

BIO-INSPIRED ADVANCED EXERCISE CONCEPTS

Challenge - Seeks bio-inspired approaches for compact and efficient Advanced Exercise Concepts (AECs). These concepts are needed to counteract muscular atrophy and improve the overall wellness of astronauts living in zero-gravity during a 21 day mission.



Challenge Budget
\$44,175

Challenge Award
\$15,000

Winning concept gathered inspiration from a chameleon's tongue which stores energy in a spiral structure at the base of its tongue.



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Results

- The Challenge winner provided the solution, "Bio-Inspired Micro-Gravity Exercise Concept" (BIMGEC).
- The winning design met the weight, size, and range of motion requirements along with providing aerobic and resistive exercise capabilities and is powered by a lithium polymer battery.