

THE AGING BRAIN

Bulletin

Fall 2009

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UNIVERSITY of CALIFORNIA • IRVINE

What's in a Name?

...that which we call a rose

By any other name would smell as sweet

William Shakespeare
(Romeo and Juliet)

We are pleased to announce that the Institute has changed its name from "Brain Aging and Dementia" to "Memory Impairments and Neurological Disorders." In addition to our new name, we also have a new acronym, UCI MIND, and a cool new logo.



The new name better reflects the depth of research performed at the Institute, which not only includes Alzheimer's disease and other forms of dementia such as Lewy body and frontotemporal dementia, but also research into Huntington's, Parkinson's, and Lou Gehrig's disease, and Down syndrome. Although the brain regions impacted by these different disorders varies and causes diverse symptoms in patients, many pathways leading to brain dysfunction are shared, thus studying one of these disorders can help inform the others.

The administrative offices of UCI MIND have also moved from Gillespie to Biological Sciences III, although the UCI MIND Clinic continues to operate in Gottschalk Plaza.

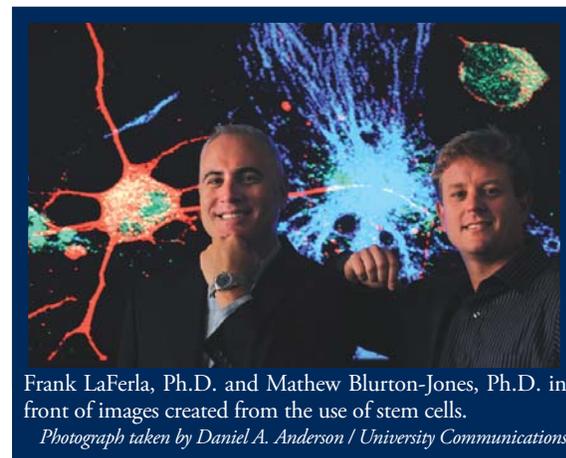


CAN STEM CELLS BE USED TO TREAT ALZHEIMER'S DISEASE?

Mathew Blurton-Jones, Ph.D.

Hardly a day passes without hearing the latest news about the promise of stem cells to treat or cure some of the most devastating diseases to plague humankind. Alzheimer's disease is frequently mentioned by presidents, governors, senators, and the press as an example of the type of disease that will one day benefit from stem cell-based therapies. It is, therefore, surprising that, to date, very few scientific experiments have actually been done to determine if stem cells can reverse the damage caused by Alzheimer's disease. However, some of the most significant studies in this area have taken place right here at the UCI Institute for Memory Impairments and Neurological Disorders (UCI MIND).

There are many different kinds and sources of stem cells. Embryonic stem cells receive considerable attention, in no small part, because of the ethical debate that centers on the generation of these cells. However, a second type of stem cell, termed "adult stem cells" offers many of the same advantages for disease treatment, yet completely avoids the ethical dilemma of embryonic stem cell research. Adult stem cells can be obtained from organ donors and in some cases even from the patients themselves. It turns out that adult stem cells have already



Frank LaFerla, Ph.D. and Mathew Blurton-Jones, Ph.D. in front of images created from the use of stem cells.
Photograph taken by Daniel A. Anderson / University Communications

been used successfully to save millions of lives for the past 40 years. Bone marrow transplantation has treated and cured many patients with leukemia and other blood disorders and scientists now know that it is the adult stem cells within the bone marrow transplant that allows this treatment to work.

Just as the bone marrow contains blood stem cells, the brain likewise contains its own set of adult stem cells termed 'neural stem cells.' These neural stem cells exist within two distinct brain regions and can give rise throughout life to all three

Mathew Blurton-Jones, Ph.D.

Mathew Blurton-Jones, Ph.D. is an Assistant Researcher at UCI MIND. His studies focus on the use of neural stem cells to treat and model Alzheimer's disease and related neurodegenerative disorders.



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From the Director...

Frank LaFerla, Ph.D.



A study showing the projected growth of Alzheimer's disease across the world was released on September 21, 2009 by Alzheimer's Disease International, and the results are far worse than anyone predicted. Before the report's release, the world-wide incidence was thought to be around 15 million cases, which didn't seem particularly accurate since it is well established that there are **5.3 million** cases in the USA alone. Sure, the USA has experienced tremendous growth in longevity, but how could one-third of the world's Alzheimer cases be located in this country? The new report helps answer that question, and the results are frightening. The World Alzheimer Report 2009 makes clear that the global incidence has been greatly underreported, and there are **over 35 million** cases of Alzheimer disease throughout the world.

...global incidence has been greatly underreported, and there are about over 35 million cases of Alzheimer's disease throughout the world.

