

### FOCUS ON RESEARCH

## Traumatic Brain Injury and Alzheimer's Disease

**Murray Raskind, MD**

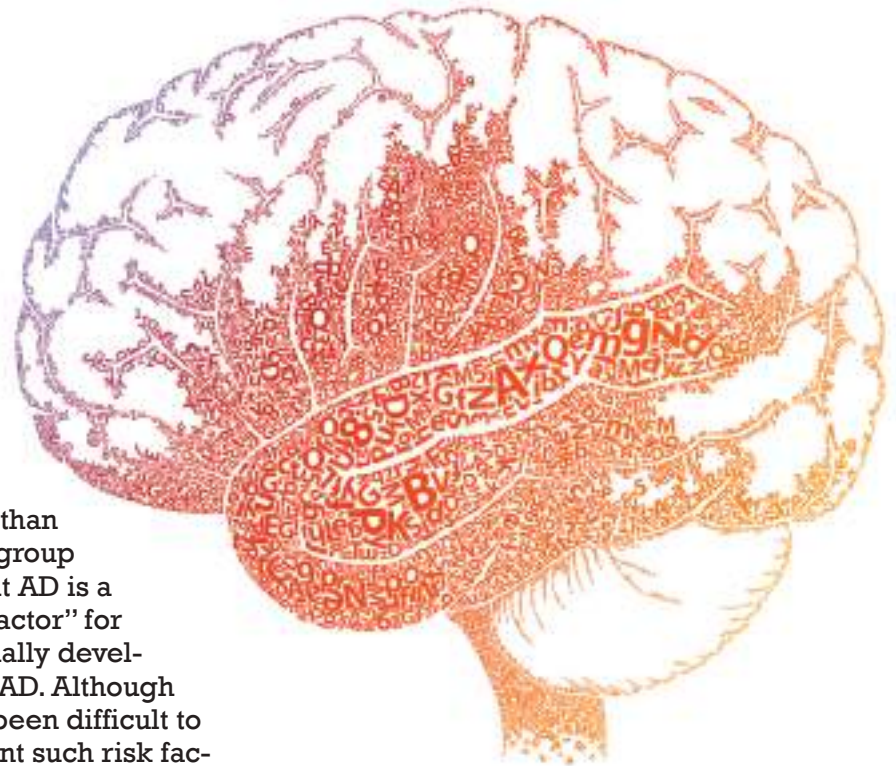
Director, ADRC

What do traumatic brain injuries from blows to the head on the football field or from blast shock waves in combat in Iraq and Afghanistan have to do with Alzheimer's disease (AD)? At first, these two brain disorders may seem unrelated. After all, the brain damage from head trauma happens suddenly and afflicts people of all ages. In contrast, the brain damage from AD is an insidiously progressive process that develops over many years and afflicts people in late life. Surprisingly, however, recent research suggests that these two seemingly unrelated assaults on the brain are linked in several important ways. These links provide important clues to the cause (or causes) of AD and provide direction for new approaches to its prevention and treatment.

The first link comes from epidemiology studies of AD. These studies compare groups of people with AD to groups of people of the same age who are fortunate not to have AD. Scientists compare the life histories of these two groups, looking for differences in their past illnesses or injuries, exposure to such things as medications and industrial toxins, alcohol and tobacco use, dietary habits, and physical and mental activity. Any disorder or exposure that is found more frequently in the AD

group than in the group without AD is a "risk factor" for eventually developing AD. Although it has been difficult to pinpoint such risk factors, one risk factor that has consistently emerged is a history of traumatic brain injury earlier in life that caused loss of consciousness. Indeed, traumatic brain injuries increase a person's risk of developing AD by two-fold. It is now clear that for some people—and we do not yet know what makes people more or less susceptible to this effect—traumatic brain injury makes it easier for AD to attack the brain.

