

# The 2011 MindAlert Lecture

## From Brain Fitness to Mental Wellness as We Age

*Gary Small, M.D.*



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# From Brain Fitness to Mental Wellness as We Age

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# Introduction

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**C**ompelling research has shown that strategies protecting brain health are superior to approaches that attempt to repair damaged neurons, especially for people at risk for Alzheimer's Disease. Dr. Gary Small has done extensive work related to early detection and prevention of Alzheimer's, including inventing brain imaging technology that can monitor brain aging, and developing memory training techniques.

In this MindAlert monograph, Dr. Small describes the latest medical and scientific evidence on how to best protect the brain in order to live better and longer with health, vibrancy, and cognitive vitality. He also reviews the newest brain fitness exercises that aim to enhance brain health and improve memory,

teaches some basic memory techniques, and shows how lifestyle choices and basic brain fitness are key to mental wellness. Because memory decline, psychological issues, and mental disorders affect a large number of people as they age, Small discusses the stigma associated with psychiatric treatment and how this stigma might be ameliorated. With expertise and humor, he tackles the topic of brain health in an informative, engaging way.

Small presented the lecture upon which this monograph is based at the 2011 National Forum on Brain Health as part of Aging in America, the annual conference of the American Society on Aging, and the MindAlert program. Developed by the American Society on Aging and sponsored by MetLife Founda-

tion, MindAlert is dedicated to sharing the findings of the most recent research on maintaining and enhancing cognitive function in later life.

Also included in this supplement to *Generations* (Summer 2011 issue; Volume 35, Number 2) is a profile of the 2011 MindAlert Award winner. For the past eleven years, this award has recognized and honored programs that promote mental wellness in older adults. This supplement also features an annotated list of both print and online educational resources focusing on brain fitness and cognitive health, and a brief description of MindAlert Award-winning programs from the award's inception in 2001.



Gary Small presents the MindAlert Lecture at the April 2011 Aging in America Conference.

## About the Author

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**G**ary Small, M.D., is a professor of psychiatry and biobehavioral sciences and Parlow-Solomon Professor on Aging for the David Geffen School of Medicine at the University of California, Los Angeles. Small is also founding director of the UCLA Memory Clinic, and director of the UCLA Longevity Center at the University's Semel Institute for Neuroscience and Human Behavior. As one of the world's leading experts on brain science, he lectures extensively throughout the world and has written numerous scientific papers, as well as popular books.

Small's research interests lie in early detection and prevention of Alzheimer's Disease. Driven by scientific evidence that protecting the brain is a better strategy than trying to repair damage once it has occurred, identifying at-risk people with mild cognitive complaints will allow intervention before Alzheimer's or other degeneration develops. Small leads a group of investigators in studying and developing genetic and brain imaging tools for testing prevention treatments for people with age-related memory loss. He has employed and disseminated his expertise in memory training through his work at UCLA, in brain game development, and in lectures to the general public.

A Distinguished Fellow of the American Psychiatric Association, Small invented the first brain scan that allows doctors to see physical evidence of brain aging and Alzheimer's Disease in living people. Among his many breakthrough research studies, he and a team of neuroscientists are demonstrating that exposure to computer technology causes rapid and profound changes in the human brain. His research has been featured in *The New York Times*, the *Wall Street Journal*, the *London Times*, the *Washington Post*, *Time Magazine*, and *Newsweek*, as well as on many high-profile television programs.

Along with his more than 500 scientific publications, Small has written a number of popular books, including the international bestseller *The Memory Bible*, *The Memory Prescription*, *The Longevity Bible* (nominated for the Books for a Better Life Award), and *iBrain*. His newest book, *The Naked Lady Who Stood on Her Head: A Psychiatrist's Stories of His Most Bizarre Cases*, according to Kirkus

Reviews, is filled with fascinating personal stories that relate with "empathy and humor... the complexity of human relationships."

Small has received many awards and honors, including the Research Award in Geriatric Psychiatry from the American College of Psychiatrists, and the American Psychiatric Association's Jack Weinberg Memorial Award for Excellence in Geriatric Psychiatry. In 2002, *Scientific American* magazine named him one of the world's top innovators in science and technology. As an expert on memory and the effects of aging on the brain, he has appeared on *The Today Show*, *Good Morning America*, *20/20*, and CNN.

For more information about Dr. Small's publications and activities, visit his website at [www.DrGarySmall.com](http://www.DrGarySmall.com), or see [www.aging.ucla.edu](http://www.aging.ucla.edu). Contact him via e-mail at [gsmall@mednet.ucla.edu](mailto:gsmall@mednet.ucla.edu) or [Twitter@DrGarySmall](https://twitter.com/DrGarySmall). To learn more about Brain Boot Camp and other UCLA programs, visit [www.memory.ucla.edu](http://www.memory.ucla.edu), or call (310) 267-1243.



Gary Small

# From Brain Fitness to Mental Wellness as We Age

Today's co-development of biomarkers and drugs allow science to take a closer look into the human brain. This—and maintaining a healthy lifestyle—can effect earlier interventions to protect the brain against aging, lower risk for cognitive decline, and delay the onset of dementia.

I thought I'd start out by talking about Madame Jeanne Calment—you may know about this woman—who lived to be 122. When she died they did a brain autopsy, and they found that she had the brain of a healthy eighty-year-old. She lived in the south of France and ate a Mediterranean diet—lots of fish, fresh fruits, and vegetables—which not only are good for your heart, but also for your brain. Madame Calment was physically and mentally active; many people believe that her healthy lifestyle protected her brain as she aged.

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***At age 122, Madame Calment had the brain of a healthy eighty-year-old.***

She was also an astute businesswoman—when she was ninety, she sold her apartment to a French lawyer *en viager*, which means that Madame Calment could continue to live there and he would pay her a monthly sum until she

died, at which point he would own and be able to occupy the apartment. Well, this lawyer predeceased her, and his estate continued paying for the property until Madame Calment's death at 122. So she did well on this deal; the lawyer and his heirs ended up paying much more for the property than it was worth.

A personal example of healthy brain aging is my wife's 104-year-old grandmother, Grandma Ollie. She was quite a character. She lived on the upper west side of New York City at Seventieth and Columbus, where she was always sticking her head out the window and talking with people from the neighborhood. She had no elevator in the building, so she had lots of physical exercise walking up and down the stairs. Also, she was on the phone all the time—sort of the *yenta* of the family, in everybody's business—which indicates her continued social engagement and mental acuity. She had a very organized desk—it looked neater than my desk ever

looked—and she had her medicines organized with a multiple-compartment pillbox.

One of the medicines Grandma Ollie took was ibuprofen (Motrin). The Baltimore Longitudinal Study of Aging in the 1990s found that taking these kinds of anti-inflammatory drugs for two or more years was associated with a 60 percent reduction in risk for Alzheimer’s Disease. Now, that doesn’t mean you should run out and start popping pills—these medicines have a lot of side effects, so you’ve got to be careful with them.

Also interesting and relevant to Grandma Ollie’s brain aging is that she did not take

estrogen after menopause. Estrogen helps keep the bones healthy, so Grandma Ollie, who was very short to begin with, actually got shorter as the years went on; she developed osteoporosis and compression fractures of the spine, perhaps in part because she didn’t take estrogen after menopause. When she moved from her apartment to an assisted living facility, I was a little concerned that maybe she was slipping mentally, that maybe she had developed mild cognitive impairment. A lot of older people, like Grandma, don’t like to be interviewed and tested, but we brought the video camera to document everything and, with the camera running, I started out by asking her age. She was getting hard of hearing, so she responded, “What?” I raised my voice and said, “Grandma, please tell me your age.” She paused, looked up at me, and said, “Shut up.” So she passed her mental status exam at the outset.

### **Protecting the Healthy Brain**

The following formula describes the possible risk for brain aging: one-third genetics, two-thirds lifestyle choices. The MacArthur Study of Successful Aging limited its sample to men and women ages 70 to 79 who had high physical and cognitive functioning, so this study defined successful aging as mental and physical health. Brain-healthy lifestyle strategies associated with a lower risk for dementia include physical conditioning, stress reduction, healthy diet, and mental challenge or cognitive training.

The theme I’m focusing on is trying to help people while their brains are still healthy, rather than attempting to repair existing damage. But keeping track of brain health is challenging. We often ask that people with cognitive complaints try to plot out how much time they’re spending doing certain things, like working, eating, and sleeping—when one person broke down his life this way, about 45 percent was “looking for things I had just a minute ago.” It’s kind of a daunting exercise, but it can help show what’s happening with people’s cognitive function.



Jeanne Louise Calment, 1875–1997.

Physical aging is easy to see—a number of years ago, when I had less gray hair than I do now, my daughter asked me, “Dad, why did you start painting your hair white?”—but brain aging can be harder to detect. Aging goes on in our brains as well as our bodies, and if we do nothing about it, then it’s going to get worse—and the rate at which cognitive health declines depends somewhat on genetic predisposition, but to a large extent on lifestyle.

What we want to do is intervene very early so we can protect the healthy brain rather than wait until people have Alzheimer’s or dementia and then treat them symptomatically. This idea of protecting healthy neurons (brain cells) makes sense. One way to try to understand that is to define different levels of brain aging. Normal aging can be described as memory complaints we all joke about: You walk into a room and you can’t remember why you walked in there, or where you left things. I’ll discuss some of people’s more common memory complaints and what can be done about them later on.

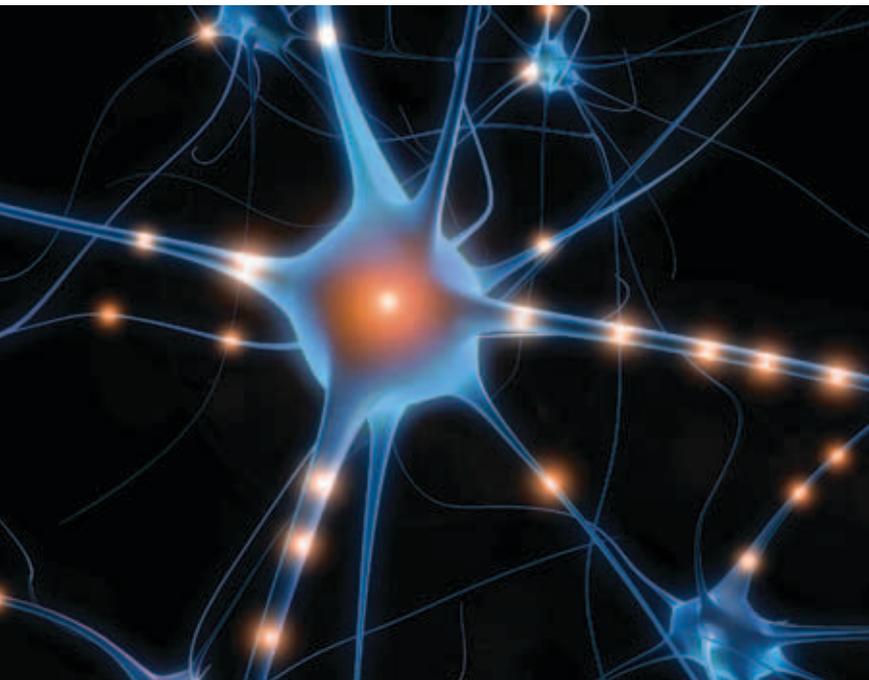
Then, if memory ability worsens, people develop what neurologist Ron Petersen, director of the Mayo Clinic Alzheimer’s Disease Research Center, calls mild cognitive impairment. People with mild cognitive impairment have short-term memory problems but they’re still functioning independently. However, their risk for developing Alzheimer’s dementia (i.e., cognitive impairment that interferes with their everyday life) is about 10 percent each year.

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*The rate at which cognitive health declines depends somewhat on genetic predisposition, but to a large extent on lifestyle.*

New criteria have been introduced for Alzheimer’s Disease. These new criteria would re-label Alzheimer’s Disease as Alzheimer’s dementia, which means that the buildup of amyloid plaques and tau tangles (tiny insoluble protein deposits that interfere with brain cell function) is at a high enough level that people can’t function independently. These new criteria would relabel mild cognitive impairment as Alzheimer’s Disease, if the patient had a test of the spinal fluid or a brain scan showing amyloid or tau deposits in the brain. The new criteria would re-label people with normal aging as having preclinical Alzheimer’s Disease if they had a biomarker test positive for plaques and tangles in the brain.

A major research challenge is to find an Alzheimer’s biomarker test that works like a cholesterol test for the brain. If you’re older than forty and your cholesterol level is high, your doctor will give you a statin drug to lower your blood cholesterol level and delay or prevent a future stroke or heart attack. In the same way, we’d like



An active, healthy brain neuron.

to have a brain check or some kind of blood test for people in the preclinical Alzheimer's stage or the normal aging stage that, if positive, would signal the need for a medicine that would delay cognitive decline. We're not quite there yet, but we're working on it and getting closer.

### Neuroimaging as a Predictive Tool

One way we're going to address this research strategy is with various neuroimaging or brain scan studies. I'll give some examples of what we're doing at UCLA, as well as examples of what other research groups are doing. Clinically, some of these scans are used to help with diagnosis once people have dementia. What we'd like to do is use them earlier, as a predictive tool before a patient develops dementia. The American Academy of Neurology guidelines stipulated that everybody who goes to the clinic for a dementia evaluation should get a structural brain scan (an MRI or a CT scan), which takes a snapshot of that brain and can show if there's a stroke, a tumor, or some other space-occupying problem.