Even more alarming, the projected growth of dementia across the globe will reach **65 million** cases by 2030 and over **115 million by 2050!** According to the most recent data released by the Alzheimer's Association, within the USA by 2050 the number of Alzheimer cases will grow from the current **5.3 million** to **16 million cases**. One estimate suggests that our government will spend close to **20 trillion dollars** (yes it is with a T) to pay for all the Medicare and Medicaid expenses associated with Alzheimer's disease in the USA—truly a budget buster for our government. By comparison, it cost about \$100 billion to send a man to the moon.

Closer to home in the state of California, there are over 588,000 individuals currently suffering from Alzheimer's disease, including over 60,000 residents in our own backyard of Orange County! Of course, this somber news about the imminent tidalwave of Alzheimer's disease couldn't come at a worse time, as the downturn in the economy and the budget crisis affecting California are having devastating consequences for higher education/research and much needed services for the elderly.

Since 2008, there has been a **\$1.15 billion shortfall** in state funding to the University of California. Faculty and staff

are being furloughed as part of cost-cutting savings. The grim news isn't only restricted to the University, as services for the elderly, among the most vulnerable members of our society, have been severely slashed. For example, the Caregiver Resource Centers were cut by 30%, and some programs were completely eliminated. In addition, the State budget included elimination of funding for Alzheimer's Day Care Resource Centers, affecting many adult day programs statewide that provide specialized care and support for persons with Alzheimer's disease or a related dementia and their caregivers. Additionally, cuts included a 3-day cap on the MediCal adult day health care benefit. Fortunately, as the result of a lawsuit, an injunction has been placed on implementation of this cap.

The UCI MIND clinic is one of 29 sites in the USA to be designated by the National Institutes of Health as an Alzheimer's Disease Research Center (ADRC). It is also one of 10 sites in the state to be designated as a California Alzheimer's Disease Center (CADC). Our clinic evaluates more than 400 patients per year, who receive comprehensive memory assessments providing patients and families with detailed information, diagnosis, and recommendations for treatment. Unfortunately, because of the budget crisis, the state **reduced its funding to our clinic by over 50%**—a most inopportune time as we face an impending epidemic of Alzheimer's disease.

...budget crisis forced the state to reduce its funding to our clinic by over 50%...

Rather than sitting passively, we plan to launch a "Save the Clinic" campaign. Watch for news about a wine tasting event, "**Save the Clinic: Wine for the MIND**" planned for February 27, 2010. UCI MIND Advisory Board member, Jacqueline DuPont, Ph.D., has gathered a dedicated committee whose goal is to keep the assessment and diagnostic clinic doors open. Plan to lend your support and consider helping us because if you are currently not worried about the impact that dementia will have on your family or our society, chances are very high that you will be at some point in the not so distant future. Please contact Linda Scheck at 949-824-3251 or via email (lscheck@uci.edu) to find out how you can help.



Jacqueline DuPont, Ph.D.,
Chair of the UCI MIND
"Wine for the MIND"
committee



IN THE NEWS

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

EPILEPSY RESEARCH AWARD

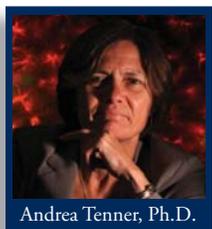
Dr. Tallie Z. Baram, the Danette Shepard Chair in Neurological Sciences, received the Epilepsy Research Award for Outstanding Contributions to the Pharmacology of Antiepileptic Drugs. Presented by the American Society for Pharmacology and Experimental Therapeutics at their annual conference in New Orleans, the award recognizes and stimulates outstanding research leading to better clinical control of epileptic seizures.



Tallie Z. Baram, M.D., Ph.D.

CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE GRANT FOR STEM CELL RESEARCH

The LaFerla lab was awarded \$3.6 million by the California Institute for Regenerative Medicine toward the development of an Alzheimer's disease therapy involving human neural stem cells. Dr. LaFerla is the principal investigator, which also includes researchers at UCI (Drs. Mathew Blurton-Jones and Peter Donovan), Scripps Institute, UC Santa Barbara, UC San Diego, and the Burnham Institute.



Andrea Tenner, Ph.D.

PROMISING DRUG RESTORES MEMORY FOR ALZHEIMER'S DISEASE

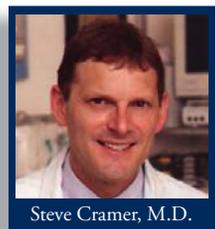
Work in the laboratory of Dr. Andrea Tenner shows that a drug called PMX205, similar to one used in clinical trials to treat rheumatoid arthritis and psoriasis was able to restore memory in mice exhibiting the symptoms of Alzheimer's disease. This discovery by UCI scientists offers hope that a new treatment may be on the horizon for people in the early stages of Alzheimer's.