Clinical and laboratory studies have also demonstrated important links between traumatic brain injury and AD. For instance, scientists have discovered that the immediate brain responses to traumatic brain injury are



### *In This Issue*

<b>Global Cost of Dementia</b>	<b>3</b>
<b>Meet Lucy Wang, MD</b>	<b>4</b>
<b>Legacy of Love</b>	<b>6</b>
<b>Minorities &amp; Alzheimer's</b>	<b>8</b>
<b>In the News</b>	<b>9</b>
<b>Save the Date</b>	<b>11</b>
<b>See Inside for Research Studies Seeking Volunteers</b>	

*continued on page 2*



*continued from page 1*

remarkably similar to the brain changes in AD. Immediately after traumatic injury, the brain produces large amounts of beta amyloid—this is the very same protein that appears to be toxic to brain neurons when excessive amounts gradually accumulate over many years, forming in the amyloid plaques that are a central diagnostic feature of AD. Intriguingly, these deposits of beta amyloid into plaques do not occur immediately following traumatic brain injury. If we can figure out what prevents plaque formation despite large beta amyloid release in response to

brain trauma, we may be able to prevent the formation of toxic beta amyloid deposits in AD.

The long-term brain response to traumatic injury provides another link to AD. Abnormal tau proteins in the form of neurofibrillary tangles are found in damaged brain neurons of AD patients, and they may also be a long-term consequence of traumatic brain injury. First observed in boxers who became “punch drunk” in midlife, these tau neurofibrillary tangles are increasingly being found in the brains of football players and other athletes who have suffered repeated concussions from head trauma. These

traumatic brain lesions and the cognitive loss they cause, which together are referred to by doctors as “chronic traumatic encephalopathy” or “CTE,” are of increasing concern to our military because of the very common blast concussions and other brain traumas suffered by our Service Members during combat in Iraq and Afghanistan. Are these young men and women at increased risk for CTE and eventual early-onset AD?

Under the leadership of University of Washington Alzheimer’s Disease Research Center Associate Director Elaine Peskind, MD, we have initiated major research efforts to unravel the relationships between traumatic brain injury and AD. We are using multiple advanced brain imaging techniques, measuring brain chemicals in cerebrospinal fluid that indicate brain damage, and carefully performing neuropsychological testing to determine these relationships in Veterans who have returned from Iraq and Afghanistan, athletes who have experienced several concussions from head trauma, and others in the community who have never experienced traumatic brain injury. These studies have great promise to develop new targets for the prevention and treatment of AD.

## TRAUMATIC BRAIN INJURY STUDY

*Were you deployed to Iraq or Afghanistan?*

We are looking for both blast-exposed and non-blast-exposed volunteers to participate in our study.



**Contact Brady Barnes (206) 277-1272**

# 4<sup>th</sup> Annual Alzheimer's Benefit Dance

Sky Valley Whirlwinds

Sunday, February 27, 2011

1:00 PM – 4:00 PM

Edmonds Masonic Hall

515 Dayton, Edmonds, 98020

*Dance held in memory of Marty Barth.*

**Proceeds from the dance will go to:**

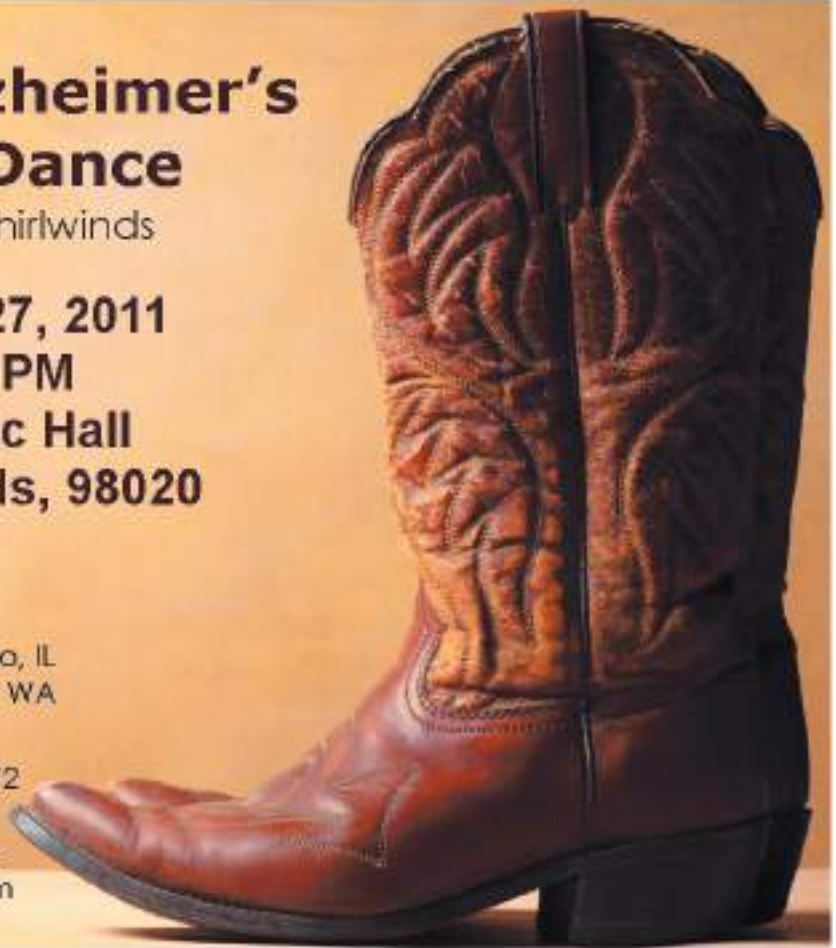
Rush University Medical Center, Chicago, IL  
University of Washington ADRC, Seattle, WA

