Continuation of Early Onset Familial Alzheimer’s Disease Project

During the past five years, William E. Klunk, MD, PhD, codirector of the University of Pittsburgh Alzheimer Disease Research Center (ADRC), has led a project to determine the patterns of brain changes seen in families with rare genes that cause Alzheimer’s disease (AD). This form of AD usually starts between the ages of 40 and 50. In particular, Klunk is interested in determining how long before symptoms appear the amyloid plaques that are characteristic of AD can be detected in the brain.

To detect the amyloid plaques, researchers use a technique developed at the University of Pittsburgh using positron-emission tomography (PET) and a special amyloid-specific chemical called Pittsburgh Compound B or PiB. The past five years of research have shown that amyloid plaques can be detected in almost all people who carry these rare gene mutations more than 10 years before expected symptoms occur. In the next five years, the current project

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Recovery Funds Advance Alzheimer’s Disease Research

The Alzheimer’s Disease Neuroimaging Initiative (ADNI) will receive $24 million in stimulus funds—half from the National Institute on Aging (NIA) and half contributed by the National Institutes of Health (NIH) Office of the Director—to further groundbreaking research to establish neuroimaging and biomarker measures. These funds will enable researchers and ultimately practicing physicians to track changes in the living brain as older people transition from normal cognitive aging to amnestic mild cognitive impairment (MCI), in which individuals have a memory deficit but generally retain other cognitive abilities, and from MCI to Alzheimer’s disease. ADNI, a research partnership supported primarily by NIA with private sector support through the Foundation for NIH, seeks to find neuroimaging and other biological markers that can be used to detect Alzheimer’s disease progression and measure the effectiveness of potential therapies.

The original ADNI involved the study of 800 people who ranged from normal individuals to those with late-stage MCI or overt AD. This new grant expands the scope of ongoing research under ADNI by allowing for the enrollment of participants at an earlier stage of MCI, when symptoms are milder. Furthermore, the funding for this new grant will allow ADNI investigators to extend the length of the original study to assess better the changes in individuals over time. All of the participants will have neuroimaging scans and blood and cerebrospinal fluid analyses to look for changes in the brain.

The overall impact of the added funding will be increased knowledge of the sequence and timing of events leading to MCI and AD and development of better clinical and imaging/fluid biomarker methods for early detection and for monitoring the progression of these conditions. This will facilitate clinical trials of treatments to slow disease progression and ultimately will contribute to the prevention of AD. In 2009, ADNI made a significant step forward in developing a test to help to diagnose the beginning stages of AD sooner and more accurately by measuring levels of two biomarkers—tau and beta-amyloid proteins—in cerebrospinal fluid.

“Researchers and clinicians need imaging and biomarker tools to detect and understand the very earliest signs of pathology that cause changes in the brain some 10–20 years before any clinical symptoms of cognitive impairment or Alzheimer’s may appear,” said ADNI Principal Investigator Michael Weiner, MD, of the San Francisco VA Medical Center and the University of California, San Francisco. “This grant will help us in our goal of establishing a panel of biomarkers that predict those at risk of developing the disease and also reveal which therapies may be effective in treating the disease or preventing its progression.”

The University of Pittsburgh Alzheimer Disease Research Center will be participating in this extension of the ADNI study called ADNI-GO. For more information, please contact MaryAnn Oakley at oakleym@upmc.edu or 412-692-2721.

Congratulations!

Rachel Blasko, an ADRC staff member, was accepted into the Master of Health Science Physician Assistant Program at Lock Haven University, Coudersport campus. Blasko worked with the ADRC administration and with Jennifer Lingler, PhD, CRNP, as a support staff member for several studies related to Alzheimer’s disease. Blasko began her new journey in May 2010.
Becker Spends Fellowship Collaborating with Neurological Research Center in Spain

James T. Becker, PhD, associate director of the Alzheimer Disease Research Center (ADRC) and director of its Neuroimaging Core, had the privilege and pleasure of spending the fall of 2009 at Fundació ACE, Institut Català de Neurociències Apliques, in Barcelona, Spain. His time there was supported by a fellowship awarded to him by the Fulbright Commission.

Fundació ACE is a clinical research center, much like the ADRC. Since it opened its doors in 1995, the clinic has seen in excess of 10,000 patients with a range of neurological diseases and has provided diagnoses and management through the state-funded health care system. In addition to diagnoses and management, there is a day care center and a day hospital. Fundació ACE also participates in Phase II and Phase III clinical trials.

Since 1998, Fundació ACE and the ADRC have organized the biennial Barcelona-Pittsburgh Dementia Update, which is presented in Barcelona. This is an international conference that brings together researchers from the United States and Europe and provides in-depth, up-to-the-minute reviews of the current state-of-the-art research in Alzheimer’s disease (AD) and related dementias. As a result of this collaborative relationship, the ADRC has begun the process of publishing research articles on the use of nonpharmacological therapies in AD and of working to develop research protocols in Spain.

