

EXERCISE BUILDS BRAIN HEALTH

Carl W. Cotman, Ph.D.

Increasingly, it seems, we are besieged in the print media, television and the Internet by advertisements for products to enhance mental and physical health in a relatively fast and painless fashion through miracle elixirs, computer based training, game programs or brief exercise programs. While there is little convincing evidence for the efficacy of such claims, one that is well-documented in the scientific literature is the benefit of physical activity and exercise on cognitive and physical health. This idea is not new. In fact, Hippocrates, an ancient Greek physician and founder of western medicine stated, “If we could give every individual the right amount of nourishment and exercise we would have found the safest way to health.” Ben Franklin, one of our founding fathers commented, “Exercise invigorates, and enlivens all the faculties of body and of mind... It spreads a gladness and satisfaction over our minds and qualifies us for every sort of business, and every sort of pleasure”. Indeed there is an increasing body of scientific evidence from human and animal studies that reveals numerous health benefits of regular physical exercise, including the health and function of the brain.



Exercise builds neuron health and improves brain function

As recently as the mid-90s, the prevailing assumption was that exercise improves health by its effect on the body, building skeletal muscle tone and improving cardiovascular function. Within the past several years, however, it has become clear that the brain itself is also directly impacted by exercise. In the mid-

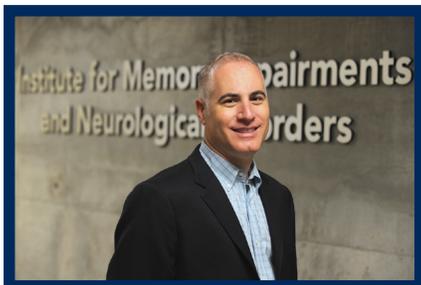
1990s, UCI MIND scientists first demonstrated that exercise increased the amounts of a protein called brain derived neurotrophic factor (BDNF) in the brain. This molecule

protects neurons from injury and facilitates learning and synaptic plasticity. In a sense, BDNF is like brain fertilizer. With age, BDNF levels fall and this decline is one of the reasons for impaired age-related cognitive function.



We now know that exercise acts at multiple levels to build the brain and enhance its function. The circuitry of the brain is dependent on neuron integrity, the connections between neurons (synapses), and the ability of synapses to function normally in network communication and learning. With age, synapses are lost and their function declines. Recently, we discovered in the aged rodent that exercise increases the numbers of synapses, counteracting the synaptic loss that occurs with age. In addition to stimulating an increase in synapse number, exercise stimulates the brain to generate more neurons. Until a few years ago it was believed that the brain cannot make new neurons. This idea was disproven when it was discovered that new neurons are made in specific regions of the brain throughout the lifespan. One key region that manufactures new neurons is the hippocampus, a critical region in learning and memory formation, and an area of massive decline in Alzheimer’s disease. Importantly, after these new neurons are generated (“neurogenesis”), they integrate into the circuitry of

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Wouldn't it be great if Alzheimer's disease itself became a memory in our collective human history? As we age,

we are acutely aware of the fragile nature of our memories—details aren't recalled as quickly or as accurately as they once were.

As we age, dementia becomes of increasingly greater concern to us. The sad reality is that if you currently don't already know someone with dementia, chances are pretty high that you will in the near future. It is now estimated that 1 in 6 people over 55 will suffer from some type of dementia, and 1 in 8 will specifically suffer from Alzheimer's disease.

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Promoting knowledge and education about Alzheimer's disease and the other types of dementias is a key component of UCI MIND. Patients and their caregivers and families are hungry for the latest news and treatment options, although finding accurate information can be quite challenging, particularly since conflicting information is sometimes presented. Furthermore, unscrupulous people sometimes try to profit from individuals whose faculties may have been compromised by this insidious disease.

To help individuals and their families/friends who are impacted or worried about dementia, UCI MIND has recently launched a Facebook page. To become a fan of the Institute Facebook page, please visit www.facebook.com/UCIrvineMind



Here you will find information and links on a variety of topics. A partial listing of some of the recent postings is described:

- New National Institute on Aging Guidelines for defining Alzheimer's disease
- Latest facts and figures about Alzheimer's disease
- Ways to manage costs of caring for aging parents
- How maternal inheritance may boost your chances of getting Alzheimer's disease

In addition, by becoming a fan of our Facebook site (which is of course free), you'll be able to learn about the community events that the Institute is sponsoring and also the latest information about the Institute faculty and staff. The site also posts pictures and videos from UCI MIND events. For example, photos of the Wine for the MIND fundraising event are published on this site.

A very special thank you to Kristin Paranniello with Social Catalyst Consulting, for providing invaluable consulting advice and helping us to launch our Facebook site.

Although it is true that some of the same information is available on our website, www.mind.uci.edu, the advantage to becoming a fan of our Facebook site is that it promotes two-way conversations. You'll be able to see postings from other individuals, and learn about their concerns and also participate in conversation threads that others have started.

