Rodger and Paula Riney know all too well the devastating effects of Alzheimer’s disease. “My mother struggled with it for quite a long time,” said Rodger Riney, the founder and CEO of Scottrade, a nationwide discount retail brokerage firm. “It was just the most awful thing to watch.”

Paula Riney has a similar story. “My dad passed away just over three years ago after battling Alzheimer’s for 12 to 13 years,” she said. “It was one of the saddest things I’ve ever experienced.”

The couple became involved with the Alzheimer’s Association, St. Louis chapter, and ultimately decided to make a significant investment toward research. “We felt that we wanted to do something a little more substantive,” Rodger Riney said. “Certainly something needs to happen because the cost of Alzheimer’s on society is just devastating and it doesn’t get the attention of other diseases.”

“We just felt like we needed to do more,” added Paula Riney.

The couple discussed various initiatives of the university’s Charles F. and Joanne Knight Alzheimer’s Disease Research Center (Knight ADRC) with its director, John C. Morris, MD, the Harvey A. and Dorismae Hacker Friedman Distinguished Professor of Neurology. The Rineys decided to support School of Medicine researcher Beau Ances, MD, PhD, who they previously had met at an Alzheimer’s Association event. “We thought he was a terrific guy,” said Rodger Riney.

Ances, an associate professor of neurology affiliated with the Knight ADRC, is seeking biomarkers and developing imaging techniques to help researchers visualize amyloid and tau deposits in the brain. These protein deposits are hallmarks of Alzheimer’s. Amyloids form clumps outside of brain cells that disrupt neural networks, Ances said, while tau deposits form “tangles,” which twist and destroy communication pathways.

Studies by the Knight ADRC have shown that tau and amyloid can start to show up in the brain 15 to 20 years before symptoms manifest. “A lot of changes go on in this early preclinical phase,” Ances said. “Even though the individual is very normal, he or she already has pathology.”

While amyloid imaging has been used extensively in Alzheimer’s research studies, Washington University is one of the few sites worldwide that can image tau. These tau deposits can be viewed with labeled radioisotopes and a PET scanner, Ances explained.

Better imaging techniques will help researchers pinpoint the disease mechanisms, he added, and identify therapies that could stop the disease or delay onset. “My biggest hope is that we could find something to stop it in its tracks,” said Paula Riney.

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