**Donate:** Alzheimer's Benefit Dance

PO Box 1163, Monroe, WA 98272

Contact Joe Bahr for more information:

206-310-5627 or JLBahr777@hotmail.com



## The Global Cost of Dementia

**Michael S. Rafii, MD, PhD**

Associate Medical Director, Alzheimer's Disease Cooperative Study

The Global Economic Impact of Dementia, the first study of such scope to examine the macroeconomics of all types of dementias, released by the non-profit group Alzheimer's Disease International 2010 includes some hard-to-ignore data. About 35.6 million people worldwide live with some type of dementia — about four times the population of Sweden. That caseload will increase to 65.7 million by 2030 and 115.4 by 2050. It seems that with each new study, the numbers get bigger and scarier.

The report estimates that the annual cost of care for demented patients at over \$600B or about 1% of the world's gross domestic product. Astoundingly that figure is dwarfed by the projected rise in costs over the next few decades. In fact, the report estimates that costs could reach nearly \$2 trillion by the year 2050.

While a cure is the goal that everyone seeks, a cold economic look at the disease makes it clear that the crippling expense of care comes primarily from patients in the moderate to severely demented stages of illness, when they cannot administer their own lives.

While simply delaying progression to those stages might seem to be an uninspiring health care goal, it is a very attractive economic goal. Simply delaying progression by two years would have a tremendous impact in costs.

Governments and policymakers are paid to take the longer view, and this report should be a wake-up call. To that end, earlier intervention and robust treatment, including a balanced diet, physical exercise, pharmaceutical therapy, and tight control of diabetes and any present cardiovascular risks, should be a high priority in the primary care setting.

# Meet Lucy Wang, MD, Research Psychiatrist



**By Kirsten Rohde, RN**

Dr. Lucy Wang has been a member of the Alzheimer's Disease Research Center (ADRC) research team since 2007, when she received a Research Fellowship from the VA Mental Illness Research, Education, and Clinical Center. Many research participants meet Dr. Wang in the ADRC clinic as part of their involvement in research studies. Dr. Wang is also the main doctor for a study that is evaluating the effectiveness of a medication called prazosin for the treatment of disruptive behaviors in dementia. We all enjoy working with her and thought it was time to hear from her about her work.

Dr. Wang was born in Pennsylvania, the oldest daughter of two mathematicians who emigrated from Taiwan. She says that her parents' professions and inter-

ests instilled in her an inquisitive mind and a love for math and science. These interests led her to study research and biology at Massachusetts Institute of Technology (MIT) and then on to Penn State Medical School at Hershey, where she found her vocation in psychiatry, a field Dr. Wang considers the perfect combination of working with people and science. As part of her training rotation in geriatric psychiatry, she worked extensively with people who had Alzheimer's disease and experienced behavioral problems. These experiences made a lasting impression on Dr. Wang; she realized that "this was an area of medicine and psychiatry that deserved more attention than it was getting."

She went on to complete her medical residency at the University of Washington in 2006, and a geriatric psychiatry fellowship in 2007. One of Dr. Wang's preceptors during her residency and fellowship was Debby Tsuang, MD, who works at the VA with the ADRC. In Dr. Wang's fourth year of residency, she did a research project, under Dr. Tsuang's supervision, to study how people's scores on a specific memory test may be related to the development of Alzheimer's disease. If you have participated in research at the ADRC, you have most likely been asked to listen to a short story and then to try to recall as much of the story as possible—

this test, known as the Logical Memory test, is the test Dr. Wang was studying. [She found that people's scores on the Logical Memory task was indeed an indicator related to the development of Alzheimer's disease.]