Lastly, as an administrative note, it gives me great pleasure to announce that Dr. David Cribbs has been appointed as Associate Director of UCI MIND. Dr. Cribbs is a Professor in the Department of Neurology, and has a long history at UCI. He is a leading expert on the role of the immune system and its impact on Alzheimer's disease. In his new role, Dr. Cribbs will play a more prominent position in public outreach. Congratulations to David in his new leadership capacity and look for him at upcoming UCI MIND events.



UCI MIND Associate Director,
Dr. David Cribbs

Frank M. LaFerla, Ph.D.
Director

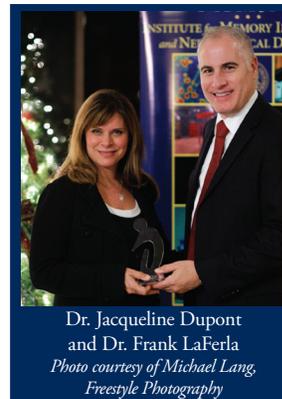


IN THE NEWS

Exciting discoveries, achievements, and updates from the Institute for Memory Impairments and Neurological Disorders

2010 UCI MIND AWARD

Dr. Jacqueline DuPont was the recipient of the 2010 UCI MIND Award, which was presented on December 9, 2010. The award represents the highest honor bestowed by UCI MIND, and is presented on an annual basis to an individual who has significantly contributed to the mission of the Institute. Dr. DuPont is a true humanitarian who has worked tirelessly on behalf of the elderly. She was also recently awarded the Bishop Tod D. Brown Award for Exemplary Business Integrity by the Orange Catholic Foundation.



Dr. Jacqueline Dupont
and Dr. Frank LaFerla
*Photo courtesy of Michael Lang,
Freestyle Photography*



Dr. Frank LaFerla elected
as a Fellow of the AAAS
Photo courtesy of UCI Communications

AAAS FELLOW

Frank LaFerla, UCI MIND Director and Chancellor's Professor of Neurobiology and Behavior was elected as Fellow of the American Association for the Advancement of Science (AAAS). Fellows are recognized for meritorious efforts to advance science or its application, and election is an honor bestowed upon members by their peers. Dr. LaFerla's research is focused on developing and studying animal models to understand Alzheimer's disease and to develop novel treatments.

SCHOLARS AWARD

Mitra Hooshmand, a postdoctoral fellow in the laboratory of Institute member Dr. Aileen Anderson, and Kara Neely, a graduate student in the LaFerla lab were the 2010 recipients of the "Carl W. Cotman Scholars Award." The award is bestowed in honor of the founding director, and recognizes outstanding young investigators of the Institute who made significant contributions to our understanding of the neurobiology of memory impairments and neurological disorders. Mitra received her Ph.D. in Neurobiology in 2010 and continues to research the impact of damage to the nervous system. Kara was the lead author on a paper in *Journal of Neuroscience* that shows that presenilins, a key protein in Alzheimer's disease, are involved in autophagy.



Postdoctoral fellow, Mitra Hooshman



Graduate student, Kara Neely



Graduate student, Nicholas Olivas,
at the Second Annual ReMIND
Emerging Scientist Symposium

SECOND ANNUAL REMIND EMERGING SCHOLARS SYMPOSIUM

The Second Annual Emerging Scholars Symposium was held in February, with the keynote lecture delivered by internationally renowned neuroscientist, Dr. Fred (Rusty) Gage of the Salk Institute. Prizes to young researchers for outstanding presentation were awarded to postdoctoral fellow Dr. Kasia Bieszczad, graduate student Nicholas Olivas, and undergraduate Matiar Jafari.



Dr. Mathew Blurton-Jones
working at the bench

NEW FACULTY APPOINTED

Congratulations to Dr. Mathew Blurton-Jones who was recently appointed as an Assistant Professor in the Department of Neurobiology and Behavior after a national search. Matt is an expert on stem cell biology, particularly with regards to its application to Parkinson's and Alzheimer's disease. In addition to his appointment with UCI MIND, he will also hold an appointment in the Stem Cell Center.

Meet the Scientist at UCI MIND

MATHEW BLURTON-JONES, PH.D.



The newest faculty member of UCI MIND, Dr. Mathew Blurton-Jones, earned his Ph.D. in Neurosciences from the University of California San Diego in 2002. Dr. Blurton-Jones pursued his postdoctoral studies here at UCI first in the lab of Dr. Carl Cotman and more recently with Dr. Frank LaFerla. He officially joins the faculty

of UCI MIND, the Department of Neurobiology and Behavior, and the Sue and Bill Gross Stem Cell Center on July, 1st 2011.

Dr. Blurton-Jones' research focuses on the use of stem cells to understand and treat Alzheimer's and Parkinson's disease. Stem cells can be used to model and examine the causes of human disease and Dr. Blurton-Jones' research suggests they may also provide a promising new approach to treat neurodegeneration. In 2009, Dr. Blurton-Jones and colleagues were the first to show that neural stem cells can improve cognition in a mouse model of advanced Alzheimer's disease. Building on this finding, Dr. Blurton-Jones identified the mechanism by which stem cells improve learning and memory and is beginning to examine whether this kind of approach can one day be translated to the clinic. Dr. Blurton-Jones also uses stem cells to try to model neurodegenerative disease in a dish and to understand the normal and pathological functions of disease-associated genes. For example, Dr. Blurton-Jones and colleagues recently discovered that amyloid precursor protein, the protein that gives rise to beta-amyloid plaques, actually serves an important role in the development of brain cells. By understanding the normal function of disease-associated genes, Dr. Blurton-Jones' team believes they can get a better grasp on what exactly goes wrong in Alzheimer's and Parkinson's disease.