In 2004, the Centers for Medicare and Medicaid Services (CMS) changed its policy to include PET scans to help with dementia diagnosis. A PET scanner is essentially like a Geiger counter, which measures radioactivity; the PET scanner measures a radioactively labeled chemical marker that has been injected into the patient. Most PET scan studies—and those approved by CMS—use a form of radioac-

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### *For people with Alzheimer's Disease, FDG PET scans show decreased functioning in brain cognitive centers.*

tive glucose (i.e., sugar) as the marker in order to see how the brain is metabolizing sugar, which reflects brain cell functioning. What we find consistently with this kind of PET scan—called an FDG PET scan, for the radiopharmaceutical fluorodeoxyglucose that's used—is that for

people with Alzheimer's Disease, the pictures show decreased functioning in brain cognitive centers, like the hippocampus and frontal regions, which metabolize less glucose compared to the brain of a volunteer without Alzheimer's Disease.

The poor glucose uptake in the medial temporal lobe, where the hippocampus is located, would differentiate Alzheimer's Disease from another, rarer form of dementia called frontotemporal dementia, where the PET scan shows decreased glucose metabolism in frontal and temporal brain regions. Because the front part of the brain is the thinking brain, this type of dementia changes or impairs an individual's complex reasoning skills and personality; people with frontotemporal dementia experience a kind of loosening of personality traits. So, for example, a fastidious dresser who before the dementia shopped at Saks Fifth Avenue, maybe starts going to flea markets to buy her clothing.

A number of years ago, in the northeastern United States, a surgeon—an obstetrician—started signing his name in a scar next to the Caesarean sections he performed. When I heard about him, I thought that was very bizarre. It sounded like frontotemporal dementia, where memory and cognition are intact but personality is loosening up. Doctors want to be able to differentiate this type of dementia from Alzheimer's Disease, because the treatment approaches differ. If these kinds of PET scans are done early on in people with mild cognitive impairment, they are also helpful in predicting what type of dementia these patients might develop.

A lot of work has been done with new chemical markers, such as FDDNP, a biomarker we developed at UCLA that measures both plaques and tangles in the brain, and is helpful in displaying neurodegeneration in the brain. In an FDDNP study published in the *New England Journal of Medicine*, the scans we took were very revealing. First, we took a baseline scan of normal aging, and then scanned the same person two years later. We didn't see much biomarker

showing in the later scan, which is good—it means there wasn't much plaque and tangle in this person's brain.

Now, when we scanned somebody with mild cognitive impairment, we could see tangles already beginning to collect, primarily in the hippocampus, which is a very important memory center of the brain. This person had a 10 percent risk for Alzheimer's because he had mild cognitive impairment; two years later, he developed Alzheimer's, and the scan showed much more evidence of plaques and tangles in the brain. Another person we scanned had Alzheimer's at baseline, and we did an autopsy a year later when the patient died, and we found that the lateral part of this person's temporal lobe had a lot of plaques and just a few tangles, whereas the medial temporal hippocampal area had more tangles and relatively fewer plaques.

We took the results from these studies and lined up the scans according to the memory scores; we could see that as memory gets worse, these plaques and tangles build up in the brain, and the buildup follows the pattern that we'd

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*Detecting plaques and tangles earlier will eventually help with early intervention and future prevention.*

expect—the pattern we've seen from multiple autopsy studies. When people learn they may have plaques and tangles in their brain, they might get anxious, but detecting these plaques and tangles earlier will eventually allow us to help with early intervention and the application of future prevention treatments.

### **Genetic Influence on Brain Health**

Another research approach to brain imaging is called functional MRI. In this type of scan, we alter the sequences in the MRI so we can see not only brain structure but also brain blood flow from moment to moment. Functional MRI allows us to give somebody a mental task and see



where the brain is working. In a study I did with Dr. Susan Bookheimer at UCLA, we gave participants a memory test while they were in the scanner. These people, on average, were in their early 60s and had normal brain aging—very mild complaints of age-related memory decline, such as “Where did I put my keys?” and so forth.

Half of the people in this study had the apoE-4 genetic risk for Alzheimer's, and half did not. Apolipoprotein E, which is on chromosome 19, has three forms (alleles)—apoE-2, apoE-3, and apoE-4; 25 percent to 30 percent of the U.S. population has the apoE-4 allele, which increases Alzheimer's risk. ApoE-4 is present in approximately 40 percent of individuals who get

late-onset Alzheimer's Disease; people with Alzheimer's are more likely to have apoE-4 than those who don't develop Alzheimer's. Having apoE-4 doesn't necessarily mean you're going to get Alzheimer's, but it's a risk factor—and if you do get Alzheimer's, you develop it at a younger age if you have apoE-4.

When they did a memory task, the memory centers of the brain—the front part of the brain, the temporal area, and the parietal area—lit up with activity. The memory scores were the same

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### ***Having apoE-4 doesn't necessarily mean you're going to get Alzheimer's, but it's a risk factor.***

for both of the groups—the apoE-4 carrier and noncarrier groups—and the patterns of brain activity were similar, but the functional MRI showed something very interesting: the people with the genetic risk for Alzheimer's had to work harder, use more of their brain, to score comparably on the memory test. In the people with the apoE-4 allele, the brain was working harder, and so greater portions of the memory centers lit up during the MRI scan. In fact, we found that the more brain activity an individual had at baseline, the worse that person's memory was two years later. So it seems that people's brains naturally compensate—but at a certain point that compensation strategy breaks down unless people get help.

If we do nothing to protect the brain, impairment can progress steadily into dementia. For people with Alzheimer's, symptomatic drug treatments—donepezil, rivastigmine, galantamine, memantine—will give some temporary improvement. The rate of decline doesn't change, but the level of function is higher than for those who aren't treated; eventually, though, people taking these medicines still get worse, and if you take people off the medicine, they get worse faster. What

we're all looking for is the Holy Grail of Alzheimer's treatment: a disease-modifying treatment that could stop the decline—or at least decrease the rate of decline—and would have a sustained effect if people went off the medicine.

A lot of research right now is looking at many different approaches to disease-modifying treatment of Alzheimer's. One big focus has been on clearing out the amyloid deposits that build up in the brain, but a lot of people argue that by the time the amyloid plaque accumulates, it may

be too late. They think that's why some of these drugs have not worked, because you've got to intercept the little building blocks of the amyloid before the plaques form. I'll talk a bit

about anti-inflammatory drugs and why they might work at a certain point in brain aging. Also, some studies have looked at the role of statins, lithium, and anticonvulsants in preventing and treating Alzheimer's.

### **Food for Thought**

Curcumin—which comes from turmeric and is in curry foods, and even in yellow mustard—is quite interesting; some cultures use it to help with



wound healing, and it's actually been studied as a treatment for cancer. Dr. Greg Cole and Dr. Sally Frautschy at UCLA have done studies showing that curcumin is a potent anti-inflammatory, as well as an anti-amyloid agent.

We're also planning to study curcumin and brain aging. Some studies have shown that people who eat Indian food on a regular basis actually score better on memory tests. That's just an association, though; it doesn't prove that the curry caused the better memory scores—some completely different relationship could be responsible. Interestingly, some studies show that in India, where people consume curry regularly, there's a low rate of Alzheimer's Disease. Again, that's just an association, not a connection demonstrating a causal relationship.

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***Any kind of alcohol in moderation is associated with better brain health.***

Another medicinal substance is resveratrol, an anti-oxidant compound that's found in red wine. One of the challenges is to get the resveratrol out of the wine and into a pill. Not just red wine, but any kind of alcohol in moderation is associated with better brain health. Caffeine has been associated with a lower risk for both Parkinson's and Alzheimer's, so drinking coffee

also may protect the brain. Of course, too much caffeine will make you anxious and isn't good for your heart so, again, moderation is important.

**Anti-Inflammatory and Other Drug Studies**

One study using Pittsburgh Compound B (PiB), a chemical that marks amyloid plaques, did the PiB scans at baseline and seventy-eight weeks after giving participants an anti-amyloid medicine that one of the drug companies is developing. These people all had Alzheimer's Disease; half of them got the drug and the other half got a placebo. The treatment group showed a significant effect in their scans: the PiB scans after treatment showed reduced amyloid in the brain. In the placebo group at seventy-eight weeks, the amyloid was building up. The problem was that clinically, the primary outcome for the treatment group didn't show any change: the drug changed the biomarker, but did not improve patients' cognitive ability. What we're looking for is something where the biomarker will correlate with a positive treatment outcome.

At UCLA, we did an NIH-supported study using the anti-inflammatory COX-2 inhibitor, celecoxib, in people with normal aging—on average, people in their late fifties with mild age-related memory decline. In this eighteen-month study, we found a positive effect: people taking celecoxib for eighteen months had better





executive functioning, as well as better language and semantic memory, than those in the placebo group. Also, using the FDG PET scan to look at the glucose metabolism in the brain, we saw that those in the treatment group showed more metabolism in the frontal lobe of the brain. Now, it was a relatively small study—only about seventy-two people enrolled, and there were dropouts—but it still showed a significant effect.

Other studies suggest that anti-inflammatory treatment may help protect the brain for people with normal aging; however, for people with dementia, the studies seem to show that anti-inflammatories accelerate the problem. A similar kind of effect is apparent with estrogen. The Women's Health Initiative randomized women to Premarin or placebo and found that the Premarin, after age sixty-five, seemed to accelerate dementia symptoms for people at risk. Some suggestive evidence from studies by John Breitner shows that for those who don't have a lot of plaque in their brain, estrogen may be protective. Similarly, Karen

Hsiao Ashe has done some experiments showing that anti-inflammatory drugs may be brain protective if there's not a lot of amyloid plaque in the brain.

### **Physical Fitness, Exercise, and the Brain**

I wonder whether this seemingly protective function of anti-inflammatories is an indirect effect. The people who are taking these medicines are probably athletes, because they have a lot of joint pain, and physical fitness does protect the brain. In fact, when we started the celecoxib study, I remember one of the participants said to

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*Tai chi protects the body from inflammation and may improve cognitive performance and mood.*

me, "You know, Doc, I don't know if my memory's any better, but I can sure walk up the stairs faster." So I thought maybe these people were just more active because the anti-inflammatory was making them feel better, and so their brains

got healthier from the physical exercise, not from a direct effect of the medicine.

The theme of inflammation is very important for brain aging and other age-related conditions. Helen Lavretsky of the UCLA geriatric psychiatry division, and Mike Irwin have done studies with tai chi, and they find it protects the body from inflammation and may improve cognitive performance and mood. Also, exercising and getting a good night's sleep are important for reducing inflammation.

So, how are these anti-inflammatories working? Are they altering inflammation in the brain? We know that amyloid plaques have elements of inflammation—cytokines and activated microglia. But we did some other experiments suggesting that a different mechanism could be at work. Dr. Jorge Barrio took some slices of Alzheimer brain and used our FDDNP biochemical marker to see the plaques and tangles. When he mixed in anti-inflammatory drugs—ibuprofen or naproxen—the drugs competed with the biomarker for binding. The drugs were actually binding to the plaques. When they put synthetic plaques in a test tube, some anti-inflammatories, particularly ibuprofen and naproxen, make the number of plaques go down. So it seems like at least in the test tube, these medicines are dissolving the plaques.

When a transgenic rat—a rat that has had a human Alzheimer gene put into its DNA—gets to be about fifteen months old, it starts getting confused and shows impaired memory abilities. An FDDNP PET scan of this rat's brain at fifteen months shows lots of plaques. By the way, when we use rats and other little animals this way, we call it a micro-PET study. Now, they took that same rat and fed it naproxen for two days and then rescanned its brain; this scan no longer



showed the plaques. Keep in mind that the naproxen did not dissolve the plaques—it was competing with the FDDNP for those binding sites. So the next experiment would be to take a seven-month-old rat, feed that animal naproxen, and see what happens. These experiments give us a way of testing new treatments: we can take a promising drug, look at the animal model, and then use the same technologies that we're using in the animals with patients in the clinic.

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*We have more control over our brain health than we might think.*

So, that's where the science of biomarker development is going. Right now, the question is, what can we do to protect our brains? Genetics are important, but they're not the whole story; we have more control over our brain health than we might think. To simplify the idea of taking control of our brain health, the major areas where we can have an impact are physical conditioning, stress reduction, diet, and mental and cognitive training.

### **Lifestyle Choices and Brain Health**

We've all read about physical exercise—it's good for the heart—but it's also good for the brain—

the question is, how much exercise do we need? The answer is, we don't know exactly, but you probably don't have to become a triathlete to get enough physical exercise to protect your brain. Studies have shown that just ninety minutes a week of brisk walking is associated with a lower risk for Alzheimer's Disease.

Arthur Kramer at the University of Illinois has done some wonderful studies in this area. He has found that people who exercise have bigger, more efficient brains and better frontal lobe function. He puts older people on a walking program and, in six months or a year, they're doing great—their cognitive functioning is better and their brain looks better on scans. Those experiments bring forth some compelling evidence. Animal studies show similar results; active animals have plumper hippocampi and more memory cells in their brains than inactive animals. Cardiovascular fitness is also associated

with more cortical tissue in the parietal, temporal, and frontal areas of the brain.

Aerobic conditioning has shown most of the positive effects, but more recent studies have found that strength training can also protect your brain. The thinking is that maybe there's something about the cognitive activity associated with trying to do the exercise correctly that gives additional protection. We're not sure. So, if you do nothing else after reading this, I'm hoping that you'll start taking at least ten-minute

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*Just ninety minutes a week of brisk walking is associated with a lower risk for Alzheimer's.*

brisk walks after dinner, to protect not only your heart but also your brain.