Once at the VA in Seattle, Dr. Wang also started working with Elaine Peskind, MD, the associate director of the ADRC, particularly on Dr. Peskind's research on the drug prazosin for the treatment of disruptive behaviors. Currently, Dr. Wang is a key researcher in this study. She takes calls from family members who inquire about the study, assesses research participants at their first appointments, and oversees participants' progress while they are participating in the study. She is also a member of the geriatric psychiatry consulting team that visits the Caroline Kline Galland Home twice a month. This team provides residents of Kline Galland psychiatric assessments and recommendations for treatment. Some of these residents also participate in the prazosin study. The volunteer consulting team has been valued greatly by the Caroline Kline Galland Home staff and has been providing consultations there for over twenty years.

*continued on page 5*

continued from page 4

We are very happy to announce that Dr. Wang will be continuing to work within the ADRC, as she recently received word that the VA has presented her with a VA Career Development Award, a grant that is designed to support new researchers in their attempts to find out more about illnesses that negatively affect veterans. Dr. Wang's work will focus on the role of the neuro-endocrine system in agitation and dementia. Her study will compare the levels of certain stress-related hormones and proteins in people with dementia to people without dementia. She will also examine the levels of these hormones and proteins in people with dementia who

have agitated behaviors. These levels will be measured by collecting saliva samples. Additionally, participants' overall activity or movements will be measured over a forty-eight-hour period using a method called actigraphy in which participants wear a wristwatch-like device that measures how active a person is. This research is designed to discover if there are ways to demonstrate measurable changes in the brain that are related to agitated behaviors.

Being a researcher can mean a busy life, but Dr. Wang enjoys reading mystery novels in her spare time. She also enjoys spending time with friends and family.

## Dimensions by email?

**If you would like to receive this newsletter by email in the future, please send your email address to:  
susan.martin@va.gov.**

Please put "Dimensions email list" in the subject line and put your name as it appears on this issue's mailing label in the body of the message so we can take you off the list for receiving a paper copy.

We will send future newsletters to you by email in a pdf format. Additionally, all issues of Dimensions are available at our website:  
[www.uwadrc.org](http://www.uwadrc.org)

## DIFFICULT BEHAVIORS & ALZHEIMER'S DISEASE



The Alzheimer's Disease Research Center is studying a new use for an old medication. We are currently investigating the use of a blood pressure medication, prazosin, for its effectiveness in the treatment of behavioral problems. Potential participants must have Alzheimer's disease or a related dementia and be living at home with a caregiver willing to accompany them to the research clinic in Seattle, stable medically, and stable on any current medications. Each study participant will have a 50:50 chance of being on the medication, prazosin, or on placebo (a sugar pill) for the first half of the study. In the second half all participants receive prazosin. All participation is free of charge.

**For more information, call: 1-800-317-5382**

# Remembering the Legacy of Love:

## Alzheimer's Association Fifth Annual African American Caregivers Forum

**By Rowena Rye**  
Director Community Resources

The Alzheimer's Association 2010 Alzheimer's Disease Facts and Figures includes a special report on race, ethnicity, and Alzheimer's disease. The report is published each year by the Alzheimer's Association and provides a statistical resource for U.S. data related to Alzheimer's disease - the most common type of dementia - as well as other dementias.

What is most striking about this year's report is the projected growth in the number of Americans who are expected to develop Alzheimer's disease. Currently, 5.3 million Americans have Alzheimer's disease or a related dementia. In Washington State, that number is 110,000. The report anticipates that this number will double by 2025 and triple by 2050. At present, someone in the United States develops Alzheimer's disease every seventy seconds.

And for every person with dementia, there are unpaid caregivers - family members, friends, and neighbors who all contribute to the care and support of someone with dementia. In Washington State, that number is currently 204,000.

According to the special report, older African Americans are two times more likely than Caucasian Americans to have Alzheimer's disease and other dementias. When differences between racial and ethnic groups are found, it is sometimes assumed that the difference must be due to genetic factors, but no known genetic factors can account for the difference in prevalence of Alzheimer's disease and other dementias (The special report also looked at the prevalence of Alzheimer's disease and other dementias in the Hispanic community).

On the other hand, conditions such as high blood pressure and diabetes, both of which are known risk factors for Alzheimer's disease and other dementias, are more common in older African-Americans and Hispanics than in older whites.

