Artemis Moonbase Simulation One
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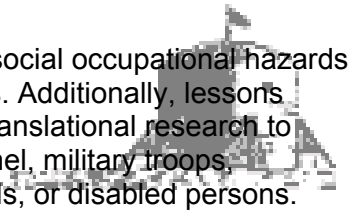
## Occupational Psychosocial Factors in Mars Analogue Environments
## Principal Investigator: William Fung-Schwarz

**Background/Aims:** The aim of this study is to explore the effects of a ground-based simulated space mission (called an analogue environment or simulation) on the day-to-day psychosocial "factors" of volunteer crewmembers. Because the analogue simulation is an isolated and confined setting, factors (stress, small shared living areas, close interaction with fellow crewmembers, and continuous confinement to the habitat) may significantly influence both work and personal life. These "occupational psychosocial factors" are the focus of this investigation. Because crewmembers are both working and living in the same space, factors that do not usually affect work performance or job satisfaction become more important. The overall climate of work safety is critical for job performance and optimal functioning. Understanding how crewmembers cope in an isolated work environment assists with enhanced overall functioning. Therefore, the purpose of this study is to investigate changes over time in crewmembers' stress, coping, and functional health in an analogue environment. Furthermore, this study will investigate all types of coping including the following: problem-focused coping, intimacy-seeking coping, emotion-focused coping, and spiritual-focused coping.

**Setting:** During 2-week rotations at an analogue environment, 6-7 member volunteer crews will complete space simulations. At these "lessons learned" laboratories, crewmembers complete a variety of industry and academic sponsored physical and biological research studies. This study, "Occupational Psychosocial Factors in Mars Analogue Environments" is one of many on-going studies at the analogue environment. Currently there are two analogues (both owned and operated by the non-profit organization called the Mars Society):

- Mars Desert Research Station (MDRS), which operate from November 31-May 31 each year, is located in Hanksville, Utah
- The Flashline Mars Arctic Research Station (FMARS), which operates from July 1-31 each year, is located on Devon Island, Canada

**Methods:** Study data collection methods will include: repeated measures computerized surveys (with paper/pencil backups), focus group discussions, group sharing activities, and semi-structured interviews. Additionally, a retrospective content analysis of past crewmember reports will be completed. Both quantitative and qualitative analysis will occur with data generated in this study. The principal investigator (who will be participating in the crew rotation with participants) will have responsibility of data collection and analysis.



**Significance:** Having a thorough, evidence-based knowledge of psychosocial occupational hazards in Mars analogues may be significant in understanding future Mars crews. Additionally, lessons learned from Mars analogue research may be important in establishing translational research to facilitate coping in families in remote communities, public service personnel, military troops, incarcerated populations, isolated elderly citizens, chronically ill individuals, or disabled persons.

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