

Bristol PhD student to lead team to experience 'life on Mars'

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Ashley Dale, a PhD student at the University of Bristol, will lead a team of seven experts to the Mars Desert Research Station (MDRS) in Utah's high-altitude terrain on 18 January.

For two weeks Ashley and his team will be part of a simulated experiment to replicate life on Mars. Their physical and psychological responses to the conditions and food supplies will be studied to help prepare astronauts for future missions to the red planet.

The crew will live together in a small Habitat Module, with limited electricity, food, oxygen and water.

The specialist team will carry out research into a myriad of ground breaking technologies that will eventually be used in real space

programmes, including those developed at NASA, the European Space Agency and the Canadian Space Agency.

They will be working on everything from quantifying neurological responses with prototype head-mounted EEGs, to tele-robotic rover field-testing, to development of protocols in tele-surgery studies with a group at the Concordia base in Antarctica, to field-testing of hardware for oxygen and hydrogen extraction from soil.

All outdoor exploration and fieldwork will be conducted wearing a new generation of analogue spacesuits with air supply packs and the researchers will also test ultrasonic spacesuit gloves, which feed information to the user's fingers to give a sense of texture and temperature, allowing better awareness of the environment around them.



At 25, Ashley is the youngest member of the team. He said: "I began organising this expedition in late 2011. The learning curve and ramp up in my responsibilities was steep, especially when doing an unrelated PhD, but I feel I've gained much from this already.

"The coming weeks will be the culmination of over a year of effort. I

have pulled together an elite team with an all-encompassing background. I am excited. This will be an intense and productive experience."

Ashley is joined by two University of Bristol PhD students, Michaela Musilova and Sue Ann Seah who are specialists in astrobiology and spacesuit design engineering, as well as Ewan Reid, crew engineer, Vibha Srivastava, crew scientist and Dr Susan Jewell, crew executive and health and safety officer.

The MDRS has hosted a multitude of researchers, scientists and engineers in the past, but Ashley's team has two members unique to their mission - Kai Staats, a science documentary film maker and a 2ft tall humanoid robot.

Kai will generate over 100 hours of footage during the expedition. The robot is programmed to recognise voices, can text speech and can move in response to human actions. It is the latest prototype of the NAO robot, and will be used to conduct human-robot interaction studies.

More information: mdrs.marssociety.org/

Provided by University of Bristol

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