On a personal level, Dr. Blurton-Jones is originally a native of England who moved to Los Angeles at the age of 10. His wife, a family practice physician, and he are the proud and busy parents of 5 young children (4 boys and 1 girl)!

Meet the UCI MIND Financial Officer

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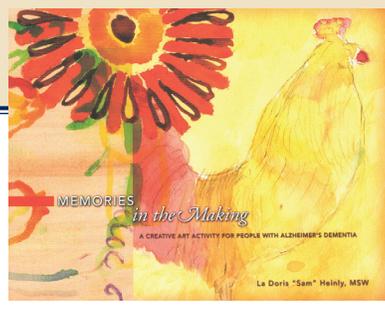


My career at UC Irvine began in 1987, when I started in Accounting working at Contracts and Grants. Accounting is a field for which I have always had great passion, and feel it is my calling. I take great pride in being thorough and detailed in an area that many people can find to be confusing and difficult.

I came to UCI MIND, previously known as the Institute for Brain Aging and Dementia, in 1995 with the same passion and enthusiasm. I find satisfaction in helping with administrative details and managing complex contract and grant reporting requirements so that UCI MIND researchers can focus their time and energy on their research, while knowing that their grants and contracts are well managed. I work closely with the investigators to ensure that protocols, policies and procedures are adhered to, so that all transactions are carried out smoothly and reflect well on UCI MIND. I have a personal interest in the area of aging and promoting healthy aging, which also falls in line with some of the research that is conducted at UCI MIND, such as that of the Successful Aging Program and the work being done by the 90+ Study Program.

I was born and raised in Indonesia where I owned a small business, and came to the United States in 1983. I followed my dream to explore new opportunities in America. I am married and have two daughters both currently attending UC Schools. I enjoy music and play the piano at my church every Sunday. I also play accordion and I am currently learning to play the Er-Hu (a Chinese stringed instrument).

I am proud to be affiliated with UCI MIND and continue to work diligently to maintain the integrity and success of the Institute as we research and seek ways to make memories last a lifetime.



MEMORIES IN THE MAKING®

La Doris "Sam" Heinly, MSW, National Alzheimer's Association Memories in the Making Consultant, Orange County

There is currently a powerful movement among Alzheimer's family caregivers to find quality

activities for their loved ones. Twenty years ago family caregiver, Selly Jenny, experienced the same perplexing dilemma as many caregivers today. Caring for her mother, Jenny recognized a need for meaningful activities that encouraged socialization and communication. She observed her mother's retreat into silence and growing frustration when she was unable to share thoughts and retrieve her memories. From Jenny's own experience she knew art was a powerful communication tool. With the support of the Alzheimer's Association, Orange County and University of California, Irvine, Jenny created a program that focused on social engagement and communication for Alzheimer's patients called Memories in the Making®, (MIM). The purpose of the program was to encourage sharing of memories between families, artists and caregivers while minimizing the verbal withdrawal common in the disease. The strategies used in the MIM program are most often used as a care facility group activity. However, these same strategies can be used one-on-one by family members.

Jenny was years ahead of her time. Conventional wisdom for care in those early days focused primarily on safety issues. Experts discounted stimulating activities. Communication, socialization and interaction were considered unimportant or impossible and minimal effort was given to even trying them.

Today, based on research we understand that the artistic expressive talents of an individual remain intact well into advanced stages of the disease. Memories in the Making is currently being practiced in 24 states and 4 countries. The essence of the program is that creativity bridges the communication gap with pictures and additionally augments the verbal deficit for people with Alzheimer's disease. Most artists have never painted before.

I have worked with the program since 1997 and during that time I have viewed thousands of works

of art, heard many wonderful stories and conducted countless trainings and classes. It is my belief that the best way to understand Memories in the Making is to view the art and read the stories created by Alzheimer's artists.

The following is a wonderful art example and story from a typical Memories in the Making classroom.

John was 68 years old and had severe Alzheimer's disease when he created the art piece below. The title "FA8" and John's accompanying description was not significant to the art facilitator; however it had tremendous meaning to John's wife. John tried to explain with his limited verbal capacity, "It's going around those mountains down below." He circled with his finger

tracing the swirling lines. When asked about the circle standing alone to the side, he said, "that one's calm because he is with God."



John's wife, viewing the art later explained, "FA8 was our son's Navy jet. He was flying in formation with three other jets, two landed and two collided. Our son, Greg, 24, was one who died."

John's story is a good example of how family will benefit from the art experience. In the example, John's wife was able to explain the meaning of "FA8". The experienced art facilitator accurately recorded John's precise words even if they were awkward expressions she did not understand. By accurately recording John's words, the facilitator validated John's feelings and John was left with a sense of being heard.

