

# CONNECTIONS

The Newsletter for the University of Kansas Alzheimer's Disease Center

Fall / Winter 2011

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**DISEASE CENTER**  
The University of Kansas Medical Center

## KU Medical Center Receives National Designation as an Alzheimer's Disease Center

The University of Kansas Medical Center has been awarded a five-year, \$6 million grant from the National Institutes of Health (NIH), putting it among an elite group of 29 institutions which have been nationally designated as Alzheimer's Disease Center by the NIH's National Institute on Aging (NIA). Reflecting its new status as a national center of excellence, the program's name will be the University of Kansas Alzheimer's Disease Center.



"Our Alzheimer's program has long been at the forefront of discovery and has achieved significant success in understanding and treating the disease," said Barbara Atkinson, MD, executive vice chancellor at The University of Kansas Medical Center and executive dean at The University of Kansas School of Medicine. "It is extremely

gratifying that the NIH now considers our program as one of the best in the nation."

Established in 1984, the NIA's Alzheimer's Disease Center (ADC) program provides resources to its Centers of Excellence and supports ongoing research by encouraging a multidisciplinary approach to studying the causes, progression, prevention, diagnosis and treatment of Alzheimer's disease. ADCs also foster the development of new research approaches.

"The Alzheimer's Disease Centers play a vital and varied role in advancing our understanding of Alzheimer's disease, from developing imaging agents that enable us to track the changes taking place in the brain to identifying the genetic variants associated with the disorder," said NIA Director Richard J. Hodes, MD. "We welcome this distinguished group of University of Kansas investigators and clinicians into the program, and we look forward to working closely with them on innovative ways to prevent, delay or treat this devastating neurodegenerative disorder."

Russell Swerdlow, MD, the director of the new KU Alzheimer's Disease Center, said one of KU Medical Center's strengths is its pioneering work on the link between Alzheimer's and brain energy metabolism. Swerdlow's research indicates that mitochondria, the parts of cells that produce much of their energy, are defective in patients with Alzheimer's disease.

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“Our studies are showing that brain energy metabolism plays a role in Alzheimer’s disease - and perhaps a central role,” said Swerdlow. “We think manipulating brain energy metabolism could be a major breakthrough in getting to the root of Alzheimer’s.”

Most recent research in the field of Alzheimer’s has been focused on how to reduce certain proteins, known as amyloid, which form plaque in the brain. Amyloid accumulation in the brain leads to memory impairment. But clinical trials of drugs that slow amyloid production have shown little success in halting the progression of Alzheimer’s. While scientists continue to study the link between amyloid and Alzheimer’s, some researchers, including those at KU Medical Center, are exploring other possibilities as well. “People who already have Alzheimer’s have not responded as hoped to amyloid-type drugs,” said

Jeff Burns, MD, co-director of the new KU Alzheimer’s Disease Center. “Some researchers are now investigating whether giving these drugs at an earlier age could help prevent Alzheimer’s. At KU, we aren’t willing to wait another 10 years to see if new clinical trials show anti-amyloid therapies are effective in younger subjects who haven’t shown signs of the disease yet. That is why we have been pursuing research around how metabolism and energy affects brain cells.”

Swerdlow, Burns and other scientists at KU Medical Center have received international attention for research on how various lifestyle factors, including fitness and physical activity, affect normal aging and Alzheimer’s disease. This research is unique in the field, and contributed to the NIH’s decision to award KU a Center of Excellence grant.

“We know brain cells need energy to function. We believe it is possible a

malfunction in the metabolism of brain cells could lead to the increase of amyloid levels in the brain and the beginnings of Alzheimer’s,” Swerdlow says. “If we can determine how to better regulate the energy processed by brain cells, we may get to the true cause of the disease.”

In establishing the University of Kansas Alzheimer’s Disease Center, Drs. Swerdlow and Burns are joined by members of the KU Medical Center and Lawrence campuses. Pat Laubinger, RN, is the Center’s executive director. William Brooks, PhD, will oversee a neuroimaging core. Eli Michaelis, MD, PhD, and Mary Lou Michaelis, PhD, will lead a core that conducts molecular and genetic studies. Kathy Newell, MD, is in charge of a neuropathology core. Heather Anderson, MD, oversees education and outreach efforts. Jonathan Mahnken, PhD, maintains the Center’s database.

