



# 2021 SMOPS MISSION

## *Crew roles description*

### **Greetings!**

Thank you for your interest in participating as a crewmember at the SMOPS MISSION at MDRS.

In this simulation at the Mars Desert Research Station from the 24th of April to the 9th of May, we will investigate methods and innovative technologies related to the health of the future astronauts that will walk on the Red Planet.

The mission is organised and managed by Mars Planet, Italian chapter of the Mars Society. The expedition will be funded by our sponsors and partners.

### **About this document**

This document contains the crew roles' official description, taken directly from the Application Instruction document, created by the Mars Society for the applications to the Mars Desert Research Station (for reference, the original document is available [here](#)).

### **Crew Roles**

Please use the following information as a guide for which positions you qualify for as a crewmember in SMOPS mission. Only apply for those roles for which you qualify. Please note that you are only applying for these roles, and they may be changed at the discretion of the SMOPS management team.

There is of course flexibility in each of these roles and you are also invited to propose another role for yourself based on crew need and/or experience and education.

## **Commander**

The Commander gets the glory, but they are also responsible for the overall safety, organization and management of the mission. This means that they need to be in charge from the inception of the mission, by working on the planning and development of the crew's goals and how to accomplish them. They are responsible for the crew's logistics before, during and after the mission, although sometimes they turn some of those responsibilities over to the XO. The commander is the person held accountable for all things related to the mission, and is in command of all things while at Mission Site, although they still need to respect the overall authority of Mission staff and the HSO in health and safety matters. Commanders preferably will have prior successful Mission experience, but can also have gained their leadership skills in their own field and/or via school and field experience. Commanders must have demonstrated leadership and experience in remote or challenging field areas.

In order to be commander, the applicant must meet one of the following criteria:

- Must have served satisfactorily as crew commander in a prior field season
- Must have served satisfactorily as a crew member in a prior field season and show previous leadership experience in their field
- Must have served satisfactorily in a leadership role in a field expedition and/or a remote location

All crew commanders will be screened and approved by the selection committee prior to assignment.

## **Executive Officer (XO)**

The XO's role shifts slightly depending on the style of leadership used by the Commander. Often XO's are in charge of the logistics prior to a mission and the day-to-day schedule while at Mission Site. Not all crews require an XO and an XO should never be selected simply because a person has no other role they can fill. The XO needs to be able to deal fairly and justly with all crewmembers and support the Commander's decisions in overall mission planning. An XO should have prior logistic skills and experience in small group leadership.

## **Health and Safety Officer (HSO)**

The role of the HSO is dependent on the applicant's skill level. They must have, at minimum, current first aid and CPR training and they must provide proof of this prior to their crew's arrival at Mission Site. First responder training is preferred and EMT's, nurses and doctors are highly desired. This position is also responsible for the operational safety of the crew and the campus.

## **Crew Engineer**

The role of the Crew Engineer is the most misunderstood of all the positions at Mission Site. The Crew Engineer is responsible for the maintenance and monitoring of the station, its buildings and systems. The person in this position has to think proactively and be able to think like a Martian in terms of active response to the physical

environment at Mission Site. In order for daily activities to proceed as scheduled, the crew engineer needs to routinely monitor the equipment being used by the crew and make sure it is ready for whatever is planned. In addition, when systems fail, the crew engineer needs to diagnose the problem and contact Mission Support with a plan for solving the problem. While the Crew Engineer generally has an engineering background, experience proactively maintaining functionality of a large facility and/or project is more important than actual engineering skills.

### **GreenHab Officer**

This person is responsible for keeping the crops alive and thriving in the GreenHab, as well as the overall maintenance and monitoring of the GreenHab's environmental controls. GreenHab Officers can have experience in biology and/or gardening. Experience growing plants in a greenhouse and greenhouse management is highly desired. At a minimum, the GreenHab Officer must be committed to maintaining the crew crops with dedication to their survival and documentation of harvest. To qualify as a GreenHab Officer, the person must take and pass the GreenHab Exam for GreenHab Officers before their arrival at Mission Site.

### **Crew Scientist, Crew Geologist, Crew Biologist**

The role of a scientist on the crew is to conduct research and maintain the ScienceDome and its equipment. They generally plan the crew's EVAs based on their research goals. They must have pre-approval from their home institution for any studies done at Mission Site. This is particularly important if the scientist is studying human factors. All human factors research is required to be approved by the home institution's IRB, even if it doesn't require an IRB. In that case, simple proof that it was reviewed and an IRB was not deemed necessary is all that is needed for the research.

### **Crew Astronomer**

The crew astronomer must have both experience using a telescope and a research project that has been approved by the Mission Site Astronomy Team. They will work with the Director of Observatories prior to their arrival at MDRS and must take an online test in order to operate the observatories.

### **Crew Journalist**

The Crew Journalist is responsible for the daily reports and photos sent from Mission Site. This included a daily Journalist Report that is a record of your crew's daily life, but they should also be the organizer for the crew's media efforts.

### **Crew Artist/Artist in Residence**

We welcome student and professional artists in all disciplines, including but not limited to fine art, graphic art, photography, film, journalism, and writing. In order to qualify as Artist-In-Residence, you must demonstrate that you make your living in that field and the final decision on whether that person qualifies as Artist-in-residence belongs to Mission Site.