The increased prevalence of high blood pressure and diabetes most likely accounts for some of the differences in prevalence of dementias among these groups.

This prevalence is a large part of why the Alzheimer's Association organizes, and Aging and Disability Services of Seattle/King County helps underwrite, the African American Caregivers Forum. This year's theme is Remembering the Legacy of Love and will be held at a new location (see details below) to accommodate the growing number of caregivers who will attend this year's forum.

*continued on page 7*





This year's Keynote Speaker is Seattle broadcast veteran Connie Thompson of KOMO 4 NEWS.

No stranger to the challenges faced by caregivers, for the past several years Connie and her sisters have been providing the emotional, social, and physical support for their mother in her daily struggle with dementia.

#### **Other Forum Highlights Include:**

- **George Dicks**, Geriatric Mental Health Practitioner at Harborview Medical Center, and member of the Aging and Disability Services Advisory Council, presenting on "Coping with Behavioral Symptoms of Dementia".
- **LeNora Hughes**, accomplished consultant, advocate, educator and an activity therapist, will share "In-Home Activities & Alzheimer's Disease: An Integral Part of Caring".
- Lunch will be provided and includes a **Caregivers Panel Discussion**
- **Dr. James Leverenz**, Neurologist from the University of Washington Alzheimer's Disease Research Center addressing "Alzheimer's Research and African Americans – Why it's important, Why get involved".
- **Pastor Gwendolyn Coates** will conclude the forum with a benediction.

For more information and to register online, visit:

[http://www.alz.org/alzwa/in\\_my\\_community\\_13864.asp](http://www.alz.org/alzwa/in_my_community_13864.asp)

November 20, 2010  
The DoubleTree Guest Suites  
16500 Southcenter Parkway  
Tukwila, WA 98188

Free-of-charge but early registration is encouraged.  
Breakfast and lunch are included.

If you need transportation to the event or are interested in arranging for respite care for the day of the event, contact:

**Rowena Rye, Director Community Resources, 206.529.3866, [Rowena.Rye@alz.org](mailto:Rowena.Rye@alz.org).**

If you are interested in sponsorship opportunities contact Rowena Rye,.

If you are interested in reading the Alzheimer's Association 2010 Alzheimer's Disease Facts and Figures, please visit the Association's Web site at [www.alzwa.org](http://www.alzwa.org).

## Survey Reveals Gap in Understanding of Alzheimer's Disease Risk and Prevention among Most Vulnerable Populations

**From the Alzheimer's Disease Information Network, May 2009, E-Newsletter**

African Americans and Hispanic Americans are more likely to develop Alzheimer's disease (AD) than Caucasian Americans. They also have higher rates of diabetes, hypertension, high cholesterol, and cardiovascular disease, all of which increase the risk of Alzheimer's disease. A 2009 survey of 601 African American adults and 602 Hispanic American adults by Eisai Corporation and the Congressional Black Caucus Foundation shows, however, that these minority groups have less knowledge about the disease and take less advantage of interventions than Caucasian Americans.

The margin of error for this survey is plus or minus 4 percent. The African Americans who were surveyed expressed higher levels of concern about AD than their Caucasian counterparts, but only half knew that people can take action to decrease risk factors related to the onset of AD. Data also showed that 65 percent of African Americans and 49 percent of Hispanic Americans believe race plays a role in the quality of care they receive for AD. A majority of the respondents supported an Alzheimer's screening test and thought the government should do more to ensure access to AD-related health care. They also identified several barriers to appropriate care, including cost and the perception that quality of care is influenced by race.

Alzheimer's Disease  
Research Center, University  
of Washington and VA Puget  
Sound Health Care System  
Genetic Studies of Dementia

The Genetics Program of the Alzheimer's Disease Research Center at the University of Washington and the VA Puget Sound Health Care System is studying the role of genetics in dementia. It seeks to identify the genes responsible for various forms of dementia. Families are being sought with two or more living affected individuals. Participation could involve an interview, examination, review of medical records and a blood sample.

For further information,  
please contact

Ellen Steinbart, RN  
at 206-764-2112  
or toll free  
800-745-4511

### Why Should Minorities Participate in Clinical Trials?

Minorities have long been underrepresented in clinical trials. Groups such as African Americans, Hispanic Americans, Native American Indians, Asian Americans, and women have generally not participated in clinical drug trials nearly as frequently as Caucasian American and male groups.