Stress is a real challenge, and it's detrimental to lots of organs in our bodies, especially the brain. Robert Sapolsky at Stanford has found that

chronically stressed-out animals have impaired memory and so get lost in their mazes; they also have fewer hippocampal neurons than less stressed control animals. Studies with human volunteers have found that injecting a person with the stress hormone cortisol temporarily impairs learning and recall. The good news is, it's temporary—the brain bounces back when the cortisol is withheld. Chronic stress also may cause depression or anxiety associated with impaired memory and concentration.

Also, depression itself is associated with cognitive decline. When people are depressed, they can't focus—and, especially as people get older, depressive symptoms and cognitive symptoms overlap. In fact, with the PET brain-imaging markers,



we found an increase in plaques and tangles in the brains of people with more of symptoms of depression. Remember, though, that exercise can help reduce both stress and depressive symptoms, so there's another good reason to take those walks.

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***Antioxidant fruits and vegetables are associated with better brain health, as are omega-3 fatty acids.***

Diet is important for brain health. We don't have absolute proof on some of the dietary factors, but, based on observational studies, we think that several aspects of diet probably affect cognitive function. The most important might be weight control. We have a tremendous challenge with overweight and obesity in the United States

and around the world—a challenge complicated even more by technology and its effect on the brain, because we're all sitting in front of computers and not exercising. One of the things we're working on at UCLA with the computer science department is to develop computer brain games that are combined with physical fitness exercises, so that you can work out your body and your brain simultaneously.

Besides exercise, calorie control in the diet to avoid illnesses associated with obesity is another important factor. Plus, the types of calories we ingest are important—antioxidant fruits and vegetables are associated with better brain health, as are omega-3 fatty acids, so eating fish twice a week is encouraged. The American Psychiatric Association recommends that people with depression get enough omega-3s in their diet to stabilize mood. The types of carbohydrates you eat also matter. The glycemic index tells us how rapidly a carbohydrate will spike your blood sugar; foods with a high glycemic index, such as many processed foods, are not going to be good for your brain. Spiking your blood sugar in this way may increase your risk for type 2 diabetes, and diabetes is associated with increased risk for Alzheimer's Disease and small strokes in the brain.

**Improving Brain Fitness**

Now, about mental exercise—there's a lot you can do to improve brain fitness. Everybody seems to talk about the downside of the aging brain, but there's also an upside: The frontal lobe gets more skilled, the insulation around the axons increases, and you get more rapid transmission—so the older brain figures out patterns, how to solve problems, very quickly. With brain teasers, for example, a younger group might not get the answers as quickly as a group of older adults.

When we use the brain stress test with functional MRI, we find some interesting results after training the brain. We did a baseline brain



stress test of a forty-six-year-old woman who came in to one of our programs at UCLA complaining that she was forgetful. When she did a memory task at baseline, her brain showed lots of activity in the temporal area and the parietal area. After she went on a two-week program and learned the memory techniques, her brain stress test showed that her verbal memory had improved considerably; her brain no longer had to work so hard. The brain sort of works like the body: if you go to the gym and start lifting weights, at first you have to exert a lot of energy and you can't lift much—but, with practice and training, you can lift more and actually exert less energy. So, this woman's improvement is an example of building brain muscle.

At UCLA, we've taken these kinds of strategies and created programs for the public. One of our programs is called Brain Boot Camp, where people will come in for half a day and one of our professionals will teach not just cognitive training techniques but also lifestyle approaches to protecting the brain. We have another program that was developed by the UCLA Center on Aging—now called the UCLA Longevity Center—




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### ***The older brain figures out how to solve problems very quickly.***

a very popular, four-week course that we've licensed around the country. Thousands of people have taken it; the program is now available in six states (California, Florida, Illinois, Iowa, Maryland, Pennsylvania), and has even been translated into Spanish. Part of what makes this program fun is that it's volunteer-taught group learning, and working in small groups helps de-stigmatize the memory challenges.

Another approach to mental exercise is using computers. I was involved with Dakim, Inc., in the development of a touch screen for brain games, and I partnered with Mattel on a handheld electronic game featuring brain aerobics. Nintendo has Brain Age, and Posit Science has

licensed various programs, one is a visual-spatial program developed with Allstate Insurance. These kinds of approaches are especially helpful for people who can't get to a memory training class but want to improve their brain fitness. My newest effort in this area is with a company that has developed a memory stick that includes videos of information on brain-healthy lifestyle strategies, along with brain games to improve memory ability (for more information, visit [www.brainfit.com](http://www.brainfit.com)).

What about using mental exercise techniques for people who are already diagnosed with Alzheimer's? Someone with mild cognitive impairment, maybe with very mild Alzheimer's, can take some of these courses and get some help. For people with more advanced cognitive decline, the memory techniques are often too challenging, but we can adjust the mental stimulation for the degree of impairment. Let's say someone with more advanced Alzheimer's liked reading biographies—at that point, books for teenagers might be easier for them to read and may make more sense to them.

### **The Benefits of Cognitive Training**

Now, let me try to clarify something that is not necessarily obvious: the difference between mental aerobics—that is, brain games, like doing

Sudoku or crossword puzzles—and learning cognitive techniques. Many studies have shown that people who have more mental stimulation

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***There's not absolute proof that becoming a Sudoku master will lower your Alzheimer's risk.***

have a lower risk for Alzheimer's—and animal studies suggest that animals with lots of stimulating toys in their cages have better memory and so forth. We do encourage people to maintain mental activity in this way—because it's a lot of fun to do these puzzles and to play these games. However, there's not absolute proof that becoming a Sudoku master will lower your Alzheimer's risk. That's important to understand. The studies showing that people who finish college have a lower risk for Alzheimer's, now, those are associations.

On the other hand, a lot of evidence shows that teaching people specific cognitive training techniques will cause real benefits. Ball and colleagues did a big study of almost 3,000 volunteers ages 65 to 94 who got various types of cognitive training. Each intervention improved the targeted cognitive symptom, and the improvements lasted for five years. Now, one of the criticisms of this kind of training is that the skills don't transfer to everyday life. So people take the training, learn the techniques, and perform better on the tests, but they don't get better in everyday life. That's kind of hard to assess in many of these studies. So, we've made our memory training program at UCLA very practical, showing people how to improve their everyday memory.

Regarding everyday memory, I think people generally complain about four very common

areas: first of all, forgetting where they put things. Remembering names and faces is another big one; 85 percent of older people complain about having trouble with that. The third one is—let's see, now, what was that other one? We call it tip-of-the-tongue phenomenon, where you're sure you know something, but you can't come up with it when you want it. The final is called prospective memory—you know, you're driving to work and you think, "Oh, no, I left my cell phone at home; well, let me call my wife and tell her," and you reach for the phone and it's not there. We have specific exercises for dealing with all of these everyday memory complaints.

Now, to learn names and faces, or lists, or to remember things, my wife, Gigi, and I came up with a simple strategy called look, snap, connect.



“Look” is a reminder to focus attention—probably one of the biggest reasons people don't remember is that they're just not paying attention. “Snap” means to create a visual image—a snapshot. The human brain evolved to remember visual things (like that predator coming at you) very well, so if we can create a visual image, it tends to stick better in our memory. “Connect”

is a way of linking up what we want to remember with the visual image so we can recall it later. You have to give the information meaning because things that mean something to us are much easier to remember.

So, people talk about losing their keys, their car, and so forth. If I park my car in lot 3B at UCLA, as I walk away I visualize three bees hovering over my car. Bees have meaning for me because there's an emotion attached to them—I remember getting stung by a bee. If something has emotional meaning for you, it's easier to remember. When I park in lot 2B, I visualize William Shakespeare reciting “to be, or not to be.” By the way, you may not want to share with other people all the images you come up with. No matter what images you create, you want to give them meaning, detail, and, if possible, movement, because all those elements will make your snapshots easier to remember.

Here's an exercise to show how meaning makes a difference. Here are eight unrelated words: beach, professor, horse, teddy bear, cigar, nun, palm tree, and pasta. To take look, snap, connect to the next level, use the story method to remember these eight words. What you want to do is create a visual image: you look at the words, you create a snapshot for every one of those words, and then you connect the words together by creating a narrative story—and the words can be in any order. So quit reading, take a moment, don't write it down, just make a look, snap, connect story in your head.

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***One of the biggest reasons people don't remember is that they're just not paying attention.***

These approaches can also be used to remember names and faces. When we meet people, we can say to ourselves, for example, “Paul Foreman has a prominent forehead”; “Harry has a lot of hair”; “Lisa has a subtle, Mona Lisa smile.” The connection doesn't have

to be perfect—you just need to find something to link the face to the name. Then, when you see that person again, you'll have a visual cue to help you remember the name.

### **Encouraging Behavioral Change**

At UCLA, we've found that when we put people on healthy-brain programs, it really has an effect not just on their memory but also on how they

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***With a healthy brain, we can do more with less energy.***

feel and how their brain functions. In a study a few years ago, we gave people memory training, as well as diet, exercise, and stress reduction guidelines, and after two weeks, we saw significant effects on the front part of the brain, where there was less brain activity with more efficiency. With a healthy brain, we can do more with less energy.

I saw a photo on the cover of a prestigious medical journal of a doctor holding a lit cigarette, and that reminded me how hard it is to get people to change, and how hard it is to change policy. When I was a medical intern in San Francisco in the late '70s, I asked one of my first patients, who had bronchitis, how she'd started smoking. She said, “Well, my doctor told me to smoke to lose weight.” So, it takes a while to really get enough evidence to change policy and I'm wondering, with all the healthcare debate, why we aren't talking more about incentives for people to live healthy lifestyles—incentives like getting better rates on their health insurance.

At UCLA, with the help of the RAND corporation think tank, we did a study a few years ago where we modeled this idea: We took the epidemiological studies that showed the connection between healthy lifestyle and lower risk for Alzheimer's, and we calculated a relative risk. So, for example, if people who didn't eat much fish increased their fish intake, they would have a 24 percent lower risk for getting Alzheimer's.

These statistical models suggested that if we could get everybody to adopt say, one healthy lifestyle change—assuming that, in fact, a cause-and-effect relationship exists—we could expect 1 million fewer cases of Alzheimer’s within five years and 2.5 million fewer cases within twenty years. So, that would be fantastic, if people made these simple lifestyle changes.

### Your Brain on Technology

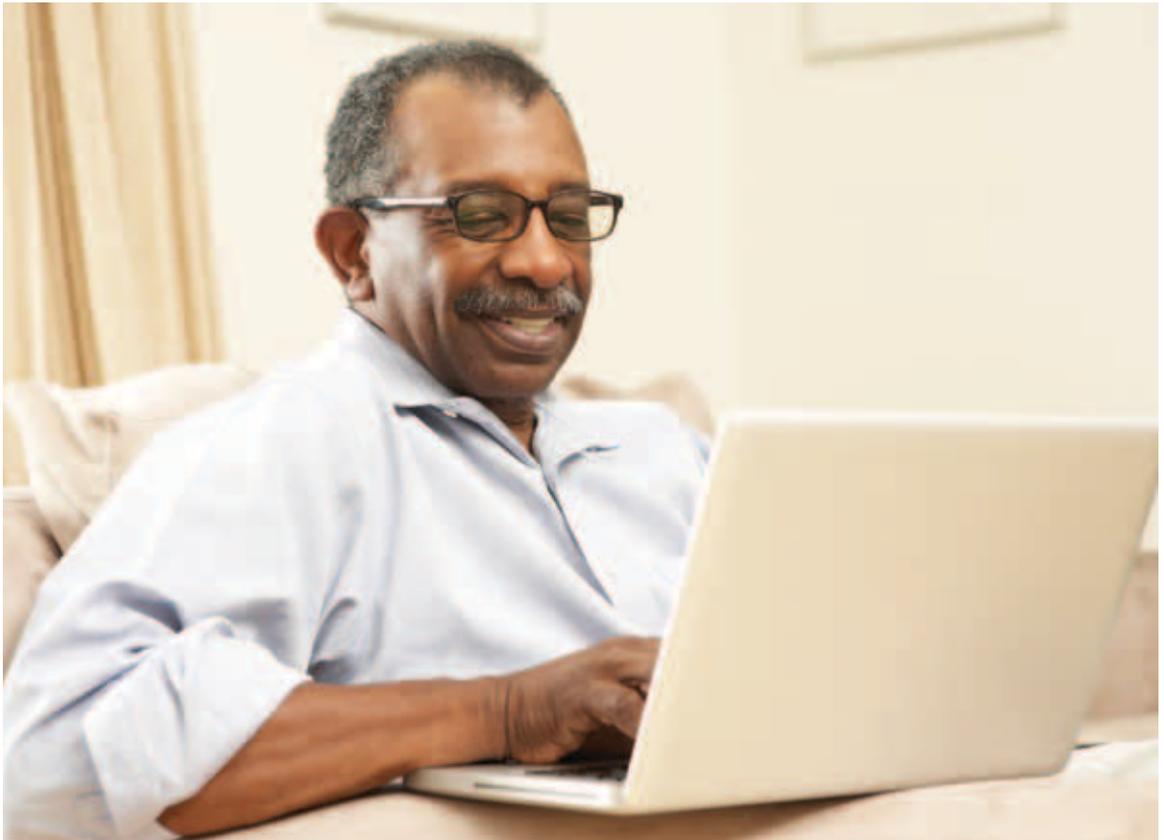
Let’s face it—in today’s world, we’ve got a lot of technology affecting our lives and our brains. I heard recently about a cell phone study where the researchers found that being exposed to the radiofrequency signal while talking on a cell phone changes brain metabolism. Whether that’s good or bad we don’t know, but these devices are everywhere, so I want to bring up some of the work we’ve done at UCLA, and

how technology may affect memory. We know technology is changing our lives; it’s also changing our brains.

