Hardy wins Armstrong Fund for Science Award

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Chemist Jeanne Hardy has won the seventh annual Armstrong Fund for Science Awards, which this year is granting $30,000 over two years to encourage transformative research that introduces new ways of thinking about pressing scientific or technical challenges. Hardy will be recognized at the Honors Dinner for invited faculty on April 29.

Hardy’s lab investigates the role of a protein known as caspase-6, among the most promising drug targets for treatment of Alzheimer’s disease. To treat Alzheimer’s, it is essential that only caspase-6 but no other related proteins are inhibited, she explains. “My lab has discovered that caspase-6 can fold into a particular helical conformation that no other caspase can adopt. This is key because drugs that hold caspase-6 in this conformation would fulfill this requirement, inhibiting caspase-6 specifically without affecting any other caspases.”

To use caspase-6 as a drug target, it is essential to know that caspase-6 rests in this helical conformation in solution. The only way to assess the structure of caspase-6 in solution is to use nuclear magnetic resonance (NMR) spectroscopy. Through the Armstrong Fund award, Hardy’s graduate research assistant Kevin Dagbay will be supported from August to May 2014 to develop a procedure for isotopic caspase-6 labeling in solution.
Alzheimer’s disease is on track to become the country’s single largest medical expense, costing an estimated $1.1 trillion annually by 2050, and no suitable treatments exist.

Hardy says, “Determining the structure of caspase-6 in solution by NMR using selective isotopic labeling of key residues will validate caspase-6 as a drug target and allow us to make better caspase-6-directed Alzheimer’s therapies that target the helical conformation.”

The Office of Research and Engagement headed by Vice Chancellor Michael Malone administers Armstrong grants in a competitive proposal process. Malone notes, “The campus greatly appreciates the Armstrongs’ generosity and confidence in our institution and faculty. Giving our faculty opportunities to innovate and excel in their research is an extraordinary gesture.”

Awardees agree to present a public “Science for Non-scientists” lecture when their work is complete. Benefactors John and Elizabeth Armstrong established their Fund for Science in 2006 to identify and support promising research directions that do not yet have enough data for application to standard funding channels. “Elizabeth and I want to promote major scientific advances in society by supporting researchers with bold vision, documented credentials and a passion for results,” Armstrong says.