Studies have shown that drugs sometimes work differently in people in these groups. It is important to make sure that we understand how to use drugs to get the best results in all people.





## In The News:

### Spotlight Article:

#### Traumatic Brain Injury - Football, Warfare, and Long-Term Effects

by Steven T. DeKosky, M.D., et al.

An article recently published in the New England Journal of Medicine examines the effects of traumatic brain injuries and the potential consequences they raise in relationship to dementia. This article complements the work being done by Elaine Peskind, MD and the featured article in this issue of Dimensions.

<http://www.nejm.org/doi/full/10.1056/NEJMp1007051>

#### Mild Memory Loss Is Not a Part of Normal Aging, New Research Finds

September 15, 2010

**ScienceDaily**

Simply getting older is not the cause of mild memory lapses often called senior moments, according to a new study by researchers at the Rush Alzheimer's Disease Center. The study, published in the September 15, 2010, online issue of *Neurology*, the medical journal of the American Academy of Neurology, found that even the very early mild changes in memory that are much more common in old age than dementia are caused by the same brain lesions associated with Alzheimer's disease and other dementias.

<http://www.sciencedaily.com/releases/2010/09/100915162547.htm>

#### Walk Much? It May Protect Your Memory Down the Road

October 13, 2010

**ScienceDaily**

New research suggests that walking at least six miles per week may protect brain size and in turn, preserve memory in old age, according to a study published in the October 13, 2010, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

<http://www.sciencedaily.com/releases/2010/10/101013164703.htm>

#### Best Tests for Predicting Alzheimer's Disease Identified

July 7, 2010

**ScienceDaily**

New research has identified the memory and brain scan tests that appear to predict best whether a person with cognitive problems might develop Alzheimer's disease. <http://www.sciencedaily.com/releases/2010/06/100630162351.htm>



#### *Are Memory Issues Affecting You or a Loved One?*

- Asking Repeated Questions
- Difficulty with Driving Directions
- Forgetting to Take Medication
- Unable to Recall Short-Term Events
- Struggling for Common Words

## A CLINICAL RESEARCH STUDY IS NOW ENROLLING ADULTS WITH **MEMORY IMPAIRMENT**

If you have memory loss or mild cognitive impairment (MCI) and are between the ages of 45 and 90, you may be eligible to participate in a global research study. The purpose of this study is to evaluate an investigational medication as a future potential treatment.

Volunteers may receive study-related:

- Research medication\*
- Laboratory testing
- Medical care
- Cognitive testing

\* some participants will receive placebo (an inactive substance)

*Taking action today may lead to tomorrow's answers*

**FIND OUT MORE TODAY, PLEASE CONTACT:**

**University of Washington  
VA Puget Sound Health Care System  
Alzheimer's Disease Research Center  
206-764-2069  
1-800-317-5382**

CL-09-09-06 06/09

Photograph is for illustrative purposes only. Persons depicted are models, not actual patients.



# Your help today could preserve memories of yesterday for everyone's tomorrow

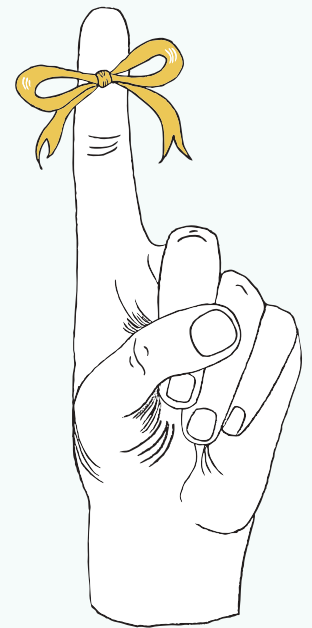
A new study is seeking volunteers to help find a prevention strategy for Alzheimer's Disease

## You may be eligible if:

- ➔ You are between the ages of 45 and 64
- ➔ You do not have Alzheimer's disease or memory problems
- ➔ You are not currently taking a prescribed medication for high cholesterol
- ➔ You are in generally good physical health

## You will receive:

- ➔ A full free health and memory assessment by experts in the field
- ➔ Updates on the latest research
- ➔ Compensation for your time



Join Us in Helping to Find Prevention Strategies  
that Work for Alzheimer's Disease

For more information call:

**1-800-317-5382 or 206-764-2069**

SimBio

Effects of Simvastatin on Biomarkers

University of Washington Alzheimer's Disease Research Center and Veterans Affairs Puget Sound Health Care System

# Save The Date:

## **Memories are Made of This- Dine Around the World Cocktail Gala**

November 13th, 2010, 6:30pm  
Fairmont Olympic Hotel

Eight of the region's renowned chefs will host internationally-themed food stations with sumptuous world cuisine, paired with specially selected wines. This year's live auction includes all-inclusive trips to exotic locales, a special whiskey tasting bar, dancing and entertainment.

