It is a disease most commonly associated with the elderly, yet exactly why age is a risk factor for Alzheimer’s remains unknown.

Based on her many years of research, Marcia Gordon believes the body’s immune system contributes to the neurodegeneration. Studies have shown that the buildup of two proteins in the brain – beta amyloid and tau – is associated with Alzheimer’s.

“The brain tries to correct for that,” triggering an immune response and inflammation, Gordon said. In her laboratory, she has experimented with blocking the inflammation to see how it affects the buildup of tau, which is believed to cause the death of brain cells in Alzheimer’s patients.

After years of research at the University of South Florida, Gordon and her husband, David Morgan, are joining the growing number of College of Human Medicine researchers studying the causes and seeking better treatments for neurodegenerative diseases, including Alzheimer’s and Parkinson’s.

Gordon’s and Morgan’s research already has led to clinical trials of a vaccine and of antibody injections to counteract the buildup of beta amyloid, which begins accumulating in patients’ brains long before symptoms appear. They are researching another treatment they hope will reverse the effects of tau.

Currently there is no cure or effective treatment for Alzheimer’s, “but we’re very, very close,” Gordon said. “Now we have the ability to look inside the human brain (with a PET scan) and see if a patient has an accumulation of tau.”

Early diagnosis could allow physicians to begin treating the disease, thus delaying or preventing the onset of symptoms.

Joining the College of Human Medicine offers her the opportunity to work closely with other scientists studying Alzheimer’s, Parkinson’s and other neurodegenerative diseases, Gordon said.

“We’re starting to see that a lot of what we’re learning in one disease has application in the other disease,” she said. “We can work a lot faster and do a lot more if we interact and cooperate with each other.”