For more information regarding the Memories in the Making art program and the new Memories in the Making Training Manual visit the website at www.thememoriesinthemaking.com or contact La Doris "Sam" Heinly at sheinly@sbcglobal.com.

the hippocampus and improve learning. Exercise is one of the few known interventions that can enhance neurogenesis. Moreover there is evidence that exercise may increase neurogenesis in the human hippocampus just as we observe in the rodent brain. Finally, in addition to stimulating synapses and neurogenesis, exercise builds systems that help support brain function, such as enhancing brain metabolism and stimulating new blood vessel formation.

Studies in humans also show that exercise benefits the brain and cognitive function, based on both population surveys (“epidemiological studies”) as well as clinical studies. In one epidemiological study, walking 3 or



more times per week was found to correlate with a 32% reduced risk for Alzheimer’s disease. In another study, a moderate level of physical

activity was associated with slower cognitive decline in aging, equivalent to staying younger by 2-3 years. Clinical trials have validated these observations, demonstrating that elderly subjects who engage in moderate aerobic exercise (vigorous walking) show improved cognitive function, particularly on executive function tasks. Executive function is essential for the abilities of multi-tasking, and working memory, for example holding facts and events in memory storage while engaging in conversation. Thus the benefits of exercise add practical value to everyday life. At a biological level, human studies also have demonstrated that exercise prevents the age-related declines in blood flow, particularly in the vulnerable cortex and hippocampus. In addition, exercise prevents atrophy that occurs in certain brain regions with age. A decrease in the volume of the hippocampus is one the biomarkers which is linked to Alzheimer’s disease. For example, 40 min/day of moderate walking, 3 times per week for 1 year, increases the volume of the hippocampus in normal elderly adults. Further, exercise can reduce the accumulation of pathology in the brain that may trigger Alzheimer’s disease. For example, exercise reduces the brain levels of beta-amyloid, which is the major component of senile plaques (one of the hallmarks of Alzheimer’s disease), first reported by our group in

transgenic mouse models of AD. Recent human studies reveal that less brain amyloid accumulates in individuals who are active and fit, vs. sedentary individuals, suggesting that exercise prevents the age-related build up of harmful pathology that impairs brain health and function. To date there have been no clinical trials to determine if exercise will improve cognitive function or improve behavioral disorders in those with AD. However, exercise may help those with mild cognitive impairment (MCI). Overall it appears that exercise is able to improve cognitive function even in those with some level of impairment and brain pathology.

Lifestyles and Personalized and Proactive Medicine

Nearly all of our lifestyle choices affect our health. Lifestyle practices can be effective therapeutic approaches to promote optimal health of the body and brain. While aging is inevitable, aging is influenced by how we live.

Each person can practice personalized and proactive medicine by including physical activity in their daily routine, maintaining a healthy weight, and eating a healthy diet. These lifestyle practices go a long way toward slowing the effects of aging, and gaining an upper-hand on brain and physical health. The American Heart Association identifies inactivity as one of the five leading risk factors for developing cardiovascular disease. Taking steps to increase physical activity can improve circulation and blood vessel health, heart function, and reduce blood pressure and management of blood sugar and insulin levels. In parallel, these physical benefits help promote brain health. In addition to the brain benefiting from improved general body health with exercise, exercise directly affects the brain, stimulating the growth of new blood vessels, enhancing neurogenesis and synapse formation, and improving learning. No other lifestyle or pharmaceutical approach can impact overall health and brain health as significantly as physical activity.



So how do I exercise regularly?

Despite this increasing wealth of knowledge on the

relationship of physical activity and health, an estimated 74% of adults do not meet the recommended guidelines of at least 30 minutes of moderate intensity physical activity 3 times/week. As little as 4 – 7 hrs per week can lower your risk for cognitive decline, and prolong your life. It is not uncommon to hear people say, “Okay it sounds like a convincing argument that exercise is good for me. But I am too busy, do not like to exercise and have no convenient place to exercise...” and other such excuses.



However, there are several proven strategies that will help you incorporate exercise into your lifestyle. The most important factor is that YOU must decide you WANT to try. Just like other priorities, it is essential to set aside dedicated time and to develop a regular schedule for exercise. Think about what time of day you would be happiest to exercise. I personally prefer late in the day, after work but before dinner. This gives me a chance to reflect on my day, to plan ahead, and also to relax. Keep exercise interesting and fun by varying the type of exercise, or learning new skills or sports. Exercising with another person or group is a also great strategy, and adds an important social element. The key is to experiment with the best approach for you, make it part of your schedule, and realize that physical activity is the safest and least costly way to practice personalized and proactive medicine.

BETTY'S FOUNDATION HOSTS A CRUISE TO REMEMBER



Clint Woesner and Karah Woesner

Betty's Foundation hosted a *Cruise to Remember* event aboard “The Last Hurrah.” The event took place April 2 and 3. Bob and Betty Meadows, the yacht owners, generously donated the use of the yacht, docking fees, staff fees, and fuel charges for the event. Guests were able to spend four hours on the yacht cruising from Newport Harbor to Dana Point while enjoying a gourmet lunch and beverages. A silent auction aboard the cruise as well as the ticket donations helped Betty's Foundation raise over \$9,000 of which \$5,000 will be donated to UCI MIND.