## **Art, Creativity, & Living with Dementia**

November 16, 2010  
9:00am-6:00pm  
Frye Art Museum

This one-day conference will focus on how viewing, discussing, and creating art can enhance the lives of people with Alzheimer's disease or related dementia. Perspectives on providing creative outlets for care partners will also be presented.

## **BAND (Brain Aging and NeuroDegeneration) Seminar Series**

Last Monday of the Month  
5:00-6:00pm

Harborview Medical Center,  
Research & Training Building, Auditorium  
Presented by the UW ADRC and the Pacific  
Northwest Udall Center of Excellence in  
Parkinson's Disease Research, physicians  
and scientists will discuss mechanisms of  
brain aging, neurodegenerative diseases,  
and developments in interventions.

## **Future of Health: Gary Small: A Psychia- trist's Most Bizarre Cases**

Thursday, December 16, 2010  
Town Hall Seattle

Small, director of the UCLA Memory and Aging  
Center, relates his most bewildering cases in  
a behind-the-scenes look at psychiatry, mental  
disease, and the puzzling eccentricities that  
make us human.

## **The University of Washington ADRC Support Fund:**

The support fund is used to help support new junior faculty researchers with strong credentials in the field of Alzheimer's disease and also to provide direct support for ongoing research projects of the ADRC. Community support of the ADRC's mission is a valued contribution to the quest to find the causes of and treatments for Alzheimer's disease and related disorders.

For more information regarding the Alzheimer's Disease Research Center Proram Support Fund, please contact Susan Martin, at 206-764-2702, or toll free at 800-329-8387, ext. 6-2702 or by e-mail at [susan.martin@va.gov](mailto:susan.martin@va.gov). Checks should be made out to ADRC and addressed to:

VAPSHCS (S-116 6 EAST),  
Attn: Susan Martin,  
1660 S. Columbian Way  
Seattle, WA 98108



[www.uwadrc.org](http://www.uwadrc.org)

**ADRC Director** Murray A. Raskind, MD  
**ADRC Associate Director and Clinical Core Director** Elaine R. Peskind, MD  
**Education Core Director** James B. Leverenz, MD  
**Dimensions Editor** Kirsten Rohde, RN, BSN  
**Dimensions Associate Editor** Andrew David  
**Dimensions Graphic Designer** Annemieke Beemster Leverenz  
**ADRC Administrator** Molly Chinn  
**Founding Director** George M. Martin, MD

The University of Washington Alzheimer's Disease Research Center (UW ADRC) has been funded by the National Institute on Aging since 1985 to facilitate cutting-edge research on causes and treatments of Alzheimer's disease (AD) and related dementias. In particular, the UW ADRC focuses on research that will enhance the clinical care of patients with AD and their caregivers and make treatment studies broadly available. The ADRC also provides community and professional education about AD and other forms of dementia.

Contact information for *Dimensions*:  
Kirsten Rohde at 206-764-2713 or  
[krohde@u.washington.edu](mailto:krohde@u.washington.edu).

Contact information for the ADRC:  
Molly Chinn at 1-800-317-5382 or  
[wamble@u.washington.edu](mailto:wamble@u.washington.edu)

To be added to the mailing list or for  
reprint permission, contact Susan Martin at  
206-764-2702 or [susan.martin@va.gov](mailto:susan.martin@va.gov).

[www.uwadrc.org](http://www.uwadrc.org)

## DIMENSIONS

Alzheimer's Disease Research Center  
University of Washington/  
VA Puget Sound Health Care System  
S-116 6 East, 1660 S. Columbian Way  
Seattle, WA 98108

Nonprofit Organization  
U.S. POSTAGE PAID  
Seattle, WA  
Permit No. 62

Return Service Requested

61-6645



“See Inside for Research  
Studies Seeking Volunteers”

