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What are the Long-term Affects of Spaceflight on Human Muscle Tissue? | Biological Engineering

09/28/2015

Sept. 28, 2015 - Biological engineering doctoral candidate Charles Harding wants to know how long-term spaceflight can affect human muscle tissue. It's an increasingly important topic as scientists and engineers move closer to manned space flights to Mars.

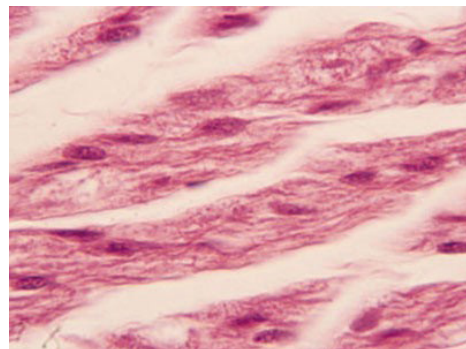
USU Biological Engineer Doctoral Candidate Charles Harding

Harding is getting the attention of fellow experts, and he recently won a \$15,000 fellowship award that will help him further explore the issue.

The fellowship was awarded through the Utah NASA Space Grant Consortium, or UNSGC. One of the goals of the consortium is to support STEM projects related to NASA's ongoing missions.

Harding said he's privileged to receive the funding.

"Receiving this fellowship puts me one step closer to my long-term goal of contributing to human space exploration," he said. "The focus of my research is the reduction of oxidative stress and microgravity-induced muscular atrophy."



Harding is studying the effects of long-term space-flight on human muscle tissue.

Harding plans to present at an upcoming UNSGC fellowship symposium, to network with other researchers and professionals who share the same ambition for improving space medicine and biotechnology.

Harding is a Ph.D. student of biological engineering with assistant professor Elizabeth Vargis. He began his research on muscle atrophy in simulated microgravity in January 2015. His experience in mammalian cell culture and bioreactor operation comes from two internships at Thermo Fisher Scientific during the summers of 2012 and 2013. The internship in 2013 also focused on protein and glycan analytics.

Since February 2014, he has worked part time at the cell culture R&D lab at GE Healthcare in Logan. His goal is to improve human fitness during extended spaceflight, as well as alleviate muscular atrophy symptoms for everyday medical patients.

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