HUNTINGTON'S DISEASE SOCIETY OF AMERICA: RESEARCHER OF THE YEAR

Dr. Leslie Thompson was recognized as 2009 Researcher of the Year by the Huntington's Disease Society of America at the national convention in Phoenix June 5-7. The award recognizes an individual who has made outstanding research progress in the fight against HD.



Leslie Thompson, Ph.D.



Steve Cramer, M.D.

FIRST STROKE-NEUROLOGY RECEIVING CENTER IN SOUTHERN CALIFORNIA

Dr. Steven C. Cramer, neurology associate professor, received the Vision in EMS Award for spearheading the creation of a Stroke-Neurology Receiving Center system in Orange County, the first in Southern California. Orange County's Health Care Agency designated UC Irvine Medical Center a Stroke-Neurology Receiving Center as part of Southern California's first program to direct patients to hospitals best equipped to provide state-of-the-art stroke care.

POTENTIAL VACCINE FOR ALZHEIMER'S DISEASE ALSO USEFUL FOR MUSCLE DISORDER

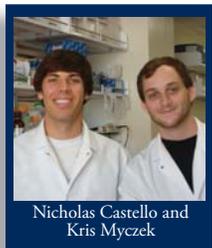
Work done in the laboratory of Dr. LaFerla with Drs. Masashi Kitazawa, David Cribbs, and Vitaly Vasilevko shows that a potential vaccine for Alzheimer's disease also has been shown in mice to slow the weakening of muscles associated with inclusion body myositis, the most common muscle disorder to afflict the elderly. The finding brings new hope for IBM patients with weakness, inflammation or atrophy of muscles in their fingers, wrists, forearms or quadriceps. There is no cure for IBM, nor is there an effective treatment.



Masashi Kitazawa, Ph.D.

NIH FUNDING ACADEMIC AND INDUSTRY COLLABORATION

Drs. David Cribbs, Michael Agadjanyan, and Ruth Mulnard were awarded a \$3.3 million grant from the NINDS to develop a vaccine for Alzheimer's disease in collaboration with Ichor Medical Systems of San Diego.



Nicholas Castello and
Kris Myczek

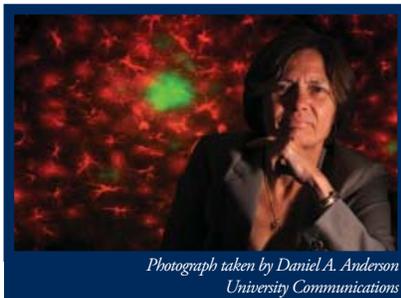
FELLOWSHIP AWARDED TO PRE-DOCTORAL SCHOLARS

Nicholas Castello and Kris Myczek were each awarded a prestigious pre-doctoral fellowship from the National Institutes of Health. The fellowship program provides financial support for promising doctoral candidates who are performing dissertation research and training in scientific health-related fields. Nick and Kris are 3rd and 4th year Ph.D. students, respectively, in the laboratory of Dr. LaFerla, studying the role of stem cells and neurogenesis on learning and memory.

Meet the Researcher Behind the Science

ANDREA TENNER, PH.D.

Andrea Tenner is a Professor in the Department of Molecular Biology & Biochemistry, with joint appointments in the Department of Neurobiology & Behavior, as well as in the Department of Pathology in the School of Medicine. As of 2007, she is also the first Associate Dean for Research in the School of Biological Sciences. Dr. Tenner obtained her Ph.D. from the University of California, San Diego, and was a postdoctoral fellow at Scripps Clinic and Research Foundation in La Jolla, CA. After a several years in the Washington DC area at the National Institutes of Health and the American Red Cross Holland Research Lab, she came to UCI in 1992 as an Associate Professor.



*Photograph taken by Daniel A. Anderson
University Communications*

As an immunologist, Dr. Tenner's research focus has been on the cellular, biochemical and molecular pathways that lead to, and regulate, inflammation. At UCI, she quickly became incorporated into the growing UCI Alzheimer's Disease Research Center. Her expertise and the use of a multidisciplinary approach combining immunology, biochemistry, neurobiology and behavior have brought novel insights into the factors that influence the progression of Alzheimer's disease. Specifically, using in vitro and in vivo systems, she is defining the role of the innate immune system's complement cascade, which while critical in the body's fight against pathogens, can cause tissue damage if improperly controlled, particularly in individuals with conditions that create an excessive response, such as plaque deposits that are more resistant to clearance and degradation. Recently, her lab reported promising results in which an orally available, small molecule inhibitor of inflammation slows the progression of hallmark neuropathology in AD mouse models and rescues cognitive function in those mice. Dr. Tenner is currently pursuing these results and will continue to utilize the UCI MIND connections to bridge basic research to the clinical arena.