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*We know technology is changing our lives; it’s also changing our brains.*

I think young people are the most vulnerable to these changes because they’re the digital natives—they were born into the digital age and grew up using computer technology—and their brains are so sensitive, so exposed, and so immersed in digital technology, it affects them the most. As older people, we’re the digital immigrants, because we were born into a world without computers and adopted technology later in our lives. Digital immigrants may be slower to embrace or even resistant to technological innovation. Of course, both groups



include a continuum of people with different levels of familiarity with technology but, in general, digital natives are much more adept with technology than digital immigrants.

What we're trying to do now is bridge what we call a brain gap by upgrading older people's technology skills and helping younger people with face-to-face communication. A year or so ago, my then seventeen-year-old daughter was talking to me while she was texting. I said, "Rachel, when you're texting and I'm talking to you, I just don't get the sense that you're listening." So she looked up from her texting and said, "Don't worry, Dad, I don't do this with my teachers"—and then went right back to texting.

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***Just as we need to think about moderation with our lifestyle, we need to think about it with our technology.***

So, digital natives are immersed in the digital world, and we digital immigrants need to try to understand it better and maybe help the digital natives with their interpersonal skills.

The first point I want to make is that our relationship with technology is not only global, it's personal. Try handing your cell phone to a stranger sometime. For many people, doing this can be very anxiety-provoking; they worry that the person may drop their phone, or see something personal, or worse. So technology is affecting us on a personal level. By the way, I always feel funny when I say "I'm going to dial that number" because we don't do that anymore.

I've had people call me in a panic because the server was down and they didn't know what to do. We're used to being connected. In colleges, they have trouble getting the kids to stop texting during class; one professor I met said she gives students a five-minute break halfway through class so they can catch up on their texting. That is absolutely extraordinary to me. Just as we need to think about moderation with

our lifestyle, such as with caffeine and alcohol, we need to think about it with our technology. We need to spend time offline.

Why is spending time away from technology important? Our brains are very sensitive to input, and so are quite plastic and changing from moment to moment. Every sensory stimulation causes a corresponding chemical reaction in the brain. If you look at a computer screen, or read a book, or do any mental activity, light comes into your eye and hits the retina at the back of the eye; that information is then transformed into neurotransmitters, and these little chemical packets are sent along the network of neurons. The brain is quite small—it weighs only three pounds—but it's very complex; it has billions of connection sites, called synapses, between neurons.

The brain is not only complex but it's also specialized. In an experiment that had a volunteer do different tasks with words—listening, seeing, saying, or generating words—a brain scan showed that very different parts of the brain were activated with the different types of stimulation. Also, perceiving an image or a sensation can stir intense emotional reactions, jog memories, and trigger an automatic response.

**Changing Environment, Changing Brain**

If we repeat a mental stimulation over and over again, the mental circuits that control that mental task will strengthen; if a certain task is ignored, the neural circuits controlling it will weaken. The young brain is very malleable and, in fact, the young brain is very good at learning languages and musical instruments, but there's a downside to the young brain: the frontal lobe, which handles decision making, is not fully developed. I know that because I taught both my teenagers to drive, and it was very anxiety provoking. I'd say "look out for that car!" and they'd mumble "whatever, Dad." You've got to make good decisions

quickly, and the adolescent brain is not quite equipped to do that.

### **Technology Affects Our Brains**

Also, the adolescent brain is still going through a process of pruning. Neuroscientists have found that 60 percent of the neural circuits are literally pruned away as the brain develops from childhood through adolescence. So it's a very malleable time for the brain, and emotion reactions are not fully developed, either—empathy skills are not as developed in an adolescent as they are in a middle-aged person.

What does all this have to do with brain evolution? We know that as humans have advanced as a species, our brains have gotten bigger, and there've been major milestones in brain evolution. For example, when humans first figured out how to make a handheld tool, their frontal lobes grew very quickly in evolutionary terms. The idea of taking a rock and making it into a tool or a weapon involves planning skills and complex reasoning, so the frontal brain really made advances and, at the same time, humans were building more complex social networks and grammatical language.

Now, what will happen to our brains because of the electronic, digital hand-held tools we use today? You might turn to Charles Darwin and natural selection to understand that; the genetic variants that adapt best to the environment are most likely to survive, which explains the tremendous variability among the species. There's no question that technology affects our brains. You may be saying to yourself, "Well, this is ridiculous. My mother said TV would rot my brain and that never happened." In a way, that's true: I'll discuss some experiments showing that the brain is really malleable and can fix itself if you do the right thing.

However, some evidence supports your mother's hypothesis. The Kaiser Family Foundation has found that the average young person (ages 8 to 18 years) spends about eleven and a

half hours a day with technology, and that doesn't even include school. And they're multitasking while they're doing this, so humans have multitasking brains; even digital immigrants are starting to get into it. But with the natives, there's concern about their face-to-face human contact skill, as I expressed to my daughter. They're not looking you in the eye, they're not noticing nonverbal cues, and maybe their empathy skills are not too good.

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### ***With digital natives, there's concern about their face-to-face human contact skill.***

A recent study published in the journal *Aggressive Behavior* supported that conclusion. In this study, 197 young people ages 17 to 23 watched a series of calm facial expressions morph into either an angry face or a happy face. Typically, people identify happy faces faster than angry faces. What this study found was that when these volunteers played a violent video game before the facial recognition task, they lost the happy-face advantage. The violent input to their brains impaired their ability to rapidly identify the emotional content in the happy facial expression.

### **Is Technology Making Us Stupid?**

And then there's some debate about whether Google is making us stupid. Our brains are getting trained to dash from one idea to another, just as we search from one website to the next. Not long ago, I got a new phone, and I was really excited about its Internet connection. When my wife asked me, "Where are we going to dinner tonight?" I told her, "Oh, I'll look it up." She came back fifteen minutes later and asked, "So, where's that restaurant?" I looked up from my phone and said, "What restaurant? Check out this really cool website I found." I think our brains get easily distracted like that, and the question is, are we really spending time anymore to solve problems and to think?



At UCLA, we wanted to understand this phenomenon, so we did a study called “Your Brain on Google.” We were very interested to see what the brain looked like the first time it searched online. Of course, I learned rather quickly that I couldn’t recruit volunteers online. We did find twelve Internet-naïve

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***With all this technology, are we really spending time anymore to solve problems and to think?***

people, and they were in their mid-sixties. We matched them up with twelve Internet-savvy people. All of the participants were well-educated and most of them were women; they just differed in their computer expertise. We put them in the functional MRI scanner and gave them these special goggles and showed them book pages and said, “OK, read the information and we’ll test you later on this book.” After that we had them search online

while in the scanner, with a special little keypad where they could work a mouse.

We found that Internet-naïve people, when they read the book pages, used their visual cortex, the front part of their brain, and their language centers. The first time the Internet-naïve people searched online, there was no difference in brain activity from when they’d read the book. When I saw that I was a little bit disappointed. For the Internet-savvy people, when we had them read the text pages, same pattern. But this was the big result: when the Internet-savvy people searched online, they had much greater brain activity going on.

It’s not necessarily true that Google is making us smarter, but we found that it was activating more circuits in the brain if people had prior experiencing searching online. In fact, for part two of the study, we’ve taken these Internet-naïve people and we’ve had them

search online for just an hour a day for a week, and we see significant increases in areas of the brain controlling decision making and short-term memory—which makes sense. When you’re searching online, it’s an interactive process that requires using your short-term memory and making choices.

I think what happens with technology or any new mental task is, initially we don’t know what to do with it, so there’s not much brain activity. But once we figure out a strategy, the brain has a burst of activity—and then, once

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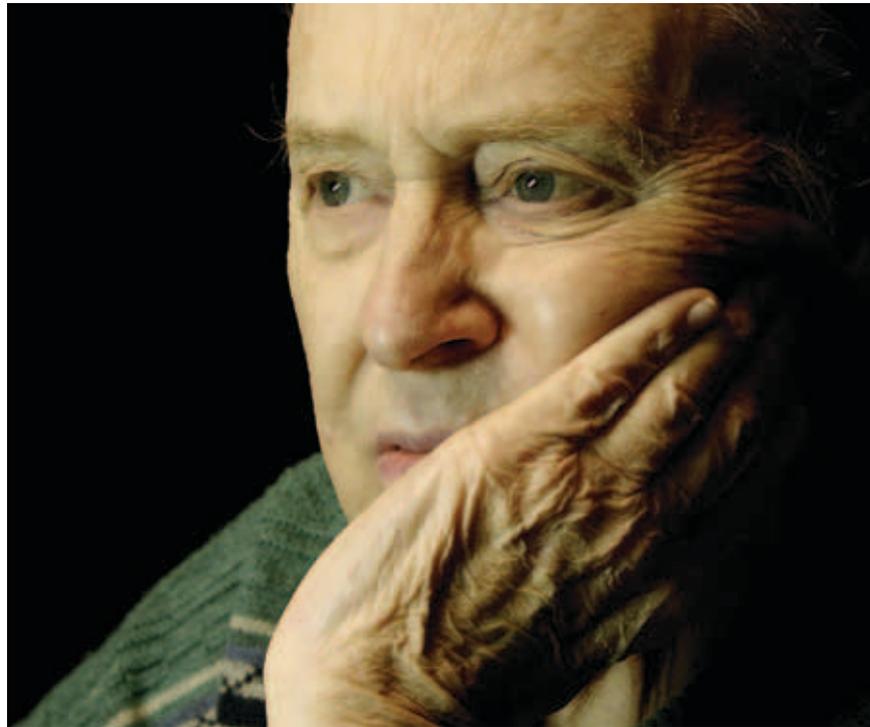
***Technology allows us to pick and choose what we commit to biological memory.***

the task gets familiar, we need less brain activity because of cognitive efficiency. So, is computer technology worsening your memory? I know several people who say, “It’s great, I’m memorizing phone numbers—it’s good for my brain.” Well, we don’t really need to memorize phone numbers, but people are concerned that somehow they’ve abandoned their brains somewhere because of all the technology.

In a way, technology can be a positive thing, because as we get forgetful, we can look things up and, in fact, we’re doing that a lot—most of us are choosing not to memorize phone numbers; we’re looking them up, or just programming them into our phones. What I say is, we can pick and choose what we commit to biological memory. I use look, snap, connect for things like remembering names and faces; appointments and anniversaries I put into my PDA. So, technology is not necessarily

bad for our brains. In fact, studies show that surgeons who play video games make fewer errors in the operating room. So, the next time you have to have a procedure done, ask the doctor, “How many hours a week are you playing *World of Warcraft*?” Playing video games can improve visual attention and other skills.

So, with the brain gap between digital natives and immigrants, the key is finding balance. We want to upgrade the tech skills of the digital immigrants and help young people with their face-to-face skills. Now, what’s going to happen in the future? I think this is a very exciting area. The UCLA Longevity Center has an annual conference on technology and aging and focuses on how technologies can improve our lives. Some of the computer science students brought in a device that you put on your head and, when you concentrate, you can make a lightbulb glow. When you relax, the lightbulb goes off.



In some experiments, volunteers have actually typed fifteen words a minute on a computer just by thinking about it. So the area of computer-brain interface technology is moving along. Probably in the future, instead of wearing a Bluetooth piece, you'll wear a little

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***Mental illness is often perceived as a weakness; because of this tremendous stigma, people often don't get help.***

sensor; then, if you want to meet your friend for coffee, you just think that thought, and it'll be transmitted on Wi-Fi to your friend's computer. Your friend will meet you at the cafe, and you'll be sipping your coffee reading each other's minds—you won't even have to talk. The downside is, as you walk down the street you'll have to wear a little tinfoil hat so people don't hit you with spam.

### **Addressing Stigma**

I'd like to go beyond the idea of achieving brain fitness to the idea of achieving mental wellness. We have to think about how to keep our minds well, especially as we age. I've been working in the field of Alzheimer's for many years, and my wife and I have a close relative who we thought might have Alzheimer's. As we were sitting and talking to this relative, my wife said to her, "Why aren't you listening? Why aren't you focusing when I'm talking to you, instead of just staring away into space?" And I kind of muttered under my breath to Gigi, "Well, her brain wires aren't working right." Our relative looked up at me and said, "What'd you say about my brain wires?"

I thought, well, maybe she doesn't have Alzheimer's disease after all. We actually brought her in to the hospital because we thought her cognitive troubles might be caused in part by depression, and electroconvulsive therapy did help her. She did have some Alzheimer's Disease, but she also showed improvement with treatment of her depression. There's

still tremendous stigma about mental illness in the United States. Celebrities come out, people like Rod Steiger, who said, "Depression is a brutal disease. It flays you. It skins you alive. There is nothing to feel guilty about, nothing you can do except get help." And you can get help—and yet, because of this tremendous stigma, people often don't get help.

We joke about mental illness to distance ourselves from it, and tend to react to mental struggle with denial. I saw a cartoon where a patient is saying to the psychiatrist, "Can we up the dosage? I still have feelings." Certainly, if we're depressed we're not going to be able to remember things very well, and if we can't remember things well, we may get even more depressed. Mental illness is often perceived as a weakness—the thinking is that people should be able to solve their own problems.

