SENSING CHANGE

MU researchers need TigerPlace residents to fine tune technologies that can keep them and seniors throughout the country independent and active.

Americans are living longer and more fulfilled lives. However, their desire to live independent lifestyles comes with risks. To address these issues, researchers from multiple disciplines at MU are developing “smart-home” technologies. These innovations are elevating health care to a higher level by keeping older adults living independently and controlling costs.

During the course of this research project, high-technology sensors that monitor walking and sleeping patterns will continue to be tested. The results will enable researchers to develop software that will allow this technology to be used by home-health agencies and health care providers around the world.

Researchers are using six types of sensors to assess the current activity levels of TigerPlace residents. These include general motion sensors, sensor mats, stove/temperature sensors, bed sensors that measure pulse rates, floor vibration sensors that track walking patterns, and video systems that monitor movement (the privacy of all residents will be respected).

Sensors will be installed in participants’ apartments. This will allow researchers to establish baseline walking and sleeping patterns and detect unusual walking patterns, falls, nighttime restlessness as well as a stove burner left on too long. This preventative health care model will reduce the risks associated with seniors living independently.

The monitoring systems will be supplied by collaborators at the University of Virginia, who have started developing floor vibration sensors and testing sensors in assisted care facilities. Planned extensions will include a multicamera system to map walking patterns and help researchers find ways to predict falls and other risks associated with aging.

“These sensors are a safety net to provide protection and keep them connected to the outside world just in case something happens,” says Marge Skubic, the MU research team leader. “Residents of TigerPlace have a unique opportunity to participate in a new research project that will help develop technology for seniors throughout the country.”

This project has multiple goals. One is to help TigerPlace residents “age in place.” This concept encourages preventive health care that keeps seniors living in the home of their choice for as long as possible without the forced moves to a more controlled environment. Second, it will offer a model for smart-home technology for seniors to other researchers. And last, but certainly not least, it will provide policy makers with answers to complex questions of cost effectiveness and outcomes to help guide policy decisions about services for older people, such as Medicare and Medicaid.

Join a Winning Team

The project is led by Marge Skubic, an associate professor of electrical and computer engineering, who specializes in robotics and sensory perception.

If you are a TigerPlace resident and interested in participating in this innovative research study, contact Chuck Servey or Mandy Crump.

Engineering and nursing students interested in working on the study, contact Professor Skubic at (573) 882-7766 or SkubicM@missouri.edu.