Dr. Tenner became a AAAS Fellow in 1994 and was awarded the UCI Emeritae/i Association Faculty Mentorship Award in 2006.

Meet the Institute's Administrator

ANDREA WASSERMAN



As an undergraduate at UCI, I pursued a biology degree. I was convinced that I wanted to go to medical school and was advised to volunteer in a research lab to gain experience and to interact with a professor, which would help secure a strong letter of recommendation. I began my undergraduate research project in the laboratory of Dr. Carl Cotman of the Institute for Brain Aging and Dementia (IBAD), now known as the Institute for Memory Impairments and Neurological Disorders (UCI MIND). As my experience and exposure to lab research grew, I realized that research fascinated me more, as I thoroughly enjoyed using all of the high-tech equipment.

Upon graduating from UCI with a biology degree, I was offered a position in the Cotman lab as a cell culture technician in August of 1988. Last summer was my 20th anniversary working at UCI, with all of that time dedicated to the Institute. I have held many positions with the Institute including technician, staff research associate in the brain bank, and lab manager. Two years ago, I was offered the opportunity to become the administrator of the Institute, and with deep enthusiasm, I accepted the challenge.

As the administrator, I have many responsibilities including overseeing all aspects of staff personnel, grants management, lab space maintenance, special projects and providing tours of the Institute. The later is truly a highlight for me. Community individuals are invited to come to UCI and visit the research lab, the brain bank, see how a pathologist diagnoses Alzheimer's disease, look through a microscope to see living neurons, and most importantly ask questions and become more informed about the disease. Interacting with the public in a personal way is a true privilege for me.

As the state and the nation face a possible epidemic of Alzheimer's disease, it is very important for all of us to have a better understanding of the nature of the disease, how to diagnose it, and a clear perspective about the research that is on-going here, with the ultimate goal of identifying a therapeutic, or better yet a cure, for the disease. I am excited to play a small part in that process, and I invite all of those that are interested to come visit UCI MIND.

TEACHING THE FUTURE PHYSICIANS OF TOMORROW

Ruth Mulnard, R.N., D.N.Sc., F.A.A.N.



Earlier this year, the Institute was fortunate to partner with the Program in Geriatrics on a successful grant proposal awarded from the Donald W. Reynolds Foundation. The grant focuses on novel training strategies for our medical students here at UCI. Our contribution to this proposal was the creation of an educational program called “Dementia Care: Bench to Community,” which aims to walk the physician learner through the experiential spectrum of dementia care encompassing the basic science research perspective, the clinical diagnostic experience, clinical trial opportunities, community resources for levels of care (including support groups), and final clinical-pathological case examinations. This is the first program of its kind, attempting to shape the education of physicians in training to thoroughly embrace the continuum of dementia care issues that they will encounter in their future medical practices. Emphasis is placed on clinical care, community engagement and resources, and multiple kinds of research that are essential to make a difference in this

epidemic disease. During the summer of 2009, we piloted this new educational module with one of UCI’s finest medical students, Wonita Youm, who had just completed her first year of UCI’s medical school curriculum. Wonita embraced this educational opportunity with tremendous fervor and dedication. A direct quote from Wonita sums up the impact of this new program:

“I believe the experiences I gained here will remain with me for the remainder of my career – it was truly a multidisciplinary cross-section of medicine – of how clinical methods, clinical research, lab-based research, and community groups all work cooperatively together to support a population of patients and their family members. This collaborative effort, in the spirit of providing the best care possible for the patient is what is missing from so many centers now. Instead of viewing patients as profit centers, I saw how every person on these teams, took each case with the greatest care, and did their best to ensure that patients received the best care, the best information and access to resources possible.”



DEMENTIA AND DENTURES

William R. Chase, D.D.S.

A rather large segment of the elderly population wears dentures. Maintaining optimal oral health for the denture wearer with Alzheimer’s is a difficult responsibility for any caregiver.

Most people assume that once teeth are lost, oral problems cease to exist. This couldn’t be farther from the truth. Even though a person’s teeth have been removed there is still sensitive, soft tissue present within the mouth. This tissue requires continual care otherwise more serious conditions may arise such as pre-cancerous or cancerous tumors as well as the unnatural growth of gum tissue.



Here are a few tips that caregivers may follow to insure optimal oral health for the Alzheimer’s patient:

1. Remove dentures at night while sleeping.
2. Keep dentures in a professional, over-the-counter solution when outside the mouth.
3. Never let dentures become completely dry. This will cause them to warp.
4. Before placing the dentures back in the mouth, brush the artificial teeth and polished plastic areas with a commercial-grade denture toothpaste.
5. **Do not brush the inside part of the denture that fits up against the gum tissue.** Use a wet cloth to wipe away any food particles that have collected there. (Brushing this part of the denture with a bristle brush will tend to wear away the plastic resulting in a loose fitting denture)
6. If the patient is unable to be without their denture even at night, make sure it is removed for at least 4 hours during the patient’s waking hours in order to give the tender tissues inside the mouth a chance to expand and breathe.