There's also a lot of stigma about psychiatrists, who are often seen as these probing detectives who take control of their patients' minds rather than heal them. The media perpetuate these kinds of stereotypes. For example, Jason Robards played a psychologist in *Tender Is the Night* who married one of his patients, Jennifer Jones.

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***What's important is moderation and balance in our lives.***

But people can really be helped with psychiatric intervention, so this stigma needs to be addressed. I think portraying the human, personal side of the practitioner, as well as depicting patients' struggles to overcome the stereotypes associated with mental illness, would help demystify the field. Plus, illustrating the effectiveness of psychiatric treatments and debunking misconceptions could help people feel more comfortable with the whole idea. Gigi and I recently wrote a book addressing these issues, which came out in hardback as *The Naked Lady Who Stood on Her Head: A Psychiatrist's*

*Stories of His Most Bizarre Cases*. In paperback, the publisher is changing the title to *The Other Side of the Couch: A Psychiatrist Solves His Most Unusual Cases*.

## Conclusion

I'm excited about today's co-development of biomarkers and drugs that will allow us to really look into the brain and accelerate prevention strategies with early interventions to protect the aging brain and delay the onset of dementia. In the meantime, healthy lifestyle is critically important for improving brain health and lowering risk for cognitive decline. When people come to our clinics at UCLA—Brain Boot Camp, our memory maintenance program, and our many other brain fitness programs—we not only look at the medical

approach but also at what people are eating, how they're dealing with stress, and so forth. We routinely ask people about their lifestyle, because it's so very important for brain health.

Technology is changing our lives and our brains. I'm excited about the many new devices under development—a whole new area of brain fitness and a whole new science has grown and developed, and I'm just delighted at the opportunity to be part of some of these innovative approaches.

The key to successful aging, I think, is to find a healthy balance between our technology and nontechnology pursuits. Whether it's drinking wine, eating chocolate, or using the Internet, what's important is moderation and balance in our lives.

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# A Brain Fitness Reading List

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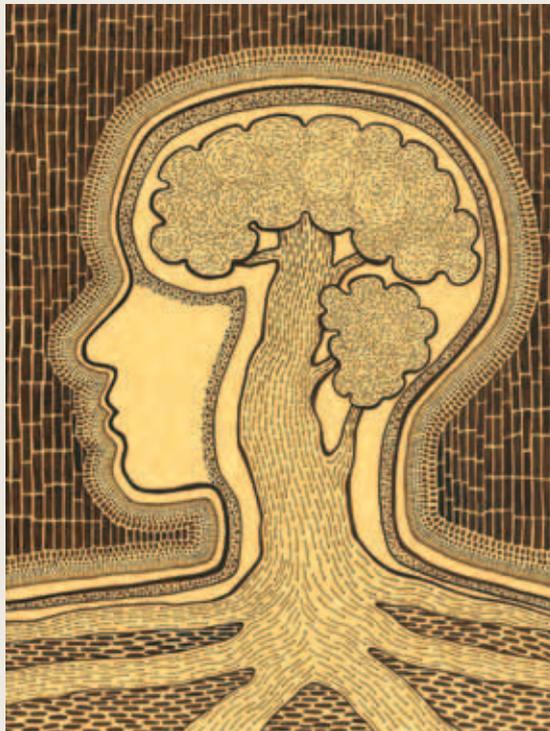
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# The MindAlert Program

In the last five years, the brain health industry has grown to include everything from brain exercise puzzle books and memory-enhancement classes at senior centers, to elaborate cognitive assessment and brain fitness computer programs. Always seeking to keep pace with the demands of an aging society and the latest scientific findings on mental wellness in later life, the American Society on Aging (ASA) continues to improve and expand the MindAlert program.

With generous funding from MetLife Foundation, ASA has been conducting this multifaceted program on the aging brain since 2000. MindAlert disseminates current information on state-of-the-art research and innovative programs in the nonprofit sector that help people maintain and enhance cognitive function and mental wellness in their later years.

All MindAlert program activities are guided by an advisory committee of professionals in the fields of older adult learning and cognitive fitness. Now in its eleventh year, MindAlert continues to provide important and needed information through three program components: the National Forum on Brain Health, the MindAlert Award, and the MindAlert Speaker's Bureau and Web Seminar Series.

The **National Forum on Brain Health**, held during ASA's annual Aging in America Conference, features nationally recognized experts in the field, as well as faculty from the MindAlert Speakers Bureau. Online seminars, in a three-phased approach, offer an introduction to the National Forum prior to the conference, presentations at the conference, and recordings of the National Forum sessions, made available after the conference.

The National Forum on Brain Health took root from the MindAlert lecture series, which was featured annually at ASA conferences, transcribed and published as monographs, and videotaped for wider distribution. MindAlert presentations have covered topics ranging from studies of the lives of centenarians and the benefits of social engagement, to the value of mental training programs and the link between improved cognition and physical activity.

As topics from the lectures percolated through the ASA membership, the number of practical applications throughout the United States grew exponentially. The **MindAlert Award**, initiated in 2001, provides a venue for nonprofit organizations to showcase their innovative approaches to fostering brain health in elders and demonstrating effective applications accessible to diverse communities.

Many award winners, with grants from the MetLife MindAlert Speakers Bureau, take their winning program models on the road for daylong workshops. These face-to-face interactions with local providers throughout the country offer hands-on assistance for replicating the models and customizing each to a specific community. To give the program broader visibility, ASA launched the **MindAlert Web Seminar Series** in 2010, featuring MindAlert Speakers Bureau faculty offering MetLife MindAlert online courses that reach hundreds of professionals. Continuing the translation of evidence-based research to practice, MetLife Foundation and ASA are committed to exploring topics at conference forums and in web seminars.

Visit the MindAlert website, which offers free, downloadable PDFs about brain health, at [www.asaging.org/mindalert](http://www.asaging.org/mindalert).

# The MindAlert Speakers Bureau

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## *Bringing Brain Health into Communities*

**T**he American Society on Aging (ASA), with generous support from MetLife Foundation, offers free educational resources that help older adults maintain and enhance cognitive function and mental wellness in later life. As innovative, community-based programs, Speakers Bureau selections have received the MetLife Foundation MindAlert Award for their effective research-to-practice approaches, which translate the latest

research findings on cognitive health in elders into practical health-promotion activities for diverse communities.

ASA is pleased to present a collection of pre-recorded MindAlert web seminars that delve into the most creative elder-targeted brain fitness programs in the United States. To access these free training modules, visit [www.asaging.org/mindalert](http://www.asaging.org/mindalert).

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### **Online Educational Resources: The 2011 MindAlert Web Seminar Series**

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#### **When I Grow Up, I Want to Be a Student: The Art and Science of Lifelong Learning Programs**

Presenter: Ruth Flexman, Ph.D.

Research has documented that lifelong learning contributes to the quality and length of life. Learn how effective programs offer opportunities for older adults to expand knowledge, develop new interests, and connect with old and new friends. Examples from the Osher Lifelong Learning Institute at the University of Delaware in Wilmington (2,100 members per semester), in Lewes (450 members), in the new Dover program (130 members the first semester), and in other programs illustrate how course content, marketing, administration, and volunteer contributions support a successful online learning venture.

#### **The Influence of Memory Training on Cognitive Aging and Functional Ability**

Presenter: Graham McDougall, Ph.D.

As individuals age, many experience a decrease in memory self-efficacy, that is, less confidence in their memory abilities—a belief that is directly related to their everyday memory performance. This web seminar focuses on one efficacy-based memory training program, SeniorWISE, and its longitudinal outcomes with a tri-ethnic sample.

### **An Intergenerational Computing Model to Empower Older Adults**

Presenters: Jean F. Coppola, Ph.D.; Barbara A. Thomas, R.N., M.A., M.S., F.N.P.; Lin J. Drury, Ph.D., R.N.; and Sharon Stahl Wexler, Ph.D., R.N., B.C.

Computing technology enhances quality of life and empowers older adults. When elders partner with intergenerational instructors, they learn how to use computers and become more energized for healthy aging in place. This two-part web seminar provides an overview of best practices and lessons learned to help people replicate a low-budget intergenerational computing program in their own agencies.

### **My Turn—An Educational Program for Adults Sixty Years and Older**

Presenter: Beverly Collier, M.B.A.

My Turn is an educational program at Kingsborough Community College in Brooklyn, N.Y., for older adults ages sixty and older. Older adults attend the college and take courses for credit, tuition-free. This web seminar provides an overview of the My Turn program, including its history, enrollment and registration, and special features.

### **The Buddy Program—Pairing First-Year Medical Students and People with Early-Stage Alzheimer’s**

Presenter: Darby Morhardt, M.S.W., L.C.S.W.

The goal of the Buddy Program, developed at Northwestern University in Chicago, is to provide a mutually enriching experience for medical students and individuals with early-stage dementia. The program is aimed at strengthening future physicians’ knowledge of and sensitivity to issues of aging and dementia, as well as offering individuals with dementia a mentorship opportunity. This seminar describes the development and step-by-step organization of the Buddy Program, shares outcomes and lessons learned, and shows how the program is being replicated at other medical schools.



# The 2011 MindAlert Award Winner: A Gem of an Intergenerational Program

The 2011 MindAlert Award Recognizes a Successful Regional Collaboration that Benefits Children and Older Adults.

**J**EWEL (Joining Elders with Early Learners), a joint program of New York-based Family Services of Westchester (FSW) and the Mount Kisco Child Care Center, was selected as the winner of the 2011 American Society on Aging–MetLife Foundation MindAlert Award. The MindAlert Award recognizes high-quality, innovative approaches to helping older adults maintain cognitive fitness. The JEWEL program was honored during the National Forum on Brain Fitness, held on April 27, 2011, in conjunction with the Aging in America Conference.

“The review committee found the JEWEL program’s shared site model to be innovative and unique, and we are extremely pleased to have an intergenerational program named the recipient of this year’s award,” said MetLife MindAlert Review Committee Member Ruth Heller,

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*A shining facet of JEWEL is that old and young people have formed a symbiotic relationship.*

program director at the University of Oregon’s Osher Lifelong Learning Center in Eugene, Ore. Review Committee members noted that this program truly can engage older adults cognitively, physically, and socially.

A melding of two programs—the Mount Kisco Child Care Center and FSW’s My Second Home

Adult Day Program—JEWEL is housed in one 20,000-square-foot residential facility in Mount Kisco, N.Y., a site specially designed to promote interactions between generations, while affording each group dedicated space to meet the special needs of program participants. My Second Home is a social model, adult day program that provides a safe, nurturing, and home-like environment for older adults. Almost 90 percent of participants have some degree of cognitive impairment, from mild memory loss to dementia—including Alzheimer’s Disease.

## **Mining and Polishing a JEWEL**

Dorothy Jordan, executive director of Mount Kisco Child Care Center, was just beginning to learn the benefits of intergenerational activities, and was responsive to the idea of working with

the My Second Home program. The more she researched the idea, the more she heard people fondly recalling their

youth in multigenerational households. The two programs began their collaboration in 1998, when they still occupied separate sites, and both moved into the new building in 2002.

Today, Jordan hosts 160 children, ages three months to eleven years, at Mount Kisco Child Care and Rina Bellamy, director of My

Second Home, has ninety adults, ages 90 to 97, who have some level of physical or mental

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***One preschooler likes being with older adults because ‘I can see the past in a different way when they tell me.’***

impairment, coming daily to My Second Home. The JEWEL program brings older adults from the My Second Home program and children from Mount Kisco together at their shared site several times a day in both structured activities and informal interactions. An intergenerational coordinator works with staff of both agencies to design activities that are developmentally appropriate and meaningful, including reading, arts and crafts projects, exercise and recreation, baking, picnics, gardening, music, or simply chatting.

One of the beauties of JEWEL is that parents of the children in daycare can go to work knowing that their kids are in doubly good hands, and elders’ caregivers in the My Second Home program get a well-deserved respite. Both Bellamy and Jordan like to think of the program as a neighborhood, not a daycare center—a neighborhood that duplicates another era, when far-flung families weren’t the norm.

### **Banishing Stereotypes, Bonding Generations**

New York-based Fordham University’s Ravazzin Center on Aging found that preschoolers in the JEWEL program tended to view older adults more positively than those in a control group that had little interaction with elders. Jordan believes the program not only is beneficial to both populations but also will improve overall relations between generations as stereotypes are constantly broken down. One preschooler reported, “I like



Rina Bellamy (left) and Dorothy Jordan accept the 2011 MindAlert Award for their intergenerational JEWEL program.

being with [the elders] because I can see the past in a different way when they tell me.”

Today, JEWEL sees the immense benefits of intergenerational interaction every single day. Program evaluations have shown that older adults in the JEWEL program demonstrate improvements in cognitive functioning, socialization, and expressiveness. More than 90 percent of caregivers noted a positive change in their older adult family member or friend after attending the program, including an increase in self-esteem and self-worth. A shining facet of this program is that old and young populations have definitely formed a symbiotic relationship.

“JEWEL can fulfill that need to feel needed, valued, and validated,” says Bellamy.

To learn more about the JEWEL program, contact Dorothy Jordan, executive director of Mount Kisco Child Care Center, at [djordan@mkccc.org](mailto:djordan@mkccc.org), and Rina Bellamy, director of My Second Home Adult Day Program, at [rbellamy@fsw.org](mailto:rbellamy@fsw.org).