WE'RE LOOKING FOR VOLUNTEERS!

Interested in volunteering to help UCI MIND?

- Special events/health fairs/community liaisons
- Speaker's bureau
- Administrative/clerical tasks

If you have a special interest in helping UCI MIND, contact Linda Scheck to find out more about volunteer opportunities, (949) 824-3251 or lscheck@uci.edu



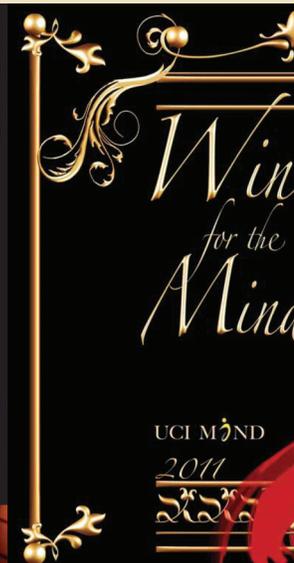
Dr. Carl Cotman earned his Bachelor of Arts degree in 1962 from Wooster College, majoring in chemistry. He received his master's degree in analytical chemistry from Wesleyan University in 1964 and continued his training at Indiana University where his dissertation on the isolation and characterization of synaptic membrane proteins earned him his Doctorate in 1968. Thus, Dr. Cotman's early background was in the field of analytical chemistry before he received special training in the chemistry of the nervous system. Dr. Cotman's research is focused on understanding the mechanisms causing neuronal degeneration in Alzheimer's disease (AD) and the development of interventions to promote successful aging. His current major research is focused on the role of exercise as an intervention for maintaining and improving cognitive function during aging. Author of 9 books and over 700 peer-reviewed journal articles, Dr. Cotman has received numerous prestigious awards, tributes and honors for his career achievements, including the Allied Signal Award in Alzheimer's disease (1987), Metropolitan Life Award (1988), UCI Medal for research, teaching and public service (2004), Reeve-Irvine Research Medal (2005), and the Lifetime Achievement Award in Alzheimer's Disease Research (2008) at the 11th International Conference on Alzheimer's Disease in Chicago. The award is given to outstanding scientists who have dedicated themselves to helping millions of people around the world through their research. Dr. Cotman was an ISI Highly Cited Researcher in 2001 and 2007.



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Pictures: (1) Vince Ferragamo, Dr. Frank LaFerla, Jacqueline DuPont, Mima Ransom and Ed Arnold. (2) Rosemary and Rand Sperry ready to welcome guests. (3) Dan Aldrich and wife, Elaine. (4) Mima Ransom and Ed Arnold. (5) Mima Ransom and Ed Arnold. (6) Mima Ransom and Ed Arnold. (7) Mother and daughter, Binnie Beaumont and Alison Hahn. (8) Allison and Keith Rabin, JetSuite donor. (9) Dr. LaFerla and wife, Elaine.

The three hundred guests and supporters of UCI MIND “saved memories with style” as they ate foods from around the world, sipped wines and enjoyed a fashion show featuring models whose hearts were close to Alzheimer’s disease. The event was full of laughter but the cause was serious.

“A person now develops Alzheimer’s every 69 seconds. The disease now costs us \$183 billion a year. We must find treatments and preventative measures to help. The Baby Boomers are turning 65 at a rapid rate and they are entering the age of high risk for developing dementia. Funding research is our only answer” stated Wine for the MIND –Saving Memories with Style event chair, Dr. Jacqueline DuPont, member of the UCI MIND Advisory Board and a dedicated community leader.

The event netted \$100,000 on Saturday, February 12, 2011 held on the grounds of the luxurious private home of Rand and Rosemary Sperry in Orange. Guests were treated to foods and wines, all donated for the cause. Executive chefs from Atria, Belmont Village, Cranbrook, Irvine Cottages and Vintage Senior Living Communities

outdid themselves with delicious offerings from Italy, France, Spain and the USA, all paired with wines from those regions.

Dr. Frank LaFerla, director of the Institute for Memory Impairments and Neurological Disorders, stated that he and his team of scientists are “researching ways to make memories last a lifetime” as he introduced the UCI MIND faculty who are working to find answers to one of the world’s most perplexing problems it is facing today – dementia.

Representing UCI and UCI MIND, were John C. Hemminger, UCI Vice Chancellor for Research and his wife, Dr. Sophia An, Dr. Elizabeth Loftus, Dr. Carl Cotman, Dr. Gaby Thai, Dr. Leslie Thompson, Dr. David Cribbs and his wife, Christina, Dr. Andrea Tenner, Dr. Jim McGaugh, Dr. Tom Carew and his wife, MaryJo, Dr. Neal Hermanowicz, Dr. Kim Green and Drs. Cordula and Malcolm Dick.

The fashion show was the highlight of the evening with personal stories read about each model by emcee,



(3) A toast from Vince Ferragamo. (4) Susan Kavanaugh stepping out to save memories. (5) Kelly Crean, Lady in Red on the runway. (6) UCI Vice Chancellor for LaFerla and Mary Patrick ready to walk the runway with furs and baubles. (10) Clarice Lehn on the runway. (11) William and Amy Young with Linda and Burton Young.