CLINICAL TRIALS

STUDIES SEEKING PARTICIPANTS

FOR MORE INFORMATION, PLEASE CONTACT US AT
(949) 824-5733 OR VISIT OUR WEBSITE AT:
www.mind.uci.edu/studies/clinicaltrials.html

LY2062430 Study for Alzheimer's Disease Clinical Trial

A double-blind, placebo-controlled 80-week study to evaluate whether LY2062430 is able to slow the rate of mental decline in individuals with Alzheimer's Disease (AD).

LY2062430 is a passive immunization approach for the possible treatment of Alzheimer's Disease. "Passive immunization" is when the antibodies are given directly, so the body does not need to make its own antibodies.

This study is recruiting participants who:

- Have a diagnosis of probable AD
- Are 50 years of age or older
- Are able to receive intravenous medications
- Have a study partner – friend or relative who can accompany the participant to all clinic visits and answer questions about him/her
- There are 23 total visits to the UC Irvine campus. Visits are every 2-4 weeks

Nicotinamide (NA) Clinical Trial

A double-blind, placebo-controlled 7-month study to find out more about Nicotinamide and its effects on Alzheimer's disease progression.

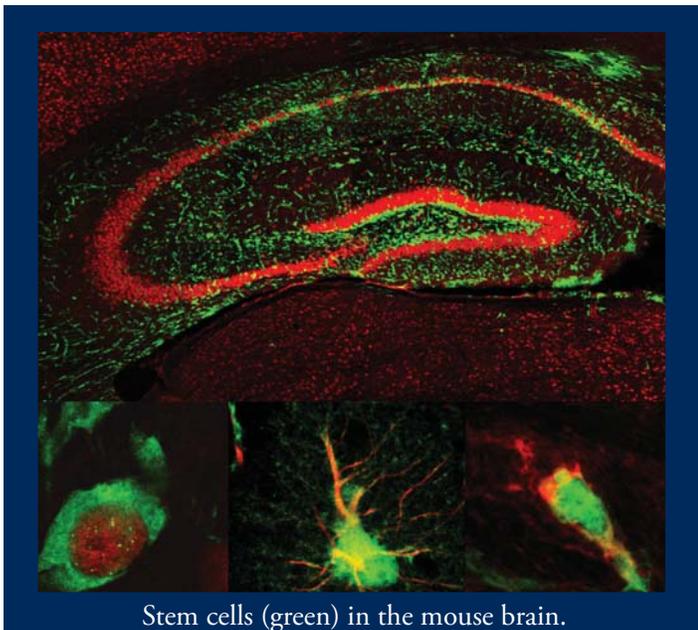
Nicotinamide (NA) is a class of drugs known as a HDAC inhibitor, a dietary supplement that is being studied to determine whether chronic use is safe and effective in improving brain function in subjects with mild to moderate Alzheimer's disease (AD).

This study is recruiting participants who:

- Have a diagnosis of probable AD
- Are 50 years of age or older
- Have a study partner – friend or relative who can accompany the participant to all clinic visits and answer questions about him/her
- There are 7 total visits to the UC Irvine campus. Visits are every 2-6 weeks

Continued from page 1, Stem Cells and Alzheimer's Disease

of the major brain cell types: neurons, astrocytes, and oligodendrocytes. Importantly, neural stem cells can be isolated from adult organ donors, thereby avoiding ethical concerns.



Stem cells (green) in the mouse brain.

The general goal of stem cell therapy for brain disorders is to restore brain function that was damaged due to trauma or disease. Research suggests that there are two main ways in which neural stem cell transplantation may help. The first mechanism is termed 'cell-replacement,' in which the stem cells are coaxed into becoming the correct type of brain cell that is damaged or lost in the disease. This method is being aggressively pursued for the potential treatment of Parkinson's disease because a very specific subset of brain neurons dies in this disorder. In contrast, in Alzheimer's disease, many different types of neurons within several different brain regions become dysfunctional and die. For this reason, a cell replacement strategy will be much more difficult to achieve in Alzheimer's disease, which probably accounted for the few experiments done with stem cells for the treatment of this horrible dementia.

A second approach, however, by which stem cells can help to reestablish brain function is by 'nursing' the patient's own brain cells back to health, restoring their

Continued on page 8

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.