For more information about the MindAlert Award, including how to start a community-based brain fitness program or receive training from the MindAlert Speakers Bureau, visit [www.asaging.org/mindalert](http://www.asaging.org/mindalert).

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*More than 90 percent of caregivers noticed JEWEL’s positive influences—increased self-esteem and self-worth—upon their elder family members and friends.*



The JEWEL program in action: a preschool child and his older adult friend take part in the daily bonding of Breakfast Buddies.

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**Photo credits**

Pg 33 Robert Levy

Pg 34 Courtesy Mt. Kisco Child Care Center

Compiled by Alison Biggar

# The MindAlert Award Winners, Past to Present

With generous funding from MetLife Foundation, the American Society on Aging's (ASA) MindAlert Program trains members on the newest findings in cognitive fitness, and disseminates information on current research and innovative programs that help older adults maintain and improve cognitive and mental function in their later years.

Now in its eleventh year, the program has honored thirty-five winners with the annual MindAlert Award. ASA and MetLife Foundation are pleased to offer a complete list of the MindAlert Award recipients, synopses of the award-winning programs, and updates on each program.

## The 2001 MindAlert Award Winners

### The Adult Activities Center

*Alzheimer's Family Services Center  
(formerly Adult Day Services of Orange County),  
Huntington Beach, Calif.*

**A**lzheimer's Family Services Center (AFSC) is a private nonprofit organization offering comprehensive care, support, education, and outreach services for persons with Alzheimer's Disease (or another dementia) and their families. Early-stage services include the Adult Activities Center (now called the New Connections Club), a specialized day program for active early-stage individuals able to engage in a physically and mentally challenging set of therapeutic activities; JumpStart, ongoing weekly parallel support

group sessions for early-stage individuals and their care partners; Caregiving Essentials, a monthly three-hour class geared toward informal caregivers of loved ones with Alzheimer's Disease or another dementia; and Adjusting to the Diagnosis, a three-time set of counseling sessions designed to help persons with Mild Cognitive Impairment (MCI) or early Alzheimer's come to terms with the diagnosis and prepare for the future.

In the past ten years, the AFSC has continued to enhance programming for individuals and caregivers living with MCI or early Alzheimer's Disease. The Adult Activities Center was transformed into the New Connections Club for active early-stage individuals able to engage in a physically and mentally challenging set of research-based therapeutic activities. As

research into effective psychosocial interventions advanced, the New Connections Club evolved into a set of activities that help maintain cognitive, emotional, and functional well-being.

Memory Boosters, Living with Alzheimer's Disease, and You're Not Alone, have also evolved over time in response to caregiver feedback and are now JumpStart, a nationally recognized support and education program for early-stage individuals and their care partners. Another outgrowth of Living with Alzheimer's Disease is Caregiving Essentials, a single three-hour class designed to empower caregivers with knowledge and skills critical for addressing everyday challenges.



Members of the New Connections Club play Scrabble at the Alzheimer's Family Services Center in Huntington Beach, Calif.

Finally, since winning the MindAlert Award, the AFSC has added short-term mental health counseling services. Dr. Cordula Dick-Muehlke, executive director of Alzheimer's Family Services, says, "Winning the MindAlert Award affirmed the importance of early stage programming to AFSC's constituents, enhanced our credibility as a cutting-edge center for the care of persons with Alzheimer's Disease or another dementia, and helped us expand from an adult day services provider into a center offering

comprehensive care, support, and education interventions for those with Alzheimer's or other dementia."

### Mind Your Mind: Workshops for Mental Fitness

Beatrice Seagull, Rutgers University, New Jersey

**M**ind Your Mind is a systematic, well-rounded mental activity program that promotes mental fitness in older adults. Since 1992, Beatrice Seagull, professor emeritus at Rutgers University, New Jersey, has presented Mind Your Mind workshops to nearly 2,000 participants in adult community facilities. The program emphasizes elders' potential for self-improvement based on the benefits of continued intellectual stimulation. It offers a combination of practical exercise, factual information, and strategic support. Its primary motivation is not just "use it or lose it!" but "use it and improve it!"

Since 2001, Mind Your Mind has greatly expanded, and in 2005 published a book, *Mind Your Mind, A Whole Brain Workout for the Older Adult*, adapted from the MindAlert Award-winning workshop. The book is organized around nine cognitive skills, with exercise workouts for each. Mind Your Mind has reached many elders enrolled in Elderhostel, lifelong learning groups, as well as organizations working with older adults. They are still actively presenting Mind Your Mind to senior groups.

"The ASA MindAlert Award certainly helped as a marketing tool as we reached out to senior organizations, and was very helpful in reaching out to our publisher, The Attainment Company," said Beatrice Seagull.

### Elder Rehab

The Department of Speech and Hearing Sciences, University of Arizona, Tucson

**T**his is a cognitive, language, physical fitness, and "partnered volunteering" program for people with mild to moderate Alzheimer's Disease. The program's purpose is to improve

the quality of life of people with dementia, as well as their caregivers' lives, and to slow the rate of cognitive decline. Elder Rehab operated between 1996 and 2001. A continuing education correspondence course based upon the program was published in January 2005. For details on outcomes, visit [www.u.arizona.edu/~sarkin/elderrehab.html](http://www.u.arizona.edu/~sarkin/elderrehab.html).

### My Turn Program

*Kingsborough Community College,  
City University of New York, Brooklyn, N.Y.*

**K**ingsborough Community College is a comprehensive college emphasizing liberal arts and vocational education. My Turn students are a part of the tuition-free college education program for New York state residents who are sixty years of age and older.

This program, a two-time winner of the MindAlert Award (it also won in 2006), My Turn is one of the first programs in America to offer a college educational experience to older adults, and serves about 2,000 older students in four semesters each academic year. The program began as an educational offering for older adults, and quickly evolved into a multidimensional experience including participation in the My Turn Club and volunteering in a variety of positions at the college like Talking Buddies, which is a collaborative project with the English as a Second Language (ESL) Program. In My Turn Outreach, Kingsborough College professors travel to a local nursing home and offer monthly lectures. My Turn demonstrates that learning can take place in the classroom, in conversations, while volunteering, and at home, no matter where it is.\*

### Rivier Institute for Senior Education (RISE)

*Rivier College, Nashua, N.H.*

**R**ISE is part of the Institute for Learning in Retirement movement, which includes about 250 organizations in the United States

and Canada. Participation in RISE has grown from eighty-four students the first semester, to 238 in September 2000. The program offers a ten-week series of classes each fall and spring—more than thirty course offerings per semester—for people older than age 55. Approximately 75 percent of all classes are taught by RISE members.\*

### The 2002 MindAlert Award Winners

#### Early-Stage Alzheimer's Disease Support Groups

*Robyn Yale, Clinical Social Worker and Consultant*

**O**ne of the first support group models for individuals in the early stages of Alzheimer's and their families has been the most widely replicated nationally and internationally. Robyn Yale's book, *Developing Support Groups for Individuals with Early-Stage Alzheimer's Disease*, training workshops, and materials have made the program easy to replicate, and it has proliferated in such settings as Alzheimer's Association chapters, diagnostic clinics, senior centers, and assisted living facilities. Many say that Yale's work facilitated a movement that has changed the face of care and support provided to those with Alzheimer's: her work has given a voice to people with the disease.

The original model is still viable and effective, and Yale has since developed additional program components, including support groups for people with memory loss living in residential settings, and an individual counseling protocol for people with early-stage Alzheimer's—another service that urgently needs to become more widely available.

Many with Alzheimer's Disease have benefited over the years from these early-stage support groups, which help them understand and cope with the illness and encourage them to live full and meaningful lives for as long as possible. The MindAlert Award was an important part of Yale's efforts to raise awareness,

disseminate her clinical and research findings, and equip a myriad of professionals with the skills and courage to implement this program where it had never before existed.

### **Mind Works: The Mental Fitness Connection**

*Connie Lynch, Ph.D., San Francisco Bay Area*

**J**ust as physical fitness is body conditioning through physical exercise, the Mind Works mental fitness program is brain conditioning through mental exercise. The program uses various thinking skills including awareness, communication abilities, curiosity or inquisitiveness, and the willingness to accept mental challenges. Members of the Mind Works program indicate that they have more self-confidence and self-esteem as they master the challenges. They also report that their memories have improved and that they are more aware of their surroundings.\*

### **Generations on Line**

*Philadelphia, Pa.*

**G**enerations on Line (GoL) has simplified the Internet for elders through an educational software program that provides on-screen, step-by-step instruction. This self-teaching software program helps older adults overcome barriers of access, skill, and intimidation that prevent them from using and enjoying the Internet. This program and its adjunct materials are available in nursing homes, HUD-subsidized housing, retirement communities, senior centers, and public libraries through a subscription rate paid to the nonprofit.

The GoL mission has remained highly focused on the neediest elders, and the e-mail function has been refined to make it more robust, plus there's an added Spanish-language version, a Canadian version, and a Medicare tutorial. For the past two years they have partnered with government-funded Senior Service America, and have greatly improved the

peer coaching element of the program. But the initial programmatic concepts remain in place.

“Winning the MindAlert Award added credibility, confidence, exposure,” said Tobey Dichter, CEO of Generations on Line. “Winning the most prestigious award in aging certainly had a major impact on our access to funding and potential users. We are forever grateful.” For more information on the program, visit [www.generationsonline.org](http://www.generationsonline.org).

### **Lasell Village**

*Lasell College, Auburndale, Mass.*

**L**ocated on the Lasell College campus, the Village was the first “living and learning” continuous care retirement community. Village residents are required to plan and satisfy a continued learning program as a condition of residency.

“The MindAlert Award was a valuable external validation of a very new idea, at the time, of an educational program within a retirement community. It was timely in its awarding, in our second year after opening, to lend credibility to the idea of a ‘living and learning’ community that is prospering ten years later,” says Paula Panchuck, executive director and Dean of Lasell Village at Lasell College.

### **The 2003 MindAlert Award Winners**

**CyberSeniors/CyberTeens, CyberHealth, CyberSeniors.org**

*Portland, Maine*

**T**his program's intergenerational partnership raised awareness of the many ways computer and Internet technologies can help elders retain independence as they age. It provided training resources that allowed elders to develop computer skills at their own pace; taught elders how to locate and use meaningful content about health and well-being on the

Internet, and communicate safely online. Available in Spanish and English, CyberHealth was an inclusive, community-based, interactive health literacy program.\*

### Creativity and Dementia

*University of British Columbia,  
North Vancouver, B.C.*

The concept of linking creativity with dementia care, developed by Dr. Dalia Gottlieb-Tanaka in late 1990s, promotes the use of creative expression in older adults with dementia. Programs that are built on this premise provide opportunities for people with dementia to socialize, express themselves, and be valued. Two specific programs were highlighted for the award—a training workshop for caregivers of seniors with dementia, and an exhibit of art produced by elders with dementia that is sponsored by the Society for the Arts in Dementia Care.

The Creative Expression Activities Program was the beginning of a new approach to and understanding of how engagement in creative activities could positively impact quality of life for people with memory impairment. The theory that propelled the program turned very quickly to an approach that could be adopted



Dr. Dalia Gottlieb-Tanaka (right) engaged in an art session with Sylvia Sinclair, a retired art teacher living with dementia.

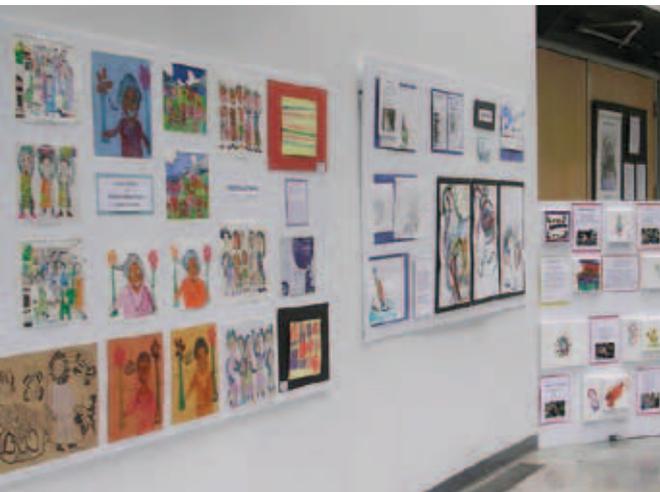
and adapted in psychosocial interventions in dementia care, with a focus on the person and not merely their medical condition. This approach was the base for Society for the Arts in Dementia Care. The Society was established in 2005, shortly after the award was given and provides educational opportunities all over the world. For more information please visit [www.cecd-society.org](http://www.cecd-society.org).

“The struggle to improve the quality of life of people with dementia still goes on, and winning an award gave the initial push in inspiring and educating others,” says Dr. Gottlieb-Tanaka.

### Autobiographical Studies Program

*UCLA Center on Aging and UCLA Extension,  
Education Division, Thousand Oaks, Calif.*

The Birren Autobiographical Studies program enriches the lives of adults through writing, sharing, and preserving life stories and experiences. The program is based on Guided Autobiography, a course that helps individuals organize their life stories. Participants are led through life themes and priming questions to evoke memories. Writing and sharing life stories releases



The Society for the Arts in Dementia Care displayed its permanent art collection at the 2006 Conference on Creative Expression, Communication, and Dementia at Emily Carr University in Vancouver, B.C.

cognitive and motivational potential among students. As one student said, “I gained a great deal of self-understanding and regained memories I might never have otherwise appreciated.”



Members of a Guided Autobiography class work on an exercise to help them organize their life stories.