Vince Ferragamo, and auctioneer, Ed Arnold. There were touching testimonials about the impact of dementia on everyone in the family and highlighted the vital need for research. Celebrity guest, Donna Mills, encouraged guests to continue to support the cause.

Two models, Dan Aldrich, UCI Vice Chancellor of Advancement, and his wife Elaine, spoke proudly of Dan's mother, Jean, who has participated in UCI MIND's Successful Aging Program since 1989. Dr. Neal Hermanowicz, who works on Parkinson's disease was also a model.

As he walked the runway in black tie, Dr. LaFerla shared, "I believe we are shaped by our memories. They define who we are as we move through life. I remember my mother at a very young age losing her memory, not to Alzheimer's but to a tumor in her brain that stole them just the same. She saw me as her brother, not her son. She lost her ability to take care of herself and she lost her dignity, just as patients with Alzheimer's disease do. She slowly vanished from our world. As a scientist, I understood what was happening. As a son, I felt as lost as the families here tonight. I try to

keep the vision of making her memories last a lifetime and I translate that to the vision for UCI MIND. It is a strong emotion that compels me to find answers."

Committee members volunteered their time and skills throughout the year assembling underwriting partners, a wide array of donations for the silent and live auctions, the food, the wines and printing costs. Each member vowed to return next spring for the third such event. They are seeking a private home in which to hold the 2012 Wine for the MIND which has become a signature feature of the event, as another generous family opens their doors to provide a setting to raise funds for research.

About UCI MIND

UC Irvine's Institute for Memory Impairments and Neurological Disorders (MIND) seeks to conduct research to enhance the quality of life for the elderly by identifying factors and life-style approaches that promote successful brain aging. For more information on the Institute or this event please visit www.mind.uci.edu or by calling Linda Scheck, Director of Community Relations, 949-824-3251 or lscheck@uci.edu.

CLINICAL TRIALS

STUDIES SEEKING PARTICIPANTS

FOR MORE INFORMATION ABOUT RESEARCH OPPORTUNITIES OR CLINICAL TRIALS,
PLEASE CONTACT US AT (949) 824-3249 OR VISIT OUR WEBSITE AT:
www.mind.uci.edu/studies/clinicaltrials.html

Gammaglobulin Alzheimer's Partnership Study (GAP)

Clinical Trial

This clinical research study is designed to evaluate the effectiveness, safety, and tolerability of an investigational drug for Alzheimer's, and to determine if this investigational drug may help slow the progression of this disease.

Patients may be eligible to participate in the GAP Study if they:

- Are 50 to 89 years old.
- Have been diagnosed with probable mild-to-moderate Alzheimer's disease.
- Have a study partner (a spouse, child, sibling, or other caregiver) who can be present at every study visit to monitor the participant, and to help him or her complete key study procedures.

If the individual agrees to participate, they will be one of 360 subjects enrolled in the study, which will take place at 36-40 AD treatment sites in the United States. Approximately 10 subjects from this facility will participate in this study. This is a randomized, double-blind, placebo-controlled study. If the patient is found to be eligible for this study, the total period of his/her participation will be approximately 20 months. In this study, the patient will be given either a placebo (an inactive substance) or IGIV infusions intravenously (through a vein in the arm) every two weeks over a 70-week period followed by a 6-week follow-up period without treatment. All participants receive study-related care and monitoring and study-related drugs, at no cost.

Alzheimer's Disease Neuroimaging Initiative Grand Opportunity

Clinical Trial

Why are we doing this research study? Our goal is to determine whether imaging of the brain (through MRI, PET and amyloid imaging scans) can help predict and or delay the onset and progression of Alzheimer's disease. In addition to neuroimaging, the study will collect and test blood and cerebral spinal fluid to determine if biomarkers can predict and monitor the disease. Testing cerebral spinal fluid is the only way to obtain important brain information.

Who is sponsoring this research study? This research study is sponsored by the National Institutes of Health through the Research and Research Infrastructure "Grand Opportunity" (GO) grant program.

Where will the research study take place?

This research study will take place at 50 major university sites across North America. Researchers are looking for persons who:

- Are between 55 and 90 years of age
- Are in good general health but have memory problems or concerns
- Are fluent in English or Spanish
- Are willing and able to undergo the test procedures
- Have a study partner – a friend or relative who can accompany the volunteer to all clinic visits

Your health will be closely monitored by a team of doctors and nurses, at no cost to you. Any new information about your physical health will be shared with you and your physician (you are encouraged to continue seeing your regular doctor).

If you are interested in participating or have any questions, please call Deeba Sultani at (949) 824-5733.

GET INVOLVED IN RESEARCH

Help Us Find the Answers...