ORANGE COUNTY AGING PROJECT

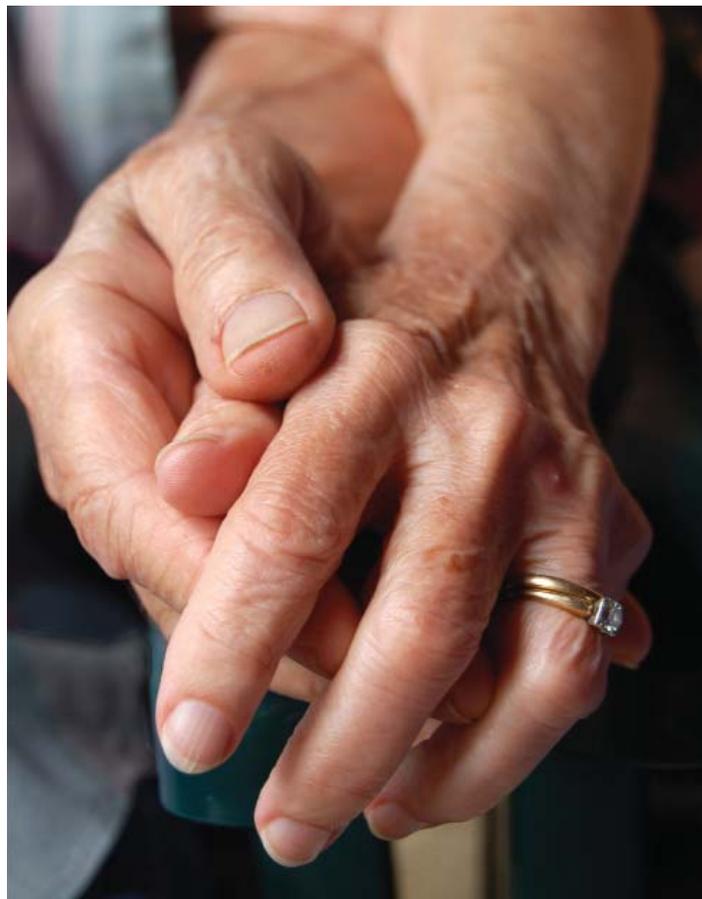
Are you a healthy adult over the age of 75? Volunteers are needed for a study on gene patterns and thinking in older adults. In this project, you will have your thinking and memory tested and some of your blood will be drawn.

Studies will involve 3-5 visits over a period of several years, with each taking between 1 and 2 hours. You will be given a free breakfast each visit.

In order to take part you must be:

- over 75 years of age
- a fluent English speaker
- in good general health
- currently living in the Irvine/Orange County area
- not currently taking medication for your memory

If you would like to participate, or receive further information about the study, please phone or email Dr. Dan Berlau at: 949-824-9124 or aging@uci.edu



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. 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. You will also be asked to give several small saliva samples throughout the experiment.

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: Afternoon (between the hours of noon-6pm)

Time: Two visits, each 1.5-2 hours long

For more information or to sign up call: Sabrina Segal at (805) 338-9246.

UCI MIND CELEBRATES WITH AN OPEN HOUSE

On September 15, 2009, more than 200 people gathered to celebrate the naming of the Institute for Memory Impairments and Neurological Disorders: UCI MIND. Family members, researchers, leading administrators from the campus and a distinguished group of Institute supporters and board members joined UCI MIND community partners from the Orange County Alzheimer's Association and Alzheimer's Family

Services. The special event was initiated by a lecture by Dr. Claudia Kawas entitled "How to get old: lessons from the 90+ year olds." Guests were then escorted to the new UCI MIND space on the third floor of



Enjoying the Open House are Shirley Sirivong, Dr. Frank LaFerla, Carla Liggett, Linda Scheck, and Boyd Steele.



Dr. Kawas delivering the open house keynote address

Biological Sciences III, where a special unveiling ceremony was held. Festivities included tours of the Memories in the Making original artwork led by docents, LaDoris Sam Heinly and Marilyn Lowry, and an opportunity to view our tribute wall recognizing the Pioneers in Neurology.

UCI MIND graduate students also provided tours of the lab, which included an examination of a human brain and spinal cord.

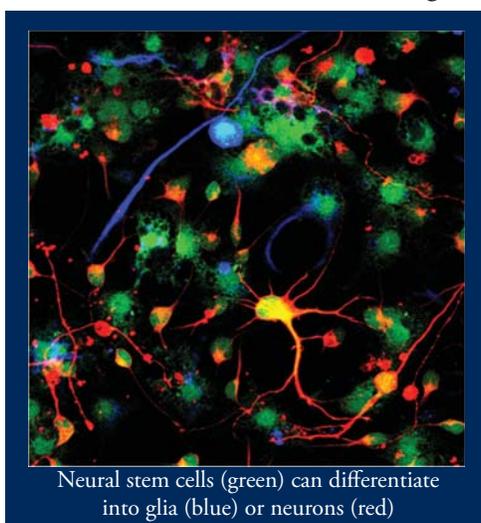
Video of the event can be found on YouTube at www.youtube.com/UCIMIND

Continued from page 6, Stem Cells and Alzheimer's Disease

normal function and preventing neuronal death. This approach appears to be far more promising in terms of treating Alzheimer's disease. In fact, here at UCI, this is precisely what we found: adult neural stem cells can nurse the damaged brain back to health in a mouse model of the disease.

