

Fueling fitness on the final frontier

EurekaAlert!

Think keeping in shape is an uphill battle? Try staying fit in space, where living quarters are cramped and prolonged weightlessness withers muscle and bone.

That's the challenge a group of Michigan State University researchers will address with a new three-year, \$1.2 million grant from NASA. Their goal is to keep astronauts motivated to exercise during multiyear exploratory missions.

"You could give astronauts the best exercise regimen there is, but if you can't get them to stick to it, it isn't going to help," said project leader Deborah Feltz, University Distinguished Professor of kinesiology at MSU.

The same round of NASA funding includes a separate grant of \$1.2 million for psychology professor Steve Kozlowski and colleagues to study teamwork in space.

Based on Feltz's previous findings that virtual partners can improve a person's motivation to exercise, the researchers will create and test software to see what type of computer-generated workout partner is most effective.

The project is part of a broader NASA effort to help space crews work together effectively and maintain their health during the long voyages the agency plans for the coming decades. A manned flight to Mars, for instance, has moved from the pages of science fiction to the national science agenda; NASA aims to have astronauts orbit the red planet in the early 2030s.

Feltz said the health challenges of space travel are evident at the International Space Station, where astronauts typically spend six months at a time.

"If they don't do the exercises they need to do up there, they come back with significant bone loss, muscle loss and lost cardiovascular function," she said. "You don't need that stuff as much in a weightless environment, but you sure need it here."

The psychological benefits of exercise will be particularly important for a crew flying millions of miles through space in a home about the size of a moving van.

"In addition to the physical and performance benefits of exercise, many crew members report it helps with psychological stress as well," said project partner Lori Ploutz-Snyder, NASA's lead exercise physiologist at the Johnson Space Center and a former MSU postdoctoral fellow.

"The crew will need to exercise in the same room on the same equipment every day for up to three years," she added. "There is an obvious need to make this exercise fun and challenging, and to keep the crew motivated under these unusual

Fueling fitness on the final frontier

Published on Electronic Component News (<http://www.ecnmag.com>)

circumstances."

Also working on the project are Norbert Kerr, professor of psychology at MSU; James Pivarnik, MSU professor of kinesiology and epidemiology; and Brian Winn, co-director of MSU's Games for Entertainment and Learning Laboratory.

Original release:

http://www.eurekalert.org/pub_releases/2013-05/msu-ffo052113.php [1]

Source URL (retrieved on 12/25/2014 - 7:20pm):

<http://www.ecnmag.com/news/2013/05/fueling-fitness-final-frontier>

Links:

[1] http://www.eurekalert.org/pub_releases/2013-05/msu-ffo052113.php