### Dr. Burns named Dr. Edward H. Hashinger Distinguished Professor of Medicine

An investiture ceremony was held on October 18th for Lowell Tilzer, MD, PhD, who was given the Russell Jay Eilers, MD, Chair of Pathology, and for Jeff Burns, MD, who was awarded the Dr. Edward H. Hashinger Distinguished Professorship in Medicine. Pictured here are Richard Barohn, MD, chair of the Department of Neurology; Barbara Atkinson; Dr. Tilzer; Dr. Burns; and Dale Seuferling, president of KU Endowment.



## You Can Help!

Are you, or do you know someone, interested in participating in Alzheimer’s research?

### STUDIES AT A GLANCE

STUDY NAME	NUMBER ENROLLED	TARGET ENROLLMENT	CRITERIA	DESCRIPTION
Trial of Exercise on Aging and Memory (TEAM)	66	100	65 years and older, not currently exercising	This is a year-long study evaluating how exercise may improve thinking and memory in healthy, older adults.
Alzheimer’s Disease Exercise Program Trial (ADEPT)	33	80	55 years and older, mild to moderate AD, not currently exercising	This is a 6 month study to evaluate the effect of aerobic exercise on memory and thinking skills.
SUMMIT	2	5	50 and older, mild to moderate AD	A clinical trial testing whether bapineuzemab, injected subcutaneously, is effective in preventing Alzheimer’s Disease
ADNI 2	8	20	65 and older, with and without memory problems	This study is using information gathered from brain imaging and biomarkers to better understand aging and Alzheimer’s disease.
SPA	6	20	55 and older with a diagnosis of AD	This study is testing the safety and tolerability of R-Prampexole for use in those with Alzheimer’s disease
ADC Program Registry	47	400	65 and older without memory problems, 55 and older with memory problems	Participants in this study will complete three annual assessments as part of the KU ADC, including an annual memory and thinking assessment with a clinician, cognitive testing, physical functioning testing, and lab draws.

For more information, or to see if you would qualify for one of these studies, please call the KU Alzheimer & Memory Research Line at 913-588-0555.



## Why I Chose to Participate in ADNI – A Look In To One Patient’s Experience

Howard Kemper and his wife were intrigued by the national publicity Alzheimer’s disease (AD) was getting and came across a seminar on AD research being held at their local hospital – the University of Kansas Medical Center. They decided to attend to learn more.

It was at this seminar that the Kempers first learned about the ADNI trial and spoke with researchers about volunteer opportunities. A few weeks later, a nurse from the ADNI team at the University of Kansas Medical Center followed up with the couple to assess their interest in participating.

Because Mr. Kemper was in good health, he felt he should participate. His motto was, “If you are healthy enough to participate, why not do so and help others out?” The Kempers were also aware that by becoming involved in a study, they could help advance research into AD

and contribute to future generations. Mr. Kemper enrolled as the participant and his wife as his study partner.

As an ADNI study participant, Mr. Kemper’s experience continues to be a very rewarding one. He visits the Medical Center twice yearly for mental and physical exams. He admits being somewhat on edge during the first few memory tests because he wanted to make sure he did his best and was sometimes frustrated when he couldn’t remember every word or image he was shown. However, he compliments the staff for their help throughout the entire process. Mr. Kemper has also been very pleased by how easy the University of Kansas Medical Center staff has made participation by scheduling follow up procedures and tests during the same appointment to limit the amount of time required.