My own research done in the laboratory of my mentor, Dr. Frank LaFerla, shows that neural stem cells can restore memory deficits in aged mice with advanced Alzheimer's disease pathology. Mice were transplanted with either neural stem cells or a control injection and one month later tested on two different measures of learning and memory. Interestingly, the Alzheimer mice that received neural stem cells performed significantly better, showing memory performance equivalent to normal mice. Our studies indicated that only a small proportion of the stem cells had turned into neurons. Rather the majority of stem cells became astrocytes, a type of support cell needed

to maintain brain function and health. We found that the transplanted cells were making a beneficial protein called BDNF that helped to create more connections between the remaining mouse brain cells. This observation is important, as previous studies showed that it is the loss of these connections, called synapses, that best correlates with Alzheimer's dementia. Essentially, the transplanted neural stem cells were helping to nurse the injured brain back to health.



Neural stem cells (green) can differentiate into glia (blue) or neurons (red)

Several questions remain to be addressed before it will be possible to utilize stem cell therapy for Alzheimer disease in humans. To continue these studies and hopefully bring this approach closer to clinical application, the LaFerla lab is collaborating with leading scientists throughout the state of California and even in Australia. The long-term goal of this research is ultimately to identify a human neural stem cell line that can be introduced in a clinically-meaningful way. ■

TODAY OR TOMORROW, CONSIDER A GIFT TO UCI MIND

Linda Scheck



Many of us, if given a chance, would like to leave some kind of lasting legacy to show that our lives have made a difference in society; that in some way, we have contributed to an important discovery or breakthrough that will benefit the lives of others for generations to come. We are at the precise time in history where that opportunity is very apparent and the need is immense. At this moment in time, we are inundated by the impact of 35 million cases of Alzheimer's disease in the world and we have recently learned that it is going to grow to 65 million by 2030 and over 115 million by 2050.

How can you make a difference? Giving to UCI MIND can be very satisfying, especially when you combine it with financial and estate planning, allowing you to enjoy greater tax and financial benefits.

TODAY

A direct gift of cash is the most popular way of giving – and the simplest. Your gift is immediately available to support our research. Every dollar that you give is deductible in the year that it is given.

A gift to UCI MIND before December 31, can reduce your federal tax bill, as well as help to provide for research that you care most about right here, right now. If you itemize your deductions on your federal return you can save a substantial amount.

TOMORROW...YOUR IRA

If you are more than 70 ½ years old you can benefit from the \$750 Billion Bailout. Did you know that a little-noticed section of the "Wall Street Bailout Bill" extends certain provisions of the Pension Protection Act of 2006, which permit you to make charitable donations this year and next using assets from your IRA? Such a gift enables you to completely avoid taxes on funds withdrawn from your IRA for this purpose – even if those funds are part of your required distribution for this year. Extracting money from an IRA without having it count toward your adjusted gross income can provide tremendous tax, Medicare, and Social Security advantages. Consult your tax

advisor if this option interests you. Also, to protect your tax benefits, make sure that if you do choose to make a gift in this way, you advise your IRA custodian to transfer the funds directly to UCI MIND.

TOMORROW...A BEQUEST

Include a bequest in your will or living trust for UCI MIND.

A bequest can be:

- A specific dollar amount
- A percentage of the estate
- A specific asset

A bequest can create a named UC MIND endowment to provide support in perpetuity for the purpose you designate as well as honor the life and legacy of a loved one.

You retain control of your assets during your lifetime.

You enjoy the satisfaction of knowing you are providing vital support to future UCI MIND researchers, families and individuals who will benefit from their work.

To make a bequest, please consider sharing the suggested language below with your legal advisor:

SAMPLE BEQUEST LANGUAGE

I give to the UCI MIND, University of California, located in Irvine, California, the sum of \$_____ (or _____% of the residue of my estate; or the property described herein) to be used for _____ (specify purpose).

The University has qualified professionals who offer guidance and assistance as you contemplate these tax-wise giving opportunities, at no cost to you.

To arrange for a meeting with UCI's qualified professionals or for more information on contributions to UCI MIND, contact:

Linda Scheck
UCI MIND Director of Community Relations
2646 Biological Sciences III
Irvine, CA 92697-4545
phone: (949) 824-3251
email: lscheck@uci.edu

DONATIONS *from* February 2009 - September 2009

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.

Institute Benefactors of Distinction

Anonymous
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Generosity is a celebration. When we give something to someone we feel connected to them and our commitment to the path of peace and awareness deepens.

