE COMMUNITY LEADERSHIP AWARD AT THE POWER OF LOVE™ GALA

"I'm proud to announce that legendary gaming figure, business leader and philanthropist Bill Boyd will be honored with the Keep Memory Alive Community Leadership Award May 21 at the 2016 Power of Love gala," says Keep Memory Alive Chairman and Founder Larry Ruvo. "Bill Boyd is one of the most honorable and finest gentlemen I have met in my business career."

"Alongside our other honoree, Tony Bennett, Bill Boyd exemplifies how important it is to stay busy as one ages. At 84, Bill still oversees his vast empire and regularly meets with his employees to share the Boyd family philosophy. On behalf of Keep Memory Alive, we are so very proud that Bill Boyd will be our recipient of this well-deserved Community Leadership Award."
— Larry Ruvo,
Keep Memory Alive
Chairman and Founder

A practicing lawyer before becoming one of the best-known figures in the gaming industry, Bill Boyd is Executive Chairman and Co-founder of Boyd Gaming Corporation. He serves as the firm's primary liaison with customers and employees, and takes a leading role in shaping the company's strategic direction and vision.

Mr. Boyd has been an active philanthropist and civic leader for decades. He was on the Board of Directors of the Las Vegas Downtown Progress Association, is Past President of the Better Business Bureau of Southern Nevada and the Nevada Resort Association, and is President Emeritus of the National Council on Responsible Gaming. Mr. Boyd served on the Board of Directors of Nevada State Bank for 20 years and founded the Bank of Nevada. He currently serves on the Board of Directors of Bank of Nevada parent company Western Alliance Bancorporation.

Bill Boyd, Boyd Gaming and the Boyd Foundation have been major donors to numerous nonprofit organizations, including the University of Nevada, Las Vegas; the Boys and Girls Club; Boys Town of Nevada; United Way of Southern Nevada; Three Square Food Bank; St. Rose de Lima Hospital; Nevada Blood Services; The Smith Center for the Performing Arts; and Opportunity Village. The William S. Boyd School of Law at UNLV is



Bill Boyd

named in his honor, in recognition of the \$30 million he pledged to the school's founding.

Bill Boyd and wife, Judy, have shared 32 years together and reside in Las Vegas. He is the father of Sam, Marianne and Willie, all of whom are executives at Boyd Gaming, and has eight grandchildren and one great-grandchild.

TICKETS ON SALE NOW!

Photo by Mark Seliger

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CLEVELAND CLINIC LOU RUVO CENTER FOR BRAIN HEALTH
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FOR MORE INFORMATION

KEEPMEMORYALIVE.ORG/POL | 702.263.9797 | POWEROFLOVE@KEEPMEMORYALIVE.ORG

KEEP MEMORY ALIVE

Supporting the Mission of Cleveland Clinic Lou Ruvo Center for Brain Health



ALZHEIMER'S | HUNTINGTON'S | PARKINSON'S
MULTIPLE SYSTEM ATROPHY | MULTIPLE SCLEROSIS



888 W. Bonneville Ave.
Las Vegas, NV 89106
Office 702.263.9797
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keepmemoryalive.org
clevelandclinic.org/brainhealth

20TH ANNUAL
POWER OF LOVE™ GALA
SATURDAY, MAY 21, 2016
MGM Grand Garden Arena in Las Vegas

*Celebrating
Tony Bennett's 90th Birthday*

JOIN US!

This not-to-be-missed event will sell out. Get your tickets today at keepmemoryalive.org/pol or call 702.263.9797.

See page 3 for more information.

