STEMRAD®

Radiation Protection on Earth and Beyond

# ASTRORAD®

## Shielding Astronauts from Spaceborne Radiation

Deployable alone or in combination with on-board storm shelter

Full mobility and enhanced ergonomics

Enabler of deep-space missions

- In the event of a solar particle event, astronauts will be exposed to dangerously high dose rates
- Through the technological breakthrough of selectively shielding sensitive organs and the stem cells within them, StemRad has made protection from spaceborne radiation possible
- The AstroRad enables the astronaut to exit the storm shelter to perform important activities even in the midst of a solar storm
- AstroRad Dramatically reduces Radiation Exposure Induced Death (REID) while eliminating the possibility of Acute Radiation Syndrome (ARS)


*In Collaboration with* LOCKHEED MARTIN

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# ASTRORAD®

Shielding Astronauts from Spaceborne Radiation

Fully Compatible with Current Vehicle Architectures

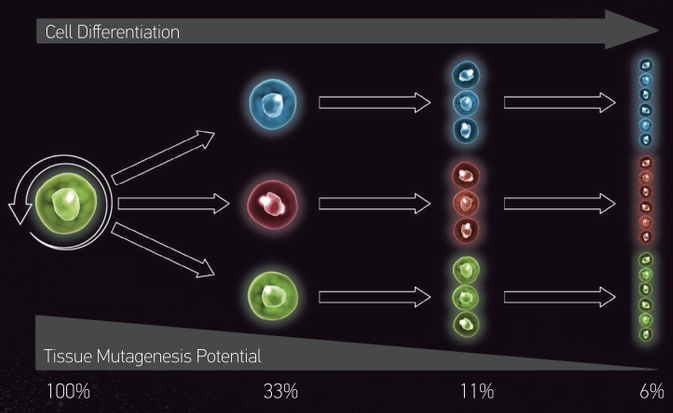
Highly Effective Against Solar Particle Events (SPE)

Payload Reduction Through Additive Manufacturing from Onboard Recyclables

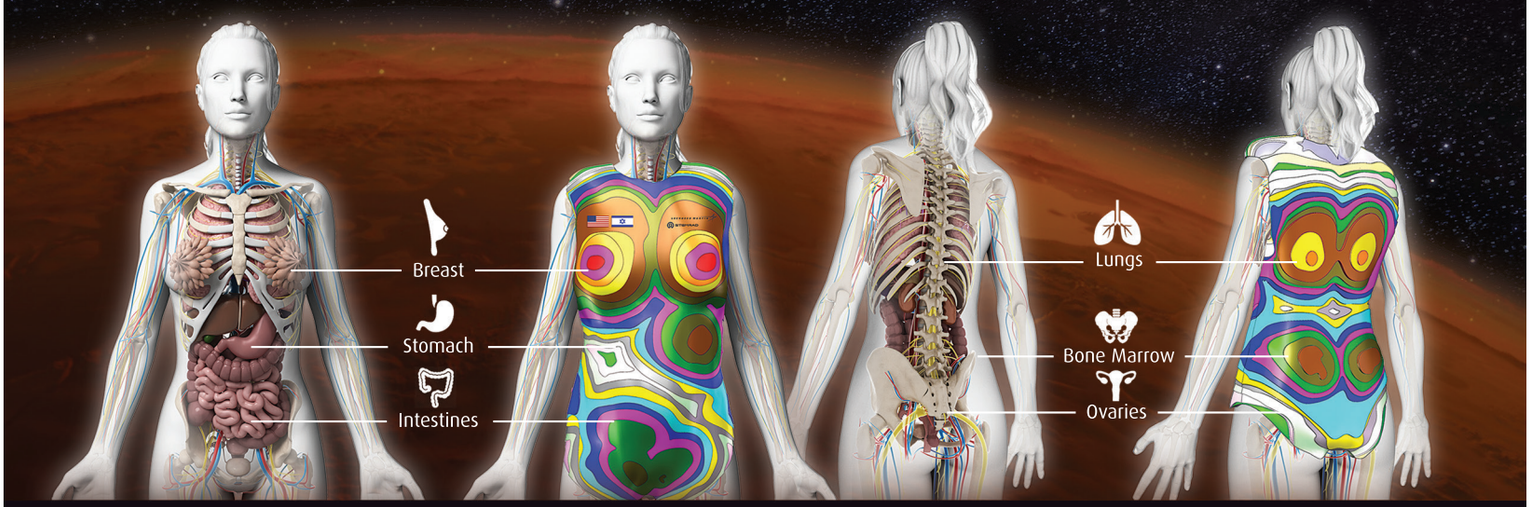
Advanced Ergonomics Enabling Long-Duration Use

## Preventing Cancer through Enhanced Protection of Stem Cells

A mutated stem cell produces thousands of mutated daughter cells, exponentially increasing the likelihood of cancer. StemRad's smart shielding spares stem cells of radiation, dramatically reducing the number of mutated cells in an organ.



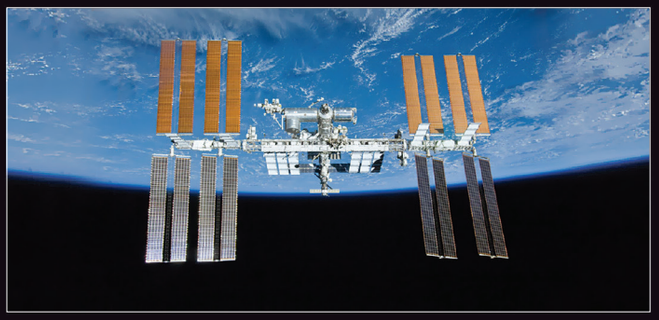

## Proprietary Smart Shielding that Focuses Protection on the most Vulnerable Organs:




### Manifested on Orion around the Moon:

MARE | Matroshka AstroRad Radiation Experiment. A collaboration in deep space aboard Orion Artemis I, between NASA, ISA and DLR.

### Manifested on International Space Station:



ISS | Ergonomic Testing of AstroRad aboard ISS in 2019 (In Collaboration with Lockheed Martin and CASIS).