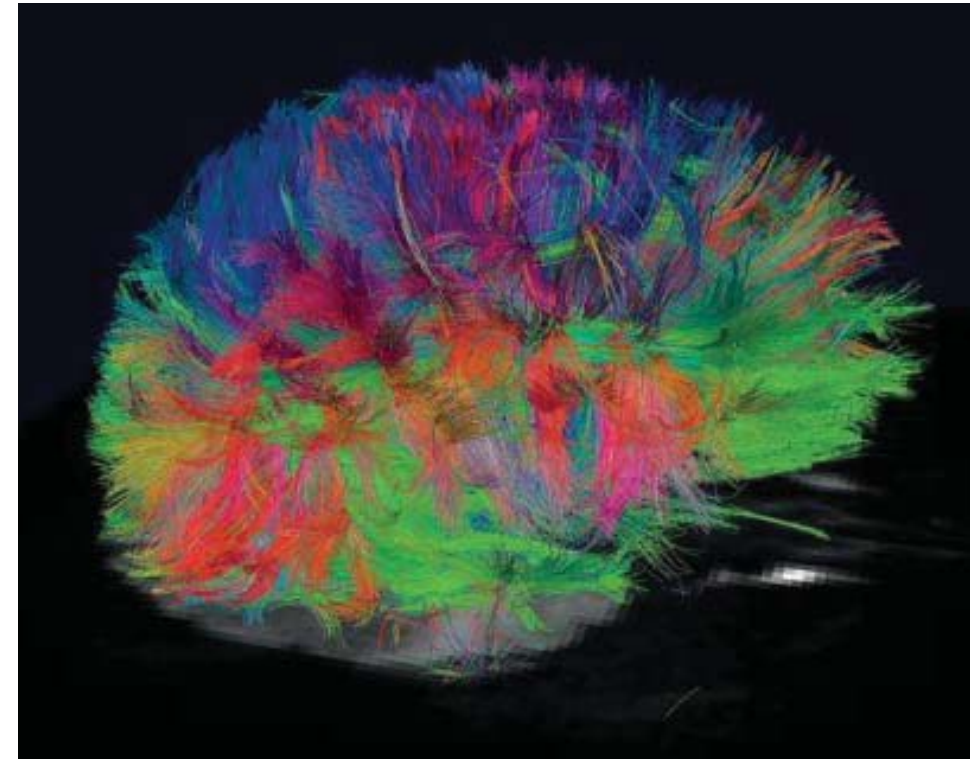
Mr. Kemper admits that he was not thrilled about the lumbar puncture procedure, but praised the ability of the medical staff at the University of Kansas to address his hesitations and alleviate concerns. The staff gave Mr. Kemper ample materials to review and talked him through the entire procedure so he was aware of what to expect before, during and after. The staff also explained the essential role cerebrospinal fluid plays in AD research, so he was able to understand the big picture of why the procedure was necessary. On the day of the procedure, any remaining hesitations were addressed by the nurse who stood by his side and reassured him the entire time.

When asked what advice he would give to others considering participating in an ADNI trial, he said, “It’s easy, takes minimal time, and it’s very rewarding to know you are helping others.”

## The Brain Aging Project Yields Important Maternal Link to Alzheimer’s

People with an immediate family history of Alzheimer’s disease are four to 10 times as likely to contract the condition. A new study now suggests the chances of getting Alzheimer’s are higher if your mother had it than if your father had it.

Jeffrey Burns, the director of the University of Kansas Medical Center’s Alzheimer’s and Memory Program, said the findings don’t mean that children of mothers with Alzheimer’s disease will develop the condition. “It’s not clear on an individual basis how much this risk applies,” he said.



Robyn Honea, DPhil, lead author on the study and other researchers are conducting a larger study as part of the university’s brain-aging project, which is comparing people with early-stage Alzheimer’s disease and individuals with little or no memory problems. As part of the brain-aging project, people undergo periodic MRI scans of the brain so researchers can track brain changes over time and see if those changes have an impact on the development and progression of Alzheimer’s. Researchers are also looking at whether things like exercise can cut the risk of Alzheimer’s or slow its progression. Other research has suggested changes in the brain occur long before symptoms of Alzheimer’s appear.

About five million people in the U.S. currently have Alzheimer’s disease, a progressive brain disorder that causes memory loss and eventually results in total disability and death. The number of new cases of Alzheimer’s are expected to sharply increase as the baby-boom generation ages.

The current study involved 53 people who were considered cognitively normal at the study’s start and were followed for two years. Eleven participants reported having a mother with Alzheimer’s and 10 reported having a father with the disease, while 32 people had no family history. The two groups were given brain scans and cognitive tests throughout the study.

Overall, the study found that subjects who reported a family history of Alzheimer’s disease showed an increase in “gray-matter atrophy,” or brain shrinkage, over the two-year period compared with people who didn’t have a family history of Alzheimer’s. Shrinking of the brain, or brain atrophy, occurs at a faster rate in people with Alzheimer’s compared with those without the disease.

Researchers then looked at changes in specific parts of the brain and found changes in two areas that are associated with the development of Alzheimer’s. They found “significantly greater,” or about twice as much, shrinkage in those regions among study participants whose mother’s had reported Alzheimer’s compared with those without a family history and those who reported having fathers with the disease.

The study, funded by the National Institutes of Health, was published in the March 1 edition of *Neurology*, the medical journal of the American Academy of Neurology.