The program has grown considerably since winning the MindAlert Award. It now offers Guided Autobiography Instructor training online, and has trained more than seventy-two Guided Autobiography instructors worldwide in its online classroom. “Winning the award gave us professional credibility,” says Guided Autobiography instructor Cheryl Svensson. “The MindAlert workshops we have participated in expanded our outreach efforts to promote Guided Autobiography nationwide.”

## The 2004 MindAlert Award Winners

### Senior Peer Counseling

*Center for Healthy Aging, Santa Monica, Calif.*

**W**hile not new, peer counseling appeals to older adults who need emotional support, yet are uncomfortable with professional psychiatric services. The peer counselors benefit by

learning new skills, interacting with other counselors, becoming involved in an important community service, and developing valuable relationships with clients. This program is innovative in its focus on self-awareness and self-learning.

In 2007, the Center for Healthy Aging merged with WISE Senior Services to become WISE & Healthy Aging. The Peer Counseling program at WISE & Healthy Aging has remained consistent in its goals and philosophy; they continue to provide emotional support to seniors by addressing the issues of isolation, loss, and impaired personal relationships. Future plans include implementing workshops and support groups to address the timely and prevalent problems of financial stressors, in addition to the emotional and physical tolls of hoarding.

Winning the MindAlert Award impacted the program in that peer counselors visited a more diverse group of communities, which heightened their awareness and sensitivity toward different cultural issues, improving counselor–client relationships.

### The Buddy Program

*Northwestern University Cognitive Neurology & Alzheimer’s Disease Center, Feinberg School of Medicine, Chicago, Ill.*

**T**he Buddy Program matches first-year medical students with individuals diagnosed with early Alzheimer’s Disease or related dementias. It allows students and diagnosed individuals to get to know each other on a personal rather than a clinical level. The Buddy Program helps meet intellectual and social needs by offering a mentoring opportunity for a person with dementia within a preferred level of activity suited to their capacity. The program provides participating students with increased knowledge about Alzheimer’s, as well as positive experiences with persons with dementia.

The Buddy Program has expanded to include research scientists as well as first-year



First-year medical student Julie (left) is matched with Pati; the two are buddies in a program that provides students and research scientists with increased knowledge about Alzheimer's.

medical students paired with persons with early-stage dementia. It has now been successfully replicated in three sites: Boston University Medical School, Dartmouth Medical School, and Banner Alzheimer's Institute at University of Arizona, Phoenix.

### The Illuminated Life

*Osher Lifelong Learning Institute, University of Hawaii at Manoa, Honolulu, Hawaii*

The Illuminated Life (TIL) workshop is a comprehensive, structured life-review program designed to help independent older persons enhance psychological functioning. The workshop's retrospective-proactive orientation assists participants in gathering insights about their lives, in order to consider creative post-retirement roles and integrate a lifetime of learning. Research conducted in 2000 with older women completing the workshop showed significant gains on a measure of psychological well-being in contrast to a control group showing no change.

The Illuminated Life workshops continue, as do several offshoots. Winning the MindAlert

Award gave TIL much more visibility on campus, bolstered their reputation, and helped build an overall case for securing endowed funding from The Bernard Osher Foundation (the program received a \$1 million endowment from the Osher Foundation in 2005, one year after winning the award).

### The 2005 MindAlert Award Winners

#### TimeSlips

*Center on Age and Community, University of Wisconsin, Milwaukee, Wis.*

The TimeSlips creative storytelling method opens storytelling to everyone by replacing the pressure to remember with encouragement to imagine. TimeSlips is used in all types of settings: adult day services, senior centers, memory clubs, support groups, skilled nursing facilities, assisted living, and intergenerational groups. Facilitators ask open-ended questions about a provocative image or idea and weave all responses (verbal or gestural) into a story.



Oreda, a participant at Luther Manor, a Milwaukee day center, enjoys a TimeSlips session where a facilitator draws out stories from a provocative image.

TimeSlips concentrates on the individual and strengthens teamwork among staff, from direct-care workers, housekeeping and nutrition staffs, and chaplains, to activity staff, social workers, nurses, and administrators. Research shows that TimeSlips storytelling sessions improve the quality and quantity of interactions between staff and residents with dementia, and improve staff attitudes toward working with people with dementia.

TimeSlips still offers an In-Person Workshop training. In September 2011, they are launching an interactive website where people can read, write, and share stories online or in person. They will also launch a new Online Training and certification program.

### **Mental Fitness for Life: 7 Steps to Healthy Aging**

*Simon Fraser University at Harbour Centre,  
Vancouver, B.C.*

This program engaged older adults in progressive steps to mental fitness through a series of warm-up activities—quizzes and puzzles, followed by one of seven key components of mental fitness—and concluded with practical activities to incorporate the program into a daily routine. One of the early programs teaching mental wellness, Mental Fitness has been replicated throughout North America.\*

### **Memory Difficulties: Should I Be Worried?**

*Oregon State University, Corvallis, Ore.*

The curriculum developed for Oregon State Extension Service reaches multiple urban and rural audiences throughout Oregon and other state extension services with information on normal aging and memory loss.

This program was a stepping stone to the development of a five-module online series, Mastery of Aging Well, which launched in late 2009. It was co-branded with AARP Oregon, and is available nationwide as a free online

educational option for older adults and their families, a five-pack DVD, and an interactive fee-based course through Oregon State University's Outreach and Engagement program. For more information, visit <http://outreach.oregonstate.edu/aging-well>.

"The award reinforced nationwide interest in the topic, and in the importance of delivering practical, research-based information on aging in an engaging format," says Sharon Johnson, program designer and instructor.

### **VOCAL (Voices of Community Action and Leadership)**

*Westchester Public/Private Partnership for  
Aging Services, Mt. Vernon, N.Y.*

The VOCAL program sought to promote intergenerational advocacy for aging-related issues and aimed to strengthen the capacity of people of all ages to participate in government and keep communities vibrant. Through active engagement in current issues and events, the program provided stimulating, meaningful action that enhanced cognitive functioning.\*

### **The 2006 MindAlert Award Winners**

#### **Focus on SPECS: Social, Physical, Emotional, Cognitive, & Spiritual**

*Macklin Intergenerational Institute, Findley, Ohio*

The SPECS program promotes multi-age connections and creates opportunities for individuals to develop socially, physically, emotionally, cognitively, and spiritually. This enriched environment is a stimulating, age-integrated setting that provides care and ongoing interactions for children and older adults. Both young and old thrive and benefit as multigenerational interactions promote self-esteem and confidence, and improve physical and cognitive function.

Today, the core of the SPECS program remains the same: to promote intergenerational



Generations connect with hugs and smiles through the SPECS program.

understanding how the brain works, and on how to maximize brain function and brain health, particularly in the second half of life. Staying Sharp disseminates its message through a coordinated multimedia effort that includes live presentations, the Web, TV broadcasts, and print materials. Leading neuroscientists conduct informal discussions about the brain for audiences of 200 to 400 people. Staying Sharp has five core publications (English- and Spanish-language versions) that target critical aspects of cognitive fitness. Staying Sharp also has print and e-books available on its website, <http://www.dana.org/dana/alliances/programs/stayingsharp/>

### My Turn

*Kingsborough Community College,  
Brooklyn, N.Y.*

(Please see the entry under the 2001 MindAlert Award Winners.)

connections between older adults and young children in the daycare setting. The benefits of connecting the young and the old are clear; when children engage with older adults, the elders feel better about themselves because they can give back to others despite the limited opportunities imposed by living in an institutional setting.

There was much excitement over winning the award; it motivated the staff and SPECS was able to show others that the program was worthy of recognition, which added to its status among funders and people in the local community.

### Staying Sharp

*AARP and the Dana Alliance for Brain Initiatives,  
Washington, D.C.*

**S**taying Sharp is a joint project of the Dana Alliance for Brain Initiatives and NRTA: AARP's Educator Community. It focuses on

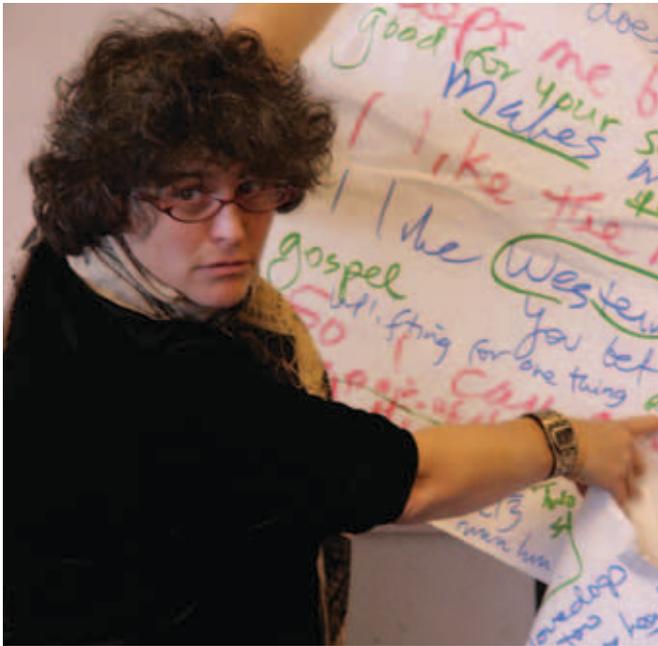
## The 2007 MindAlert Award Winners

### Songwriting Works

*Port Townsend, Wash.*

**S**ongwriting Works Educational Foundation advocates for and provides full access to creative music programs for a diverse spectrum of elders across the cognitive and health spectrum, their family, friends, health providers, and advocates. Songwriting Works gives elders, including those with early- to late-stage dementia, new forums for self-expression, experience in the arts, and an opportunity to leave a legacy of story and song.

Through highly interactive exchange, a facilitator solicits ideas for topics, themes, and musical genres. Elders direct the sessions as their remarks are recorded on easel pads; melodies spring from the group and are repeated and



Judith-Kate Friedman jots down participants' lyrics and ideas while facilitating a songwriting session at Olympic Community Action's Encore Center in Port Angeles, Wash.

refined to match words. Songwriting Works also offers Music for Wellness and Songwriting for Cognitive Fitness programs, and trains health and music professionals in facilitating the Songwriting Works method.

In 2007, Dr. Theresa Allison conducted a nine-month study of the Songwriting Works method and program impacts in a long-term-care facility. Her findings, published in the *Oxford Handbook of Medical Ethnomusicology*, demonstrated health and social benefits of participation in such programs for eldercare recipients across the cognitive spectrum and the community in which they live.

Songwriting Works now engages family caregivers in composing songs with their loved ones, trains health and arts professionals in their method, and



Songwriting Works participants recall the fine points of driving a new Chevy in the 1920s at the Olympic Community Action's Encore Center, Port Angeles, Wash.

creates intergenerational music-making and “music for wellness” tools. Songwriting Works offers certification training in its method for professional songwriters.

Because of the MindAlert Award and the MindAlert Speakers Bureau, Songwriting Works has been able to broaden relationships with providers of aging and health services throughout the United States. One- to three-day trainings have been developed; they are now offered nationally, and are available to caregivers. Trainings have taken place in more than a dozen U.S. cities, and have led to webinars, a presentation at the MetLife Foundation-sponsored 2010 National Forum on Brain Fitness, and keynotes and presentations at numerous conferences.

### Everyday Memory Clinic

*Institute on Aging at the University of Florida,  
Gainesville, Fla.*

The Everyday Memory Clinic has trained more than 400 older adults in using learned memory skills. Participants report increased confidence and feelings of control over memory, increased use of memory strategies, and improved memory test scores. Participants also retain these gains over time. This was the first training program to show gains in both beliefs (confidence and control) and test scores. This practical model enhances the basic memory skills required for independent living, as we age.

The Clinic program continues apace, and the program workbook is still available for health seniors (groups or individuals) to use for improving their memory. Research is ongoing into the program’s effectiveness, and there are plans to combine memory training with other types of training for elders, and to adapt the program to serve individuals with more serious memory impairments, depending upon funding.

“Winning the MindAlert Award made it possible for me to join the Trainer’s Bureau for ASA. It has been an amazing experience to travel the country and encourage people to offer

memory training to seniors, and show them how to get started on a training program,” says Robin West, Ph.D., director of Everyday Memory Clinic.

### The Intergenerational School

*Cleveland, Ohio*

The Intergenerational School (TIS) is breaking new ground in the fields of public education and intergenerational programs as a model of lifelong learning, intergenerational health, and purposeful aging. The only known public intergenerational school in the United States, TIS builds older adult volunteerism and volunteerism of other community members, including college and pre-professional students, into the structure of the K-8 educational experience. The school provides meaningful activities for adults, improves the children’s academic skills, and instills a profound sense of caring and respect across generations.

Since winning the MindAlert Award, which brought more national prominence to their program, TIS has expanded the number of young students and added more grade levels. They have obtained grants to replicate TIS in other sites, including Tokyo and Cleveland, and have expanded their work in brain fitness and health with collaborating organizations such as AARP and the SharpBrains brain fitness marketing research firm. They are doing more work in Positive and Active Aging and initiating an Intergenerational Health and Wellness Practice.

### The 2008 MindAlert Award Winners

#### Borchardt Cyber Café

*St. Barnabas Senior Center of Los Angeles,  
Los Angeles, Calif.*

This program uses innovative intergenerational training where children act as mentors to older immigrant adults and teach

them how to navigate online to access newspapers in their native language. As well, there's a video program for youth and elders to document their lives and learning.

