

Robotics: Enhancing veterans home residents' health with robots

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Oregon State University researchers are partnering with the Edward C. Allworth Veterans' Home in Lebanon, Oregon, on a federally funded project to see if robots can improve residents' health and wellness by engaging them in physical and mental exercise.

Naomi Fitter, assistant professor of robotics in the OSU College of Engineering, is leading the \$800,000 study, funded by the National Science Foundation's National Robotics Initiative through the National Institutes of Health's National Institute on Aging.

The exact nature of the study will take shape after interviews with veterans' home staff and residents are completed, Fitter said. At this stage of the project, Fitter is envisioning studying physical therapy regimens and other physical and cognitive exercise routines – “game-ified, enticing and entertaining” – being led by a human-sized robot.

“The home already has virtual reality setups as part of its physical therapy facilities,” Fitter said. “We want to see if a physically present robot agent, there in the same space, can be an improvement. Residents can do their exercise routines with a ‘buddy,’ possibly with more engagement, especially between physical therapists’ visits when human support for exercise practice is not typically available.”

Fitter says a robot in common areas of the home could perform exercises with the veterans, encouraging them to be physically active in a group environment that also may benefit them socially.

“And we’ll strive toward minimizing the difficulty of operating the system because we’ve learned that can be a real pain point, a barrier to adoption,” Fitter said. “We’ve also learned that physical robots have more clout

and motivational ability compared to virtual reality systems, or tablets or computers.”

In addition, the researchers will look at whether other types of robot interventions can be helpful in a skilled nursing environment such as the veterans’ home – for example, alleviating nurse burnout by handling some of the responses when residents press their call buttons.

“We have robots in the lab that might be able to help with that type of thing,” Fitter said. “We can also look at whether telepresence robots can help the residents videoconference with friends and relatives. And there are pettable seal robots that can be used to help with dementia care, to provide comfort at important times of day, like sundown.”

Bill Smart, professor of mechanical engineering and robotics, is a co-principal investigator, and Carolyn Aldwin, director of the Center for Healthy Aging Research in the College of Public Health and Human Sciences, is on the research team as well.

“It seems most likely we’ll explore the breadth of applications to see what from our current arsenal might be most useful, and see what other needs and ideas veterans’ home staff might have that we did not think of in our initial brainstorming,” Fitter said.

The Edward C. Allworth Veterans’ Home is named for OSU alumnus Maj. Edward Christopher Allworth, who received the Congressional Medal of Honor in World War I for leading a canal crossing that led to the capture of 100 enemy troops during the Meuse-Argonne Battle.

Allworth graduated from Oregon Agricultural College, as OSU was then known, in 1916. In 1925 he became the first director of the Memorial Union, a position he held until his retirement in 1963.

Allworth died in Portland in 1966 and is buried in Crystal Lake Cemetery in Corvallis.

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