## Updated Guidelines in Diagnosing Alzheimer's Disease

For the first time in 27 years, clinical diagnostic criteria for Alzheimer's disease dementia have been revised, and research guidelines for earlier stages of the disease have been characterized to reflect a deeper understanding of the disorder. The National Institute on Aging/Alzheimer's Association Diagnostic Guidelines for Alzheimer's Disease outline some new approaches for clinicians and provides scientists with more advanced guidelines for moving forward with research on diagnosis and treatments. They mark a major change in how experts think about and study Alzheimer's disease. Development of the new guidelines was led by the National Institutes of Health and the Alzheimer's Association.

The original criteria were the first to address the disease and described only later stages, when symptoms of dementia are already evident. The updated guidelines announced today cover the full spectrum of the disease as it gradually changes over many years. They describe the earliest preclinical stages of the disease, mild cognitive impairment, and dementia due to Alzheimer's pathology. Importantly, the guidelines now address the use of imaging and biomarkers in blood and spinal fluid that may help determine whether changes in the brain and those in body fluids are due to Alzheimer's disease. Biomarkers are increasingly employed in the research setting to detect onset of the disease and to track progression, but cannot yet be used routinely in clinical diagnosis without further testing and validation.



"Alzheimer's research has greatly evolved over the past quarter of a century. Bringing the diagnostic guidelines up to speed with those advances is both a necessary and rewarding effort that will benefit patients and accelerate the pace of research," said National Institute on Aging Director Richard J. Hodes, M.D.

"We believe that the publication of these articles is a major milestone for the field," said William Thies, Ph.D., chief medical and scientific officer at the Alzheimer's Association. "Our vision is that this process will result in improved diagnosis and treatment of Alzheimer's, and will drive research that ultimately will enable us to detect and treat the disease earlier and more effectively. This would allow more people to live full, rich lives without—or with a minimum of—Alzheimer's symptoms."

"The guidelines discuss biomarkers currently known, and mention others that may have future applications," said Creighton H. Phelps, Ph.D., of the NIA Alzheimer's Disease Centers Program. "With researchers worldwide striving to develop, validate and standardize the application of biomarkers at every stage of Alzheimer's disease, we devised a framework flexible enough to incorporate new findings."

## Caregiver's Corner By Phyllis Switzer



Blessed are they who looked away  
When I spilled the coffee at the  
table today.

Blessed are they who have a cheery  
smile  
Who take the time to chat awhile.

Blessed are they who never say  
"You've told that story three times  
today.

Blessed are they who know the ways  
To bring back memories of yesterday.

Blessed are they who make it known  
I'm loved, respected and not alone.  
Unknown author

"I would like to add one more."

*Blessed are YOU, the Caregivers,  
who make a better day  
And let our love ones know...  
everything will be ok.*

"I ran across this poem and thought  
you might enjoy it. Hope it brings  
comfort and food for thought."

Blessed are they who know today  
My ears must strain to catch the  
things they say.

Blessed are they who understand  
My faltering step and shaking hand.

Blessed are they who seem to know  
My eyes are dim and my wits are slow.

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Disease Center on Facebook by using this link:  
<http://www.facebook.com/KUAMP>

## UPCOMING EVENTS:

### SEMINAR SERIES ON AGING, HEALTH & DEMENTIA

**November 29, 2011, 12:00-1:00 pm CST**

*Brain Aging, Alzheimer's Disease, & Mitochondria*  
Russell Swerdlow, MD, Director  
University of Kansas Alzheimer's Disease Center  
Landon Center on Aging, Room 145

**December 13, 2011, 12:00-1:00 pm CST**

*Neuronal-glia Alterations in Motor Cortex After Stroke*  
Carmen M. Cirstea, MD, PhD, Assistant Professor  
Hoglund Brain Imaging Center  
Orr-Major, Room 2004

### ALZHEIMER & MEMORY PROGRAM CAREGIVER SUPPORT GROUP

2:00-3:30 p.m., Landon Center on Aging, Room 145  
(Second Thursday of Each Month)

**Thursday, November 10th**

**Thursday, December 8th**

**Thursday, January 12th**

### DOWN SYNDROME DEMENTIA CLINIC (DSDC)

Afternoons, Landon Center on Aging Clinic  
(First Thursday of Each Month)

To schedule an appointment, please call 913-588-6820

**Thursday, December 1st**

**Thursday, January 5th**

If you wish to receive this newsletter electronically, please submit your name and e-mail address to us at [KUAMP@kumc.edu](mailto:KUAMP@kumc.edu)

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