



Crew 208 Medical Makers Mission Plan

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Medical Makers is a global community of innovators, patients, and healthcare providers who use low-cost technologies to make sustainable solutions to save lives, time, and money. Medical Makers host Medical Make-A-Thons worldwide to crowdsource low-cost, high-quality, life-changing 3D printable solutions for 3D4MD's digital library.

Our MDRS projects include:

- 3D printing drone maps of MDRS and the surrounding Mars-like terrain
- Evaluating a new drone controller during flight tests, including an outdoor inspection of a Martian habitat during a simulated emergency
- Evaluating a low-cost, high-fidelity, 3D printed thoracentesis trainer designed to allow Crew Medical Officers, their back-ups, and healthcare professionals to attain and maintain life-saving surgical skills to serve astronauts on long space missions and the 5 billion people who lack access to safe, timely, and affordable surgical care

- Demonstrating the technical feasibility of bike-powered 3D printing by Martian analogue astronauts -- who are following the International Space Station exercise bike schedule -- to empower the 1 billion people without access to electricity to use portable 3D printing technologies
- Testing a wearable sensor that monitors wear time for 3D printed prosthetic hands to reduce the risk of complications
- 3D printing essential items on demand locally to save lives, time and money for the 3.75 billion people who live in remote or rural areas, the 136 million people who require humanitarian aid, and astronauts on long space missions
- 3D printing low-cost, high-quality medical devices for healthcare providers who serve the 3.75 billion people who live in remote or rural areas and astronauts on long space missions
- Testing a reusable and simple 3D printable ostomy system for stoma patients who cannot afford disposable ostomy appliances, a growing global industry that costs healthcare systems \$2.5 billion a year
- Using reusable, personalized, biodegradable 3D printed straws to conserve water at MDRS and reduce the amount of plastic waste in landfills and oceans

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