- Sharon Salzberg

In Memory of Rita Lanza Healy cont.

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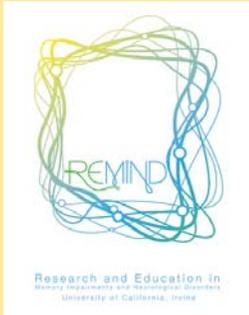
Ruth Van Heukelom

In Memory of Craig Westerhoff

Cynthia K. Ching

UCI **M**IND Mission

The Mission of the Institute for Memory Impairments and Neurological Disorders is to advance research in Alzheimer's disease, with the goal of understanding and discovering its causes and the factors that affect its progression. The Institute is one of the few translational research units on campus, seeking to bridge science-based discoveries to complement the clinical program. Our goal is to diagnose the disease, identify means for effectively treating it, and provide help to families and caregivers.



ReMIND: EXCITING NEW STUDENT GROUP FORMED

UCI MIND is proud to introduce the formation of a new student society called ReMIND (Research and Education in Memory Impairments and Neurological Disorders). ReMIND was created to encourage the next generation of scientists to study neurological disorders, and to provide them with a platform for scholarly activities. ReMIND seeks to promote four goals. First, ReMIND will provide young scholars with special opportunities to enhance their educational experience. Second, ReMIND seeks to help educate the local community by inviting distinguished researchers from throughout the country to promote a better understanding of neurodegenerative disorders. Third, ReMIND will foster outreach by facilitating community related service. Lastly, ReMIND seeks to promote research collaborations among the diverse laboratories studying neurological disorders at UCI. Please email us at ReMINDuci@gmail.com for more information or to become involved.



ReMIND students participating in the 2009 Huntington's disease walk.
Maya Koike, Emily Mitchell, Kara Neely

BETTY'S FOUNDATION - AN INSPIRATION

The energy and enthusiasm of the five young people is contagious. They all love their Grandma Betty, 83, who lives in the Midwest with her daughter and son-in-law. The grandchildren live in Southern California and they wanted to do something to make a difference. So they have!



Betsy, Mark, Karah, Clint and Holly formed Betty's Foundation, a private, non-profit organization with a mission: "Betty's Foundation for the Elimination of Alzheimer's Disease" is a family operated non-profit organization inspired by personal adversity. The goal of the Foundation is to provide awareness, education, and support research for the cure of Alzheimer's disease."

Beginning just this year, the list of events they have created includes a garage sale in May, a jewelry party in June and then, the inaugural "Remember the Music" benefit concert and silent auction at The Mint in Los Angeles in September. Their Grandma Betty loves music and always has, so a musical benefit was a natural. Their last event of the year will be the Memory Walk in Huntington Beach on Halloween.

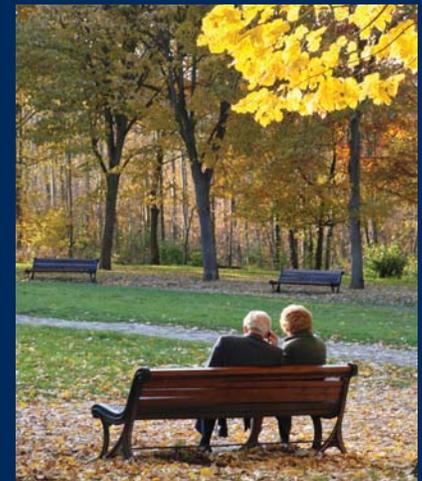


Betty Bowers at a young age.

After investigating research institutes to whom they would donate, they chose UCI MIND. Their pro-active style is helping making a difference. Grandma Betty would be very proud! For more information, contact Linda Scheck, lscheck@uci.edu or 949-824-3251 to learn more about Betty's Foundation.

Help Make A Difference

How to Contribute to UCI MIND



- 1.) Checks should be made payable to UCI MIND
- 2.) 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.
- 3.) Please mail all donations to:
UCI MIND
Attn: Linda Scheck
2646 Biological Sciences III
Irvine, CA 92697-4545

There are many ways to support the clinical and basic science research activities at the UCI Institute for Memory Impairments and Neurological Disorders. 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/donate.html

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* Layout for The Aging Brain Newsletter was prepared by Shirley Sirivong



**INSTITUTE for MEMORY IMPAIRMENTS
and NEUROLOGICAL DISORDERS**

*Save the Date –
Save the Clinic*

*“Wine for
the Mind”*

February 27, 2010



Plan to lend a hand & consider supporting this worthwhile cause. Enjoy unique wines while helping to raise funds to support the Diagnostic Memory Assessment Clinic at UCI MIND.

*For more information & sponsorship opportunities please contact
Linda Scheck
949 . 824 . 3251*



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