

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
New Worlds - Non-Traditional Space Education and Outreach (7)

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DEVELOPING THE FIRST ACADEMIC PROGRAMS DEDICATED TO MAKING LIFE  
MULTIPLANETARY TO ADVANCE THE SPACE WORKFORCE

**Abstract**

A lack of Mars-focused education has stifled the development of space technology and exploration for more than half a century. Creating a new branch of human civilization likely requires significantly more research and knowledge than has been conducted to date. Mars education could be one of the largest gaps that Mars University (MarsU) plans to improve upon in the U.S. and international community. The challenge of designing and building systems for the Mars environment will foster the creativity and critical thinking needed for any research, activities, and entrepreneurial ventures in extreme environments on Earth, Mars, and throughout the Solar system.

As over 400 interested students have expressed or registered interest to attend courses at MarsU, this demonstrates a need for innovative approaches focused on becoming multiplanetary to advance the current and future global space workforce.

Mars University is an international team of leaders, faculty, and researchers who plan to offer a Graduate Certificate Program in Mars Settlement and Exploration, a synchronous online program that will start this summer. MarsU is also developing the first annual five-week Mars Summer Program (MSP) for young professionals, graduates, undergraduates, and executives to be held in-person at a host partner institution. Due to the uncertainty with the Covid-19 pandemic, the Summer Program has been postponed from 2021 to 2022.

The interactive Programs unite young professionals in a project-based environment with faculty and researchers to learn advanced science, mathematics, technology, and engineering topics on the pre-arrival and post-arrival activities on the Martian surface. In engaging to hear input from interested partners, sponsors, and organisations with a survey, this research and presentation explores the challenges, opportunities, takeaways, and learning assessments of the first academic Programs dedicated to making life multiplanetary. The presentation from leaders instrumental to the founding and planning of academic programs hosts an interactive presentation and dialogue about ways to get involved, workshops, seminars, and career opportunities.

The innovative workforce development and higher education programs hold the potential to significantly improve human understanding about Mars settlement and exploration. Mars University plans to equip the next generation of researchers, astronauts, and entrepreneurs with the technical skill sets and knowledge to create a habitable world on Mars.

Significance. Nelson Mandela said: "Education is the most powerful thing that can change the world". By training the next generation of humans and engineers, MarsU is building a self-sustaining ecosystem to

empower people to better find their passions, to develop the research and practice of designing, operating, and sustaining the first colonies on the Martian surface.