There are now ten state-of-the-art workstations equipped with cameras, scanning and printing capabilities, Internet, e-mail, and a full complement of software programs. Today, 500 enrolled members and others use the Cyber Café to learn computer use one-on-one from volunteers, engage in self-teaching, and apply their computer skills to stay in touch with loved ones. They can also play stimulating games, read periodicals in their native language, research medical information, shop online, and more.

In 2010, the Center launched a new program developed from the success of the Cyber Café. They now operate a free mobile computer educational program to teach computer skills and Internet access techniques to elders throughout Los Angeles. The program is hands-on and in-person, administered by qualified instructors, and is tailored to the learning styles of older adults, taking into account language differences and cultural sensitivity.

**The Dancing Heart:  
Vital Elders Moving in Community**  
*Kairos Dance Theatre, Minneapolis, Minn.*

**T**he Dancing Heart is an intergenerational dance company reaching out to people with dementia and engaging elders in creating seated dance and movement. This program exemplifies inclusion and equity by engaging people with varied abilities to explore how dance, music, and story revitalize and bring communities together, resulting in measureable health benefits and cost of care savings.

Since receiving the award, The Dancing Heart has been able to go to eight sites per week instead of two, added several staff, and have fifteen partnering sites (up from two).



Participants enjoying a Dancing Heart exercise with the Kairos Dance Theatre.



Saxophonist Irv Williams and artistic director Maria DuBois Genné leading a Dancing Heart exercise.

Nearby St. Catherine University has conducted a series of mixed method research studies of the program, published in June 2011, and The Dancing Heart will be featured in a national PBS documentary called *Arts and the Mind*, to be aired in the spring of 2012.

In 2011, their collaborative partners, Ebenezer Fairview and Wilder foundations each received a Minnesota Aging Services Excellence

& Innovation Award for their work with The Dancing Heart.

### Senior Center Without Walls

*Oakland, Calif.*

Senior Center Without Walls (SCWW) offers activities, friendly conversation, and an assortment of classes and support groups to homebound elders and those who find it difficult to go to a community senior center. From the comfort of their homes, elders connect to SCWW using their own telephones.

The SCWW has grown tremendously since winning the MindAlert Award, expanding their service area to the entire state of California and enrolling many more people in the program. There are now a greater number of telephone groups and classes, and more volunteer facilitators and speakers. The award “definitely increased SCWW’s visibility, and has been helpful in outreach efforts,” says Terry Englehart, SCWW’s director.

### The 2009 MindAlert Award Winners

#### The Memory Academy

*Castro Valley, Calif.*

The Memory Academy is a sustainable, accessible, and affordable research-based educational program dispensing information to students on neuroscience, aging, and memory. It provides an opportunity for students to practice activities that can help them stay strong, sharp, and independent by enhancing mental and physical fitness. Students learn about changes that accompany aging, and ways to adapt to them. Lectures explore the causes of memory problems, brain function and anatomy, and the effects of stress, nutrition, and laughter. There are also discussions incorporating the latest research on aging, Alzheimer’s, and other dementias. The Academy provides group

activities that encourage social interaction, and individual activities—from Sudoku to juggling—that challenge minds by engaging and working all parts of the brain and the body.

Because of California’s adult education budget cuts, some program providers have been let go, and some have moved to other states and offer the program through OSHER Lifelong Learning, senior centers, rehabilitation facilities, and recreation departments. Fees, which were nominal and allowed low-income elders to benefit, are now more substantial in order for the programs to be self-supporting.

“Getting the national recognition has allowed the program to be offered at other locations, states, and countries. Hopefully, when California gets out of the [financial] hole it is in, we will once again be able to offer the program as it was originally intended—affordable and accessible to all those interested in aging with power,” says Diana Nohr, Memory Academy instructor.

#### Gerontechnology Consortium of Westchester

*United Hebrew Geriatric Center,*

*New Rochelle, N.Y.*

This consortium is a collaboration of several New York organizations and universities formed to connect older adults to technology through civic engagement, in an intergenerational environment. Specially trained undergraduates assist older adults with overcoming technology fears through a series of one-on-one personal contacts, assistive software, and other technologies. The project is centered around a hands-on learning gerontechnology course for undergraduates to better understand the aging process, gain skills in instructing elders, and learn computing technology, while older adults benefit from an individualized and non-threatening learning environment. Students also are exposed to career opportunities in fields relating to geriatrics, and they demonstrate improved perceptions of older people.



Resident Tony and student Daniel Zaccaro on a Telikin computer at Willow Towers Assisted Living Residence in New Rochelle, N.Y.

Since winning the MindAlert Award, the Consortium has expanded beyond Westchester to New York City, and works with a full spectrum of older adults, from low-income to wealthy, from in-agency consults to visits in the community. It is able to do more assessments, too, testing for geriatric depression and activities of daily living, plus testing young undergraduate teachers for attitude and advocacy toward older adults.

The award led to a domino effect, whereby one connection garnered another, from collaborating on research with Telikin.com (touch-screen computers) and connecting with technology experts like Robin Raskin, to producing television programs with Sherri Snelling. “ASA has been the most instrumental agency in collaborating with others around the country because of its vast interest in many forms—written, media, webinars—it has infused the project with all these aspects, and exposed it to the populace at large,” says Jean F. Coppola,

a member of the founding gerontechnology research team.

**Performing Arts at University of Delaware  
Academy of Lifelong Learning  
(The Osher Lifelong Learning Institute)**  
*University of Delaware, Newark, Del.*

**T**he Osher Lifelong Learning Institute at the University of Delaware (formerly the Academy of Lifelong Learning) offers opportunities for older adults to express themselves, build cognitive reserve, and form social connections through an expansive Performing Arts program that is integrated into the academic curriculum. A desire to participate is the only prerequisite for members.

The Performing Arts programming has become more widely acknowledged since receiving the MindAlert Award. While the Wilmington program continues with about eighty courses in fine arts, performing arts, and arts



The 65-member chorus gives a concert at Osher Lifelong Learning Institute, University of Delaware, Wilmington.

appreciation, changes have occurred, including the name, which is now Osher Lifelong Learning Institute at the University of Delaware in Wilmington, Lewes, and Dover. The Wilmington program began in 1980 and has 2,100 members and 225 courses per semester. Lewes began in 1989 and has 450 members and 55 courses. In fall 2010, a new program opened in Dover with 125 members and 22 courses.

New courses and new groups are forming continuously and more members have become involved.

### Stagebridge Oakland, Calif.

**F**ounded in 1978, Stagebridge is the premier senior theater in the nation, and the only professional theater training company for older adults on the West Coast. The company comprises about 150 actors and storytellers who average seventy years of age. The company's "Storybridge" program is a nationally acclaimed model for bringing older adults into schools as storytellers to mentor children. The Performing Arts Training Institute (PATI) provides a curriculum of training in a wide range of performing arts classes (acting,

storytelling, playwriting, dance, improv, and singing). PATI also trains older professional artists to teach performing arts classes throughout the Bay Area elder community, thereby spreading opportunities for older adults to participate.

After winning the MindAlert Award, they began to introduce the Diploma Program in the Performing Arts Training Institute. PATI has added new depth to the educational programs, and has made it possible for Stagebridge to challenge older adult performers and audiences in new ways, including a series of noontime "Life in the Theatre" presentations featuring intimate interviews and discussions with some of the Bay Area's most prestigious talent. Students were given



Stagebridge's Antic Witties touring improv group.

opportunities to direct, write, and act in plays performed at Berkeley's Ashby Stage to sold-out audiences; individual students were given opportunities in independent study and internships, along with classes; and during the second half of the grant period in 2011-12, students will be given opportunities to teach classes for Stagebridge.



Goofing around at Stagebridge's Performing Arts Camp for Adults 50+ in Oakland, Calif.

## The 2010 MindAlert Award Winners

### SeniorWISE

*University of Texas Foundation, Austin, Tex.*

**S**eniorWISE (Wisdom Is Simply Exploration) was a five-year longitudinal research study to determine whether or not memory training improves the memory performance and function of older adults. SeniorWISE followed 265 elders for two years, 140 of whom participated in an eight-week memory class. They were evaluated on their performance on a number of real-world memory tasks, such as dialing telephone numbers and reading medication labels. The memory-training group made significant improvements in cognitive function,

use of memory strategies, memory self-efficacy, functional ability, and decreased symptoms of depression. Minority elders in the treatment group were significantly less anxious and showed distinct memory improvement.

SeniorWISE is now being delivered to a group of 100 older adults who are living with poor memory function. The investigation is being funded by the St. David's Community Health foundation throughout Travis and Williamson counties in Central Texas.

### Let's Talk

*Alzheimer's Association, St. Louis, Mo.*

**L**et's Talk is an innovative and cost-effective peer-to-peer telephone support program by and for people who have early-stage dementia or memory loss. It is a strengths-based model that builds on and supports intact social skills of people with early-stage dementia. Trained call volunteers, who themselves have mild memory loss, offer twice monthly telephone-based support to call

recipients, who also have memory loss. Memory-impaired "buddies" share coping strategies, provide emotional support, offer friendship and empower one another through sharing their personal experiences. The program reaches underserved, low-income individuals who are minority, live rurally, are homebound, are socially isolated, and who are living alone.

Despite staff cutbacks, the program now serves a larger number of call recipients than it had been; since winning the award, Let's Talk has received a grant that allows them to provide more care consultations to families that are coping with early-stage dementia.

"The MindAlert Award provided added credibility to our program. We mention it to potential participants and their families, as well as to potential funders, and are currently

working on developing a funding stream that would sustain the program for several years,” says Debra Bryer, Alzheimer’s Association early-stage coordinator.

### Active Generations

*The Oasis Institute, St. Louis, Mo.*

Since its founding in 1982, OASIS has become one of the most experienced and successful organizations providing lifelong learning and service opportunities for mature adults. Active Generations engages older adults in the fight against childhood obesity. An intergenerational nutrition and activity program, Active Generations partners older adults with children in third to fifth grades to implement a nationally recognized school nutrition and physical activity curriculum. The program serves the “whole person,” and supports activities needed to improve physical health for older adults, while offering important additional factors that support long-term cognitive health, such as social engagement, encouragement of healthy diet choices, and community-based support systems.

CATCH Healthy Habits has made significant program improvements since having implemented the Active Generations pilot and receiving the ASA MindAlert Award. Working with the same curriculum, nutrition, and physical fitness experts who designed CATCH, the CATCH Healthy Habits curriculum has been expanded to include children in kindergarten to second grades, along with those in grades three through five, with sessions tailored for each age group.

The physical activities for each session, in the form of an expanded variety of noncompetitive games, have also been revised to meet the interests and to improve the health of adults ages 50 and older. Adults also act as volunteer facilitators of the program. By also increasing the duration of physical activities from twenty to thirty minutes, the program aligns with the CDC’s recommendations for improving cardio-



Games with parachutes and balls keep the energy level high at a CATCH Healthy Habits class in St. Louis, Mo.

vascular health among adults and children who participate in the program.

The success and impact of CATCH Healthy Habits is being captured through additional data collection methods, including measuring changes in physical activity intensity and knowledge about nutrition and physical fitness, as well as determining the return-on-investment value of adult volunteer contributions to the program using a tool developed by the National Council on Aging.

OASIS publicized their receipt of the MindAlert Award and featured it on the OASIS website, which increased the program’s visibility, strength, and soundness. Receiving this national award also assisted in seeking program funding.

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*Alison Biggar is the senior editor of Generations.*

Note: The presence of an \* indicates that no current program update was available at press time.

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**MindAlert Awards**

**Photo credits**

- Pg 36    Courtesy Alzheimer's Family Services Center
- Pg 39    Courtesy the Society for the Arts in Dementia Care
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- Pg 43    Linda Winkelman
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- Pg 49    Sandro Cuccia
- Pg 49    Courtesy Stagebridge
- Pg 50    Courtesy Stagebridge
- Pg 51    Courtesy the OASIS Institute

The MindAlert Program Sponsor

## MetLife Foundation

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MetLife Foundation, established in 1976 by the Metropolitan Life Insurance Company, has been involved in a variety of aging-related initiatives. Since 1986, the Foundation has supported research on Alzheimer's Disease through the MetLife Foundation Awards for Medical Research, and has contributed millions of dollars to efforts to find a cure. In addition, the Foundation has provided support for an outreach program to educate underserved communities about Alzheimer's Disease; an award-winning initiative that brings people with Alzheimer's and their caregivers to major museums for interactive tours; and support for healthy-aging projects addressing issues of caregiving, intergenerational activities, health and wellness programs, and volunteer opportunities. MetLife Foundation supports health, civic affairs, cultural, education, and volunteer programs throughout the United States. For more information about the Foundation, visit [www.metlife.com](http://www.metlife.com).



## The American Society on Aging

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Founded in 1954, the American Society on Aging is a nonprofit, nonpartisan association of diverse individuals bound by a common goal: to support the commitment and enhance the knowledge and skills of those who seek to improve the quality of life of older adults and their families. ASA membership comprises a multidisciplinary array of professionals who are concerned with the physical, emotional, social, economic, and spiritual aspects of aging. They range from practitioners, educators, administrators, and policy makers to businesspeople, researchers, students, and more. No other organization in the field of aging represents ASA's reach across a broad diversity of settings and professional disciplines. In addition, ASA offers an extensive and varied array of renowned educational programming, outstanding publications, and state-of-the-art information and training resources—all within the largest multidisciplinary network for professionals in the field of aging. For more information, visit [www.asaging.org](http://www.asaging.org).



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