During his time in Barcelona, Becker was able to work with the investigators at Fundació ACE to help them to begin to analyze their extensive data on the earliest manifestations of clinical dementia syndromes. Working with Isabel Hernandez, MD, a neurologist at the center, Becker looked at the long-term outcomes of individuals who first came to the center complaining of problems with their memory. It turns out that these complaints should not be taken lightly and do require a competency exam by neurologists and psychiatrists as well as follow-up examinations. Even if the initial examination is quite normal, AD may not become apparent for five to six years after the initial complaints.

An analysis of patients who initially came to the clinic with mild cognitive impairment found that those who had difficulty with memory storage were the most likely to develop AD. If this was combined with having impairments in multiple cognitive functions, then these were the individuals who developed dementia most quickly. Most provocative, however, was the finding that if patients with mild cognitive impairment were treated with cholinesterase inhibitors such as Aricept, Razadyne, or Exelon, then the time for development of clinical dementia was extended by one to two years. Thus, the early identification of an important clinical syndrome coupled with the effective therapy of that syndrome will have an important impact on an individual’s quality of life.

As a consequence of his time in Spain, Becker and the ADRC have continued their collaborations with Fundació ACE; the work that was completed in 2009 was presented at the American Academy of Neurology 2010 Annual Meeting in Toronto, Ontario, Canada, in April and is being written up for publication in major medical journals. The 2010 Barcelona-Pittsburgh Dementia Update will already have taken place by the time you read this article, and Becker was back in Barcelona in early June for consultation and to attend the annual meeting of the Organization for Human Brain Mapping, the major meeting on brain imaging technology.

The ADRC also is collaborating with this group on two major grant submissions that it hopes will be funded and will allow the ADRC to develop both an epidemiological study and additional work with Pittsburgh Compound B, which was developed at the University of Pittsburgh. This is an exciting time in the ARDC’s international collaborations, and by extending the battle against AD to additional fronts, we can learn substantially more about the disease and how to fight it.
The University of Pittsburgh Alzheimer Disease Research Center thanks the following individuals and companies for their generous donations received July 1, 2009–March 31, 2010.

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Donald and Brenda Morabito
Lyndall and Elizabeth Seiders-Huggler

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Colleen S. Surace

**In Honor of a Speedy Recovery for Jacques Chamar**
Edna Diamond

**In Honor of the Wedding of John and Shawna Garrett**
John and Shawna Garrett
ADRC Honors Volunteers with 20 or More Years of Service

Faculty and staff members of the Alzheimer Disease Research Center (ADRC) recently honored participants who have been a part of the ADRC for the past 20 or more years. The reception was held at the Andy Warhol Museum, located on the North Side of Pittsburgh, on April 6, 2010. Eleven of the 19 volunteer participants who have served for 20 or more years attended the appreciation event. ADRC Director Oscar Lopez, MD, opened the evening with a presentation titled “The History of Healthy Volunteers at the ADRC.” Lopez has been at the ADRC since 1987. Clinical Core Director Judith Saxton, PhD, who has been at the ADRC since its inception, spoke words of appreciation for participants’ dedication and contributions to Alzheimer’s disease research. William Klunk, MD, PhD, ADRC codirector and 21-year veteran of the center, along with founding director Francois Boller, MD, PhD, also were in attendance. Certificates and commemorative gifts from the Wendell August Forge were presented to all participants by Lori Macedonia, PA-C, MPH, who has been with the ADRC for 25 years.

Summit Helps Legislators to Understand the Impact of AD and Related Conditions

The Alzheimer’s Association held the Alzheimer’s Action Summit March 7–9, 2010, in Washington, D.C. Advocates spent time helping legislators to understand the far-reaching impact of the growing population of individuals affected by Alzheimer’s disease (AD) and related conditions.

The essence of the advocates’ message was that as AD increasingly strains an already fragile health care system, there will be an unprecedented need for adequate care, services, and federal research funding to prevent, treat, and cure AD.

The summit included four events: the Advocacy Forum, Diversity Dialogue, Corporate Roundtable, and National Alzheimer’s Gala. Oscar Lopez, MD, director of the Alzheimer Disease Research Center, participated in the Diversity Dialogue. At this event, experts discussed the prevalence of AD in diverse populations as well as what has been done—and what needs to be done—to increase awareness. They also discussed grassroots mobilization initiatives to better engage people in the fight against AD in diverse communities and beyond.

The Alzheimer’s Association 24-hour helpline provides reliable information and support to all who need it. Call the toll-free hotline anytime, day or night, at 1-800-272-3900.