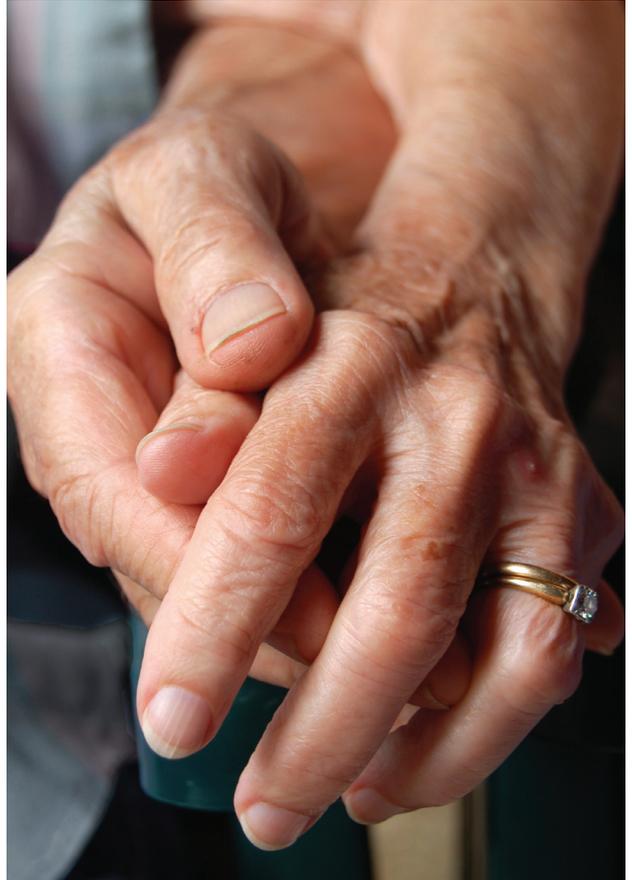
Research studies can be meaningful and valuable in the understanding of diseases from prevention to treatment. For more information, please call the study coordinators listed.

fMRI STUDY MEASURING BRAIN STRUCTURE AND MEMORY PERFORMANCE IN NORMAL OLDER ADULTS AND MCI

In our lab, we are studying the relationship between changes in brain structures as they relate to memory performance. One way that we can look at changes in these brain structures is to observe changes in memory that occur in normal aging as well as those changes associated with disorders of aging, such as mild cognitive impairment and Alzheimer's disease. We use fMRI (functional magnetic resonance imaging) to observe changes in activity in the brain while individuals perform memory tasks. By comparing the changes in activity to memory performance, we can observe which areas of the brain are involved in different kinds of memory operations.

- Who:** Successful aging program participants
Mild cognitive impairment diagnosis
Questionable cognitive impairment
- Time:** 2 visits, each 1-2 hours each
- Risk:** Minimal, but we will conduct a thorough screening for MRI compatibility

Compensation for the first session is \$15 per hour. Compensation for the second session is \$25 per hour. Both sessions are located on the UCI main campus. If you are interested in participating or have any questions, please call the Stark Lab at (949) 824-4230 and ask for Shauna Stark.



PHYSIOLOGY AND COGNITION RESEARCH

We are recruiting for a study that would involve two sessions, each lasting 1.5- 2 hours. In the first session you will be asked to give a small saliva sample and to participate in a fitness test on a stationary bicycle that will last approximately 12-14 minutes. You will also be asked to fill out some questionnaires at that time. Compensation for the first session is \$20.

During the second session you will be asked to view a short slide show of pictures and to rate each one according to how emotionally arousing you found it. Immediately following the viewing of the images, you may be asked to participate in a moderate exercise paradigm on a stationary bicycle for approximately six minutes. You will also be asked to give several small saliva samples throughout the experiment, and the total session time for the second session will be 1.5- 2 hours. Compensation for the second session is \$20.

Who: Normal individuals between the ages of 50 and 85 years old
Patients with Mild Cognitive Impairment (MCI)
Patients with Cognitive Impairment, No Dementia (CIND)

Where: The General Clinical Research Center (GCRC) at the UC Irvine Medical Center in Orange

When: Afternoons (between the hours of noon- 6pm)

Time: Two visits, each 1.5-2 hours long

Risks: Minimal risks associated with short period of exercise

Contact: Sabrina Segal @ 805-338-9246 or ssegal@uci.edu

Fund Promising Research NOW: An Appeal to the UCI MIND Community

Linda Scheck, (949) 824-3251, lscheck@uci.edu



We urgently need a massive increase in funding for research into Alzheimer's disease to prevent future generations from suffering from this age-related degenerative disorder.

The numbers speak volumes – 5.4 million in the US today. An expected 16 million by 2050. Every day 10,000 Baby Boomers turn 65 and their risk for developing Alzheimer's disease starts to increase. Unless we do something to delay or prevent the onset of the disease, we face bankrupting our nation, financially, physically, and emotionally.

The National Institute on Aging spends \$6 billion a year on all cancer research, while spending only \$480 million a year on Alzheimer's research. The numbers of cancer deaths are rapidly declining, while those from Alzheimer's are rapidly increasing. We actively advocate for increased funding from the NIA.

However, government-funded research alone cannot provide the answer. That gap can only be filled by members of the community. You! Private donors at all levels who fund research today to create hope for tomorrow.

Here are opportunities for you to consider:

\$100-\$500 will help to provide computers for the clinic, patient financial and transportation assistance and other resources for patients and their families.

\$1,000 provides PET scans for both Alzheimer's disease and control subjects to advance imaging as an early, non-invasive diagnostic tool.

\$2,500 supports the collection of tear fluid from 25 research subjects with the goal of using tears as a possible diagnostic tool for Alzheimer's disease.

\$5,000 provides on-the-job training of medical students, nurses and physicians about how to best treat and interact with patients and families faced with Alzheimer's disease and other neurological disorders.

\$10,000 funds MRI's for 10 patients.

\$25,000 supports the purchase of one fluorescent microscope used to examine prepared tissue samples in order to advance Alzheimer's disease research.

\$50,000 Allows for either:

- Funding for the collection of cerebral spinal fluid (CSF) from 125 patients to advance bio-marker research.
- Supports the *Adopt-a-Graduate Student Scholarship Program* providing a stipend, tuition, and lab supplies for one graduate student for one year.

\$75,000 *Adopt-a-Post Doctoral Fellow Program* providing support for one year of salary, equipment and supplies for one postdoctoral scholar to investigate a promising new line of research.

\$100,000 *Adopt-a-Junior Investigator Program* providing support for one year of salary, equipment, and supplies for one junior faculty pursuing new and innovative ideas not funded by the NIA.

\$250,000 supports the purchase of a Stereology System, vital to the advancement of stem cell research.

\$500,000 is an opportunity to fund the UCI MIND Memory Assessment Clinic in your name for one year. The clinic provides state-of-the-art memory assessments to the community.

\$1,000,000 *Adopt-a-Scientist Program*, in the name of the donor, providing support for five years of salary, equipment and supplies to a UCI MIND newly recruited scientist.

\$2,500,000 *State-of-the-Art MRI Imaging Suite*

This gift funds the purchase of an MRI machine and the build out of an imaging suite. This state-of-the-art equipment will allow UCI MIND researchers to continue to push the bounds of imaging techniques as a diagnostic marker for Alzheimer's disease and other neurological disorders.

\$3,500,000 *Endowment of the Director*

This gift, in the name of the donor, will establish a coveted endowed director position, providing UCI MIND the means to support a distinguished member of the faculty to mentor scientists at UCI MIND. Such an endowment will reflect your values in supporting research and will serve as an enduring testament to your generosity.

Only through scientific discovery comes hope for a solution to Alzheimer's. Please consider a gift today. You can be part of making memories last a lifetime. For more information contact: Linda Scheck, UCI MIND, 949-824-3251 or lscheck@uci.edu.

DONATIONS *from* November 2010 - March 2011

We thank the following benefactors who are making a difference in supporting our mission to advance research into understanding the causes of memory impairments and neurological disorders. They are helping us reach our goal to diagnose the disease, identify the means to effectively treat it and to provide help to the individuals, families and caregivers.

We view acts of philanthropy as an expression of your personal values and we are committed to serving and assisting you in your process of charitable gift planning. UCI MIND is able to make the leadership and expertise of the UCI Office of Legacy Planning available to you, at no charge, to assist with learning about gift planning benefits and to answer any questions you may have. We offer you our commitment to the enriching process of being a part of "researching ways to make memories last a lifetime".

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Mr. and Mrs. Dan Aldrich
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Save Memories One Glass at a Time UCI MIND

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**Thank you to Wine for the MIND Committee, Underwriters, and Sponsors
for helping to make the 2011 Wine for the MIND event possible.
Together we can Save Memories.**

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Memorials

What a wonderful way to commemorate a loved one and to help support Alzheimer's disease research. Many families choose to make a lasting donation in memory of a friend or loved one in lieu of flowers. Once the memorial donations have been received, a thank you acknowledgment is sent to the donor. In addition, a thank you acknowledgment is also sent to the person to be acknowledged on the individual's behalf, so that they know that a donation has been made. All donors will be recognized in the Mind Matters Newsletter, unless the donation is designated as anonymous.

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Mr. and Mrs. Doug Taylor

In Memory of Donald H. Bryant

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Help Us Make Memories Last a Lifetime...

UCI MIND

There are many ways to support the clinical and basic science research activities at UCI MIND.

- ✦ If the donation is being made in memory/honor of someone, please include a note with information as to where the acknowledgements should be sent.
- ✦ Please consider donating to UCI MIND through one of the many workplace campaigns organized by your employer. It is a simple way to support our research.
- ✦ Consider increasing your donation if your company has a matching gift program.
- ✦ Consider convenient monthly online payments.

If you would like to receive more information on giving, please contact Linda Scheck at (949) 824-3251
or log on to www.mind.uci.edu/giving



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* Layout for MIND Matters Newsletter was prepared by Shirley Sirivong



Irvine Hilton, Irvine, California | September 30, 2011

19th Annual Southern California Alzheimer's Disease Research Conference When Does It Become Dementia? Transitioning from Healthy Aging to MCI and Dementia



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The conference is open to the public and is designed to heighten the community's awareness and knowledge of Alzheimer's disease and related neurological disorders. For physicians, psychologists, and other health care professionals, educational units available. Please visit www.alzoc.org or call (949